Fintech Regulation and the Licensing Principle

Edited by

Dário Moura Vicente
Diogo Pereira Duarte
Catarina Granadeiro

CENTRO DE INVESTIGAÇÃO DE DIREITO PRIVADO

EBI European Banking Institute

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EBI European Banking Institute

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Contents

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Foreword

by the President of the Academic Board of the European Banking Institute (EBI)

It is with pleasure that I write a foreword to this very interesting and well-structured collective work, which is the by-product of an international academic conference held in Lisbon in mid-2022. This work deals with the legal challenges related to the application of FinTech technology in the provision of financial services, as well as the interplay with the licensing principle as applicable to traditional financial service providers.

The EBI promotes and supports, since its establishment, research activity aimed at providing high-quality studies on legal, economic, and accounting issues related to banking (and, in general, financial) prudential regulation, prudential supervision and crisis management in Europe. Inter alia, the research promoted by the EBI is geared towards producing top-level publications, part of which are included in its EBI E-book Series, which seeks to address cutting edge banking regulation topics.

In this respect, the EBI has fully supported the initiative of the Faculty of Law of the Lisbon University Research Centre for Private Law to hold an international conference aimed at discussing the above-mentioned issues. Academics linked to the EBI actively contributed to several Panels of that conference, the output of which is now made available to a wider public through its publication as an EBI e-book.

I wish to extend a special word of thanks to all the contributors to this publication, whose work and research have made it possible.

Frankfurt, 16 December 2022

Professor Christos V. Gortsos

President of the Academic Board
of the European Banking Institute

Foreword

by the Editors

Banks, investment undertakings and insurance companies are licensed entities and thus subject to prudential obligations that include a plethora of requirements, from minimum capital and liquidity to constraints on large exposures, specific rules on governance arrangements and compensation schemes. Moreover, these entities are also subject to regulations concerning consumer protection, anti-money laundering, rules on combating terrorism financing and the conduct of business which apply to the different services they offer, including deposit-taking, credit underwriting, payment services and wealth management.

Prudential regulation aims to address the impact of the failure of financial institutions on the stability of the system. To the extent that the risks of such an impact stem from the vulnerability of those institutions' balance sheets, prudential regulation follows an entity-based approach. This involves specific requirements for entities – such as banks – which perform a combination of activities that entail risk transformation: taking government-protected liabilities redeemable at short notice and at par value (deposits), and investing those funds in risky, longer-term, and less liquid assets (e.g., credit).

These traditional market players were challenged in recent times by FinTechs, defined by the Financial Stability Board as "technologically enabled financial innovation that could result in new business models, applications, processes or products with an associated material effect on financial markets and institutions and the provision of financial services".

These developments have generated profound changes in the market structure, as non-licensed FinTech players became very active in offering services that in the past were predominantly offered by heavily regulated entities, causing the so-called unbundling of banks effect, and fostering competition in the financial services market.

The entry of new players in the business of supplying finance-like products and the increasing reliance on electronic channels for their distribution, typically without the same systemic risk underlying the traditional licensing principle, has, according to some, challenged the belief that strict controls over entry into finance business are necessary.

BACK TO CONTENTS

The matter of licensing crypto-assets services providers is currently one of the most important issues surrounding the market in crypto-assets.

After the total market capitalisation of crypto-assets exceeded historical highs in the end of 2021, the Terra-Luna turmoil in the beginning of 2022 and the so-called crypto-winter made the case for regulators and regulation. Furthermore, the recent disclosure, through a tweet of Binance's CEO, of a letter of intent for the FTX bail-out, and the dramatic depression in the market caused by it, makes very clear case for the evidence that has been asserted since the Terra-Luna case. This evidence is that the market in crypto-assets has weaknesses, which have traditionally affected other verticals of the financial sector, and that industry players are unable to prevent or mitigate them. The case revealed the problems of conflicts of interest and market abuse that are traditionally addressed by regulation in other areas of the financial industry.

At this moment, it seems that only regulation can save the crypto-assets industry. The protection of the market and investors demand for requirements and prudential supervision in terms of own funds and assessment qualifying holdings, in the same manner these are current applicable for banks, investment companies and insurance companies. Transparency and investor protection is critical. Strict requirements are needed to exclude bad actors and opportunists.

With this background, the European Union is finalising the "market of crypto-assets regulation", the so-called MiCA Regulation, (having being reach an accord between the Council and the European Parliament for the final text last October), which among other aspects will regulate the offerings and marketing to the public of crypto-assets and the obligation to draw up a crypto-asset white paper in relation to it; the procedure for authorisation of stablecoins, providing for several aspects of the activity of those issuers; authorisation and operating conditions of crypto-asset service providers, including in relation to cross-border activity and several prudential requirements which will be applicable all crypto-asset service providers; and, finally, prevention of market abuse. It seems a step in the right direction, and we can only expect that MiCA can bring discipline to the market and appropriate protection to the investors, specially retail consumers.

The fundamentals behind the licensing principle, as well as its relevance in the context of FinTech driven innovation in the financial sector, were discussed at the Conference on 'Fintech Regulation and the Licensing Principle', held at the Faculty of Law of the University of Lisbon on June 30th, 2022.

This Conference was sponsored by CIDP (Research Centre for Private Law of the Faculty of Law of the University of Lisbon), as a component of its research line on 'Private Law in the Digital Era'.

The purpose of this research line is to assess, from a legal perspective, how the emergence of the so-called Digital Era challenges existing Private Law structures and calls for a reassessment of established principles in this area of the law.

The Conference was held in partnership with the European Banking Institute (EBI), a leading international centre for banking studies. EBI collects contributions from preeminent European

academic institutions, with the purpose of providing high-quality legal, economic, and accounting studies on issues of banking regulation, supervision, and resolution.

In this volume, the reader will find a thorough discussion of the licensing principle in banking law, now a frequently challenged principle both by the practice of financial intermediation activities by non-authorised entities and on theoretical grounds; a discussion on Fintechs and the desirable level playing field; and an analysis of the applicability of the licensing principle to the activities of investment-based crowdfunding, which includes as debate on whether investment-based crowdfunding platforms conduct activities subject to the licensing principle, as well of the applicability of the licensing principle in the area of payment services.

This publication also contains a discussion of the legal status of crypto-assets in enforcement and insolvency proceedings, which seeks to address the peculiarities of crypto custodians and the problems raised by the recognition of foreign judgments and the establishment of international jurisdiction over them. Linking both crypto-assets and the overarching theme of the licensing principle, a discussion is included in this volume on the licensing rules in the proposal for a Regulation on Markets in Crypto-Assets (MiCA).

The present publication also touches upon the challenges related to imposing requirements on offerors of crypto-assets that do not qualify as financial instruments.

A paper on the cutting-edge topic of smart contracts from a legal perspective is also included in this work, which discusses the way in which these contracts challenge traditional legal thinking and whether existing rules of Contract Law are fit to regulate the use of smart contracts.

Lastly, the book contains a case study on whether blockchain is the key to empower local energy communities, which provides an empirical perspective of the use of blockchain technologies in this market, as well as the legal complexities surrounding it.

This publication purports to shed light on the many legal challenges that have emerged with the developments brought about by FinTech and its connection with the licensing principle. The editors hope that this goal has to some extent been attained with the papers that are now made available to the public.

Lisbon, December 2022

Professor Dário Moura Vicente
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Catarina Granadeiro, LLM

The Licensing Principle in Banking Law

by Francisco Mendes Correia[1]

Abstract

The licensing principle in banking law is recurringly challenged, both in practice and on theoretical grounds. The justification for the principle lies in the special features of core banking activities, especially deposit taking, liquidity provision and the risks stemming from maturity transformation. The risks emerging from these activities can also be triggered by payment institutions and entities issuing stablecoins with redemption claims at par, which warrants an analysis of the legal framework applicable to these activities, to determine whether the principle "same activities, same risks, same rules" is complied with.

Keywords: Licencing principle; Payment Institutions; Safeguarding Requirements; Deposit Guarantee Schemes; Cryptocurrencies; Stablecoins; Regulation on Markets in Crypto-Assets; E-money tokens; Asset-referenced Tokens

Introduction

The licensing principle in financial law can be described as the principle according to which persons or undertakings purporting to carry out financial activities must be authorised in advance by competent authorities, to ensure that special rules governing such activities apply (regulation) and are complied with at inception and on a permanent basis (supervision).

However, the licensing principle is frequently challenged, both by the exercise in practice of financial intermediation activities by non-authorised entities and on theoretical grounds.

An analysis of the challenges made to the principle serves to confirm its underlying rationale, rather than to call it into question. Financial institutions carry out special activities, above all financial intermediation, which can be beneficial for the public, but entail specific and significant risks. The spe-

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cial features and risks involved in the activity of financial institutions, and banks in particular, justify the application of a special regulatory and supervisory framework. And when similar functions are being performed, they should attract the same level of regulation and supervision (functional approach).

Banks currently provide a range of financial services, from core deposits, payment and borrowing services, to investment services or international trade finance, among others. The scope of this article will be limited to testing the licencing principle in two detailed areas related to deposits and payments - as core banking activities - specifically concerning the regulation of payment institutions and the proposed regulation of entities issuing stablecoins with redemption claims.

1. Licensing as a regulatory and supervisory tool

As mentioned above, and when applied to financial law, the licensing principle means that persons or undertakings purporting to carry out financial activities must be authorised in advance by competent authorities. Emphasis should be placed on the instrumental dimension of this principle: there are other instances where a license is required to engage in an economic activity, but in financial law, the requirement is intended to assess substantial entry conditions and ensure continuing supervision of compliance with extensive rules governing financial services.

Article 8/1 of the Capital Requirements Directive ("CRD IV")[2] instructs Member States to "require credit institutions to obtain authorisation before commencing their activities". This instruction is complemented by the prohibition set out in Article 9/1 CRD IV: persons or undertakings that are not credit institutions are prohibited from taking deposits or other repayable funds from the public.

As a condition for obtaining authorisation (i.e., to be "licensed"), credit institutions must, among other things[3], comply with requirements regarding initial capital[4], the suitability of qualifying shareholders[5], the suitability of members of the management body and key function holders[6], and must submit a programme of operations, including the envisaged structural organisation and internal control systems[7].

2 Directive 2013/36/EU of the European Parliament and the Council of 26 June 2013 on access to the activity of credit institutions and the prudential supervision of credit institutions and investment firms, amending Directive 2002/87/EC and repealing Directives 2006/48/EC and 2006/49/EC ("CRD IV") [2013] OJ L176/338.

3 See EBA, 'Guidelines on a common assessment methodology for granting authorisation as a credit institution under Article 8(5) of Directive 2013/36/EU' (EBA/GL/2021/12) ("EBA Guidelines on Authorisation").

4 CRD IV, Article 12.

5 CRD IV, Article 22 et seq..

6 CRD IV, Article 91 and EBA, 'Joint ESMA and EBA Guidelines on the assessment of the suitability of members of the management body and key function holders under Directive 2013/36/EU and Directive 2014/65/EU' (EBA/GL/2017/12) ("EBA Guidelines on Suitability").

7 CRD IV, Article 10 and Guidelines on Authorisation, 25 et seq.

Credit institutions must also comply with substantial requirements regarding their ongoing activities, namely on own funds[8], internal governance[9], remuneration[10], liquidity risks[11] and large exposures[12], and are subject to a special regime governing crisis management, that includes particularly intrusive measures[13]. When dealing with clients, credit institutions must also comply with information duties and other duties regarding the marketing, sale, and distribution of financial products.

In brief, discussions on the licencing principle in banking law are not limited to the requirement of obtaining a mere formal authorisation to engage in an economic activity but refer to the compulsory compliance with an extensive and substantial set of rules as a pre-condition for initiating banking activities and as a continuing condition for maintaining such authorisation.

2. Challenges to the licensing principle

As mentioned above, the licensing principle is frequently challenged in practice, either by non-licensed entities performing some of the activities typically carried out by banks or through disintermediation, when direct relations are established between lenders/savers and borrowers/spenders.

Identifying a sufficient parallel to justify the same regulation and supervision is not an easy task, because different legal and commercial frameworks can produce similar economic effects. By way of example, there is an abundance of literature analysing whether the similarities between (the economic effects and especially the risks created by the) repo and money markets[14], on the one hand, and conventional bank lending (i.e. lending with funds obtained mainly through deposits), on the other, are sufficient to warrant similar levels of regulation and supervision[15].

8 Regulation (EU) 575/2013 of the European Parliament and of the Council of 25 June 2013 on prudential requirements for credit institutions and investment firms and amending Regulation (EU) 648/2012 ("CRR") [2013] OJ L176/1.

9 CRD IV, Article 88 et seq. and EBA, 'Guidelines on internal governance under Directive 2013/36/EU' (EBA/GL/2021/05).

10 CRD IV, Article 92.

11 CRD IV, Article 86.

12 CRR, Article 387 et seq..

13 Directive 2014/59/EU of the European Parliament and of the Council of 15 May 2014 establishing a framework for the recovery and resolution of credit institutions and investment firms and amending Council Directive 82/891/EEC, and Directives 2001/24/EC, 2002/47/EC, 2004/25/EC, 2005/56/EC, 2007/36/EC, 2011/35/EU, 2012/30/EU and 2013/36/EU, and Regulations (EU) 1093/2010 and (EU) 648/2012, of the European Parliament and of the Council ("BRRD") [2014] OJ L173.

14 And other comparable markets and activities – e.g. securitisation, structured investment vehicles, hedge funds, etc. – engaged in financial intermediation but outside the traditional system of depositary institutions.

15 Iris Chiu and Joanna Wilson, *Banking Law And Regulation* (Oxford University Press 2019) 7; Stephen Cecchetti and Kermit Schoenholtz, *Money, Banking and Financial Markets* (McGraw-Hill 2017) 366-367; Ross Cranston, Emilios Avgouleas, Kristin van Zwieten, Christopher Hare and Theodor van Sante, *Principles of Banking Law* (Oxford University Press, 2017) 17-19.

As regards disintermediation, the liberalisation of financial markets that has taken place during the last decades has led to the development of global capital markets, which has allowed access by non-bank investors as providers of liquidity (in some cases, to the benefit of the banks themselves, which found a new market for their senior and subordinated debt instruments)[16]. The exponential growth of collateralised and structured financial instruments has also allowed banks to move to non-bank investors assets traditionally funded on bank balance sheets[17]. The development of information technology has also allowed disintermediation by means of peer-to-peer lending, through crowdfunding platforms, which can be directly accessed by non-bank investors. All these developments raise the question of whether non-bank providers of liquidity can assess and manage the risks that have been moved into their realm[18].

In theoretical terms, the main arguments for challenging the licensing principle in banking law appear to arise from several, interconnected ideas:

- The burden stemming from supervision and compliance with regulation would hinder innovation: new entities face a barrier entering the market and authorised financial entities must devote unnecessary resources to compliance.
- The possibility of real-time, cost-efficient, and continuous online interaction would allow consumers to choose between competing offers of financial services: with the unlimited access to information granted by the internet, the choice of a provider of financial services should be a market choice and not a top-down imposition.
- In certain areas – payments, lending, etc. – peer-to-peer solutions should be favoured: they eliminate a level of intermediation, with gains in efficiency and participation (on a democratic level).

In a nutshell, and as summarised by Tommaso Padoa-Schioppa, there are two broad types of liberal attitudes developing on a theoretical level: the “no regulation” approach, suggesting that banking does not have any special features distinguishing them and warranting special regulation and supervision, when compared to other commercial enterprises; and the “let things happen” attitude, focusing on the risks of regulatory and supervisory barriers to innovation[19].

In the specific realm of cryptocurrencies, the licensing principle is sometimes criticised on an additional level: it should not be applied, because it presupposes an identifiable entity acting as financial intermediary, and in the case of DLT-based businesses, middleman should be avoided, to prevent rent extraction and allow end-to-end users to capture producers’ and consumers’ surplus-

16 Kern Alexander, *Principles of Banking Regulation* (Cambridge University Press, 2019) 24.

17 Alexander 24.

18 ibid 27.

19 Tommaso Padoa-Schioppa, ‘Licensing banks: still necessary?’ (1999) https://www.ecb.europa.eu/press/key/date/1999/html/sp990924_1.en.html.

es. It can be argued, however, that the presence (and remuneration) of intermediaries in payment activities is justified on grounds of the public good deriving from a reliable payment system and that only intermediaries can efficiently perform certain fundamental functions, such as governing the infrastructure, and guaranteeing the certainty and integrity of payments, and consumer protection, by submitting to legal and industry standards[20].

3. The case for the licensing principle in banking

Any given levels of supervision and regulation require justification and pose efficiency issues. In banking law, this debate can only be carried out if the risks of financial intermediation are considered.

Although banks carry on multiple activities, the core activity – i.e. the activity that is characteristic of banks – is to collect deposits (or other repayable funds) from the public and to invest them in their own name and on their own account, namely, by making loans to borrowers. In doing that, banks perform maturity transformation, and are exposed to a qualified liquidity risk, either because of endogenous factors (because they are not able to attract sufficient funding, namely because of the low quality of their assets or management) or because of exogenous factors (because there is insufficient demand in the market for the assets they want to convert into liquidity).

Banks are also exposed to credit risk. It can be argued that (almost) all economic ventures are exposed to credit risk, but in the case of banks the exposure to credit risk is so significant in quantitative terms, that it can be seen as qualitatively different. By way of demonstration, loans and leases represented 50.4% of the total assets of US commercial banks in August 2022 and if "Other Securities" (i.e. securities not issued by the Treasury or public agencies) are added (in that they also bear credit risk), the proportion of total assets rises to 55.4%[21].

As well as other risks (currency, operational, reputational, environmental), the activity of banks also creates a mis-selling risk, i.e. the risk of misrepresentation of the features (in particular the attached risks) of financial products.

These three risks are specific to financial intermediation activities and cannot be adequately monitored and mitigated through mere internal and voluntary controls[22]. Rules must be set, and applied to an identifiable entity, upon which obligations concerning capital adequacy, liquidity, sound and prudent management, organisational structures, resolvability, conduct of business, market behaviour, consumer protection and other matters will be placed.

20 Iris Chiu, *Regulating the Crypto Economy* (Hart 2021) 194-195.

21 Federal Reserve Statistical Release, 'H.8 Assets and Liabilities of Commercial Banks in the United States', 30 September 2022.

22 Padoa-Schioppa: "Self-regulation, however, does not supply sufficient protection against systemic disturbances, and its deepening, welcome as it is, cannot allow supervisors to relinquish their responsibilities. Ultimately, *public* regulation and supervision are made necessary by a market failure that simple, voluntary co-ordination among market participants is unlikely to amend".

We should also note the paradoxical nature of certain aspects of public debate on these matters: one the one hand, in the aftermath of the last financial crisis, demands were made for stricter rules governing the activity of conventional banks, and for raising the standards applicable to their activities, because of the risks they pose to the financial system; on the other hand, their applicability to new forms of financial intermediation, posing the same or comparable risks, is thrown into question because – at least in part - they are based on the intensive use of technology.

4. The licensing principle in liquidity provision and payments

4.1 Introduction

I will now focus on two areas where sufficient similarity regarding the economic effects of banking activities can be identified: payment institutions and issuers of stablecoins with redemption claims at par. These entities set out to provide liquidity to the public, in comparable ways as banks. The assets they issue (i.e. payment account balances and stablecoins) have an underlying promise of being accepted for payment purposes and of being redeemable by the issuer in other liquid funds at sight.

If these entities invested the funds received in medium and long-term assets, a maturity transformation issue would arise, and the risks would have to be dealt with through application of the legal and supervisory framework for banks. On the other hand, these entities do not enjoy the central bank liquidity support available to banks[23], meaning they lack an important safeguard against liquidity risk.

Therefore, taking a functional/risk approach to the licencing principle, it must be ensured that they invest in secure and highly liquid assets, thus avoiding maturity transformation. On the other hand, to mitigate liquidity risk, they must maintain sufficient reserves and comply with other mechanisms to mitigate proneness to runs. This warrants the intervention of regulation and supervision, addressed proportionately at the specific risks of those activities.

4.2 PSD 2 and Payment Institutions

In 2007, the 1st Payment Services Directive[24] established a new category of payment service providers ("payment institutions")-, for entities engaged in the execution of payment transactions but which do not take deposits from the public or issue electronic money. Payment institutions were to be prohibited from accepting deposits from users and would only be allowed to use funds

23 Nor do most of the entities involved in the so-called "shadow banking sector": Cranston, Avgouleas, van Zwieten, Hare and van Sante 18. Alexander 24.

24 Directive 2007/64/EC of the European Parliament and of the Council of 13 November 2007 on payment services in the internal market amending Directives 97/7/EC, 2002/65/EC, 2005/60/EC and 2006/48/EC and repealing Directive 97/5/EC ("PSD 1") [2007] OJ L319.

received from users for the execution of payment services. If those conditions were met, the risks generated by their activity would be "narrower and easier to monitor and control than those that arise across the broader spectrum of credit institutions"[25] and less strict rules regarding initial capital and own funds would be sufficient.

The 2nd Payment Services Directive[26] repealed PSD 1 but did not introduce significant changes to the prudential rules established by the previous legal framework[27]. Payment institutions must obtain prior authorisation[28] and, among other things, qualifying shareholders and members of the management body are subject to supervisory scrutiny[29]. Payment institutions are subject to lighter rules regarding initial capital[30] and own funds[31], the prudential focus of PSD 2 being instead the safeguarding requirements applicable to users' funds, in keeping with the prohibition on taking deposits of other repayable funds[32] and on using users' funds for purposes other than to execute payment transactions[33].

Payment institutions must either segregate or obtain insurance coverage (or other comparable guarantee) to safeguard funds received from users or through another payment service provider for the execution of payment transactions. The segregation method requires payment institutions either to deposit funds in a separate insulated account with a credit institution or to invest them in "secure, liquid low-risk assets", by the end of the business day following reception[34].

The fact that the funds are insulated in the interest of the payment service users against the claims of other creditors of the payment institution, in the event of the latter's insolvency, is of great important, because a payment institution will comingle clients' funds in one or more accounts opened with other credit institutions for safeguarding purposes. It is up to Member States

25 PSD 1, Recital 11.

26 Directive (EU) 2015/2366 of the European Parliament and of the Council of 25 November on payment services in the internal market, amending Directives 2002/65/EC, 2009/110/EC and 2013/36/EU and Regulation (EU) Nº 1093/2010, and repealing Directive 2007/64/EC ("PSD 2") [2015] OJ L337/35.

27 PSD 2, Recital 34: "as in [PSD 1], the conditions include prudential requirements proportionate to the operational and financial risks faced by such bodies in the course of their business". In Recital 34 an express connection is drawn between the limited risk of their activities – resulting from the prohibition of using clients' funds for anything other than payment transactions – and the lighter prudential rules. Also, John Casanova and Max Savoie, *Payment Services – Law and Practice* (Edward Elgar, 2022) 52: "The minimum capital requirement for PIs providing initiation services reflects the understanding that such service providers should be considered a medium risk as regards the initial capital".

28 PSD 2, Article 11.

29 PSD 2, Article 6 and Article 5, para. 1(n)

30 PSD 2, Article 7. Payment institutions providing the bulk of payment services (listed in points (1) to (5) of Annex I of the Directive) must have an initial capital of € 125,000. Payment institutions exclusively engaged in money remittance or payment initiation services may have an initial capital of € 20,000 and € 50,000, respectively.

31 PSD 2, Articles 8 and 9.

32 PSD 2, Article 18/5.

33 PSD 2, Article 10 and Article 18, para. 4(c).

34 PSD 2, Article 10, para. 1(a).

to create special segregation rules, so that, in the event of insolvency, the funds deposited in the payment institution clients' account cannot be accessed by other creditors[35].

However, it must be noted that clients' funds are not protected in the event of the insolvency of the credit institution managing the payment institution's clients account(s). Payment institutions qualify as "financial institutions" under the CRR[36] and are therefore excluded from the scope of eligible deposits under the Directive on Deposit Guarantee Schemes[37]/[38]. So if a payment institution uses the segregation method and deposits its clients' funds with a credit institution that becomes insolvent, the funds will be at risk.

Deposit guarantee schemes are not the only mechanism for mitigating liquidity risk and avoiding bank (and non-bank) runs. However, they play an important role in protecting depositors against losses and, more importantly, in avoiding systemic risk, by reducing incentives for depositors to withdraw their funds abruptly. It can be argued that payment institutions are not likely to attain systemic importance and, even if they did, special consideration would be granted to accounts containing the funds of payment institutions' clients, in the scenario of resolution of the credit institution managing those accounts. However, such "special" treatment is discretionary for resolution authorities. On the other hand, when a bank is in crisis, resolution tools are only used when some form of public interest justifies them, and cannot be safeguarded by winding up the institution in normal insolvency proceedings[39]. It is therefore possible that the insolvency of a credit institution managing accounts holding the funds of a payment institution's clients[40] will lead to an erosion of public confidence in the security of users' funds, increasing the likelihood of future runs (on payment institutions).

4.3 Stablecoins and MiCAR

The universe of cryptocurrencies - i.e. crypto-assets purporting, at least partially, to perform monetary functions - is vast and highly varied. However, most of these cryptocurrencies have so far been issued privately, in a decentralised fashion, with no discernible issuer (the majority of first generation self-anchored cryptocurrencies), or by non-licensed and unsupervised entities (the majority of stablecoins).

35 In Portugal, for example, such segregation is established by Article 52, para. 2 of Decree-Law 91/2018, 12 November 2018.

36 CRR, Article 4, para. 26.

37 Directive 2014/49/EU of the European Parliament and of the Council of 16 April 2014 on deposit guarantee schemes ("DGS Directive") [2014] OJ L173/149, Article 5, para. 1(d).

38 Reaching the same conclusion, on different grounds, Gabriella Gimigliano and Marta B. Beros, *The Payment Services Directive II – A Commentary* (Edward Elgar, 2021) 98.

39 BRRD, Article 32, para. 5.

40 Using the segregation method and resorting to segregated accounts.

The most successful cryptocurrencies have become interchangeable with fiat currencies and between themselves, mainly through the emergence of specialised exchanges[41]. This commoditisation of cryptocurrencies can have adverse effects on their monetary functions, mainly because of the emerging volatility[42]. The volatility of cryptocurrencies can influence users' motivations: while not completely excluding payment functions, these currencies can also be acquired for investment purposes.

Stablecoins are cryptocurrencies in that they purport to perform monetary functions but unlike first generation self-anchored currencies, they employ stabilisation mechanisms to reduce volatility. In broad terms, such arrangements can be placed in one of the following categories: (a) mechanisms pegged to or using collateral (usually one or a combination of fiat currencies or other stable assets, such as gold); (b) mechanisms using automatic (algorithmic) adjustments to supply and demand. Some stablecoins also promise redemption, claimable at any moment, at par value.

Stablecoins with redemption rights that attain a certain level of market dissemination can pose risks similar to those presented by payment institutions offering payment account balances for payment purposes (or e-money institutions issuing e-money): users can acquire these kinds of assets as means of payment, trusting in the stability of their value and in their liquidity. From a strict payment and liquidity provision perspective, one of the most relevant regulatory and supervisory issues is therefore the robustness of the stabilisation mechanism, which must be addressed considering the proposed Regulation on Markets in Crypto-Assets.

The Proposal for a Regulation on Markets in Crypto-Assets ("MiCAR") was made public by the European Commission on 24 September 2022. After the adoption of the Council's negotiation position (November 2021) and trilogues between the Commission, Council and Parliament (from 31 March 2022 to 30 June 2022, when a provisional agreement was reached)[43], the European Council approved a final version of the text, on October 5, 2022, to be submitted for the next legislative phases[44].

The main rationale underlying MiCAR is twofold: (i) filling the existing regulatory gap will prevent risks relating to market integrity, financial crime, consumer protection and regulatory arbitrage; (ii) the legal certainty emerging from a clear set of rules may increase users' confidence in crypto-assets, so as not to hinder the development of a market and of innovative digital services, alternative payment instruments and new funding sources for EU companies[45].

Although the EU legislator is of the view that the crypto-asset market "is still modest in size and does not yet pose a threat to financial stability", it has acknowledged that the growing development of stabilisation mechanisms can lead to increased adoption of stablecoins by retail hold-

41 Chiu (2021) 196-197.

42 Chiu (2021) 197.

43 Https://www.consilium.europa.eu/en/press/press-releases/2022/06/30/digital-finance-agreement-reached-on-european-crypto-assets-regulation-mica/.

44 https://data.consilium.europa.eu/doc/document/ST-13198-2022-INIT/en/pdf. In this article, I will refer to the latest version of the MiCAR Proposal ("MiCAR Proposal"), which was made public on 5 October 2022.

45 MiCAR Proposal, Recitals 3 and 4.

ers, which "could raise additional challenges to financial stability, smooth operation of payment systems, monetary policy transmission or monetary sovereignty"[46].

In this context, the European legislator expressly adopts the regulatory principle of "same activities, same risks, same rules" as a guideline to the Regulation[47].

MiCAR will govern the issuance, offering to the public and admission to trading of crypto-assets and the provision of services related to crypto-assets in the European Union[48]. Crypto-assets are defined as digital representations "of a value or a right which may be transferred and stored electronically, using distributed ledger technology or similar technology"[49].

For the purposes of MiCAR, a crypto-asset must therefore meet the following conditions: (a) a digital representation of values or rights; (b) fungibility[50]; (c) transferability; (d) electronic transfer and storage; (e) use of distributed ledger technology or similar technology. So to the extent to which these conditions are met, MiCAR will apply to (most) cryptocurrencies, but also investment tokens and utility tokens.

MiCAR does not apply to digital assets issued by Central Banks acting in their monetary authority capacity[51], nor to crypto-assets that qualify as financial instruments (as defined in MiFID 2[52]), deposits[53], insurance products or securitisation positions.

Rules governing the offering and distribution of crypto-assets are not applicable to assets that are offered for free, assets that are automatically created as a reward for the maintenance of the DLT or the validation of transactions[54], or assets that have no identifiable issuer[55]. Crypto-asset services which are provided in a fully decentralised manner without any intermediary do not fall within the scope of MiCAR[56].

46 MiCAR, Recital 4.

47 MiCAR, Recital 6.

48 MiCAR, Article 2, para. 1.

49 MiCAR, Article 3, para. 1(2).

50 MiCAR, Article 2, para. 2(a): the Regulation is not applicable to "crypto-assets that are unique and not fungible with other crypto-assets". Examples and criteria are provided in Recital 6b MiCAR: "digital art and collectibles, whose value is attributable to each crypto-asset's unique characteristics and the utility it gives to the token holder" or "product guarantees or real estate", which are unique and non-fungible, even when represented by a transferable token.

51 MiCAR, Article 2, para. 2(c) and Recital 7.

52 Directive 2014/65/EU of the European Parliament and of the Council of 15 May 2014 on markets in financial instruments and amending Directive 2002/92/EC and Directive 2011/61/EU ("MiFID 2") [2014] OJ L173, Article 2, para. 3(a) (See Article 4, para. 1), item (15). ESMA will issue guidelines with criteria for the qualification of crypto-assets as financial instruments in the 18 months following the entry into force of MiCAR.

53 MiCAR, Article 3, para. 3(c) and Recital 6.

54 MiCAR, Article 4, para. 2(a) and (b) and Recital 14b.

55 MiCAR, Recital 12a: however, crypto-asset service providers that provide services related to such assets are covered by the Regulation.

56 MiCAR, Article 12.

A grandfathering clause also exempts from certain MiCAR provisions crypto-assets other than asset-referenced and e-money tokens that were offered to the public or admitted to trading before MiCAR's entry into effect[57].

The rules governing the issuance and distribution of crypto-assets are structured in accordance with three main categories of crypto-assets: (i) e-money tokens; (ii) asset-referenced tokens and (iii) crypto-assets that do not fall into one of the preceding categories (i.e. which are neither e-money nor asset-referenced tokens).

The narrower category – that of e-money tokens – includes assets that purport to perform monetary functions, as surrogates for coins and banknotes, and to be used for making payments[58]. In technical terms, they are defined as a type of crypto-asset that "purports to maintain a stable value by referencing to the value of one official currency"[59], the main feature being that reference is made to a single fiat currency.

The definition of "asset-referenced crypto-assets" includes all other crypto-assets that employ stabilisation mechanisms (i.e. other than e-money tokens), thereby including mechanisms of a broader nature, that make reference to any other value or right, or combination thereof, including one or several currencies[60].

The third category includes all crypto-assets that do not fall into one of the first two categories, in that they represent a value or a right, by digital means, but they do not purport to maintain a stable value through an external reference (e.g. utility tokens).

4.3.1 Rules governing E-money tokens

As mentioned, the EU legislator expressly acknowledges the monetary functions that some tokens aspire to by using stabilisation mechanisms, especially those pegged to fiat currencies that are legal tender. E-money tokens can be used – as electronic money – as a surrogate for coins and banknotes, for payment purposes, and therefore must be seen as an instrument of liquidity provision. Indeed, because their main goal is stabilisation at par with fiat currencies, the main purpose of acquisition will also be, in most cases, access to liquid assets (as their value is not expected to increase substantially over time)[61].

57 MiCAR, Article 123.

58 MiCAR, Recital 9.

59 MiCAR, Article 3, para. 1(4) MiCAR. *Official currencies* for the purpose of the Regulation are currencies issued by a central bank or other monetary authority. See Article 3. para. 1(3a).

60 MiCAR, Recitals 9 and 25.

61 Firate Cengiz 'What the EU's new MiCA regulation could mean for cryptocurrencies' https://blogs.lse.ac.uk/europpblog/2021/07/05/what-the-eus-new-mica-regulation-could-mean-for-cryptocurrencies/ (2021), listing two main investment purposes for stablecoin acquisitions: (a) short term conversion of profits into stablecoins, to invest in other cryptocurrencies when opportunities arise; (b) investment in cryptocurrency exchanges or decentralised finance applications for the return in interest and yield respectively.

In this context, one of the underlying guidelines that MiCAR appears to have followed regarding e-money tokens is one of convergence with the legal framework already governing e-money[62]. In a nutshell:

- E-money tokens shall be deemed to be electronic money for EMD purposes[63];
- E-money tokens can only be issued and distributed by credit institutions or E-money institutions[64];
- The issue of e-money tokens must be preceded by the publication of a white paper, notified to the competent authority[65];
- An e-money token referencing an EU currency is deemed to be offered to the public, in the EU[66];
- E-money tokens must be issued at par value, on the receipt of funds[67] and no interest can be granted to holders by issuers or crypto-asset services providers[68]; the rationale for the prohibition of interest seems to be analogous to that applicable in e-money issuance: e-money tokens are meant to be used as a surrogate for other monetary objects and not as a means of savings or investment[69];
- E-money tokens must represent a redemption claim on its issuer, to be exercised for free[70], at any moment and at par value, and to be fulfilled in funds other than e-money[71];
- White papers for e-money tokens must include, among other relevant information, specific information on the risks relating to the offer, namely a clear risk warning regarding the non-applicability of investor compensation schemes and deposit guarantee schemes[72];

62 Directive 2009/110/EC

63 MiCAR, Article 43, para. 1a.

64 MiCAR, Article 43, para. 1(a).

65 MiCAR, Article 43, para. 1(c) and Article 46.

66 MiCAR, Article 43, para. 1a.

67 MiCAR, Article 44, para. 3 and Recitals 10 and 45.

68 MiCAR, Article 45 and Recital 46. Cengiz argues that the prohibition of interest is an undue intrusion into financial autonomy because the adoption of stablecoins is far from reaching the mass scale that would jeopardise monetary stability. In this view, the prohibition protects the interest of the European banking sector, by disincentivising investment in stablecoins.

69 EMD, Recital 13. Criticising the option in MiCAR, Cengiz is of the view that the prohibition of interest "will deprive European citizens of an attractive investment option, particularly considering that financial stimuli instruments adopted to limit the economic impact of lockdowns are expected to result in historically high inflation rates".

70 MiCAR, Article 44, para. 6 (Recital 45: the EMD rules on redemption fees are not applicable).

71 MiCAR, Article 44, paras. 2 and 4. As grounds for this option, it is indicated that the absence of such a redemption right would undermine users' confidence (MiCAR, Recital 10).

72 MiCAR, Article 46, para. 2(f) (h) and (ha) and Recital 47.

- Funds received by issuers of e-money tokens must be invested in secure, low-risk assets denominated in the same currency as that referenced by the token, to avoid cross-currency risks, and must be deposited in a separate account in a credit institution[73];
- Issuers of e-money tokens must draw up a recovery plan, listing the measures available to restore compliance with reserve of assets requirements[74];
- Issuers of e-money tokens must also draw up a plan to support an orderly redemption of issued tokens, to be implemented in the event of insolvency, resolution, or other instances where the competent authority declares that the issuer is unable or likely to become unable to comply with its redemption obligations[75].
- E-money tokens will be classified by EBA as significant, and subject to more stringent requirements, when at least three of the criteria set out in Article 39/1 MiCAR are met. Those stricter requirements include supervision by EBA, as well as additional reserves and liquidity management obligations[76].

5. Conclusions

As defended by Tommaso Padoa-Schioppa, the licencing principle should be reinstated and applied to activities creating the same risks as core banking activities: its scope should be determined proportionately, by taking into consideration the public interest of risk mitigation at stake, while remaining friendly to technological and financial innovation[77].

In payment institutions, the prudential focus of PSD 2 on the safeguarding requirements applicable to users' funds should be applauded, but certain solutions – such as the ineligibility of the accounts of payment institution clients for deposit insurance schemes - should be reconsidered, to increase users' confidence and prevent runs on payment institutions.

MiCAR will undeniably create new entry barriers for projects and investors entering the crypto-market, and the change is substantial if compared to the current scenario, where non-professional investors face very few (to no) barriers to investing in cryptocurrencies. It can also be said that non-professional investors will face the most profound changes, because they will not benefit from the exemptions benefiting qualified investors[78].

73 MiCAR, Article 49 and Recital 48 and Gortsos 58. Secure, low-risk assets will be defined pursuant to EMD, Article 7, para. 2.

74 MiCAR, Article 41a *ex vi* Article 49a and Recital 48a.

75 MiCAR, Article 42 *ex vi* Article 49a.

76 MiCAR, Article 39, para. 5, and Article 41.

77 Padoa-Schiappa.

78 Cengiz: "individuals with a significant amount of wealth will be able to acquire cryptocurrencies earlier than ordinary citizens and without being subject to the same regulatory hurdles".

The question, therefore, is whether these barriers and this difference in treatment are justified. Crypto-assets purporting to perform monetary functions, based on stabilisation mechanisms that refer to a specific fiat currency are inherently marketed with an underlying liquidity guarantee. Consequently, their regulatory and supervisory framework should not be moulded from the rules governing investment assets but rather from the legal regime applicable to deposit taking, e-money issuance and other monetary or quasi-monetary assets.

In the case of e-money tokens, MiCAR abides by the principle of "same activities, same risks, same rules". The regulatory focus has been placed on the robustness of the stabilisation mechanisms and on transparency of distribution, through the application of a set of rules on reserves, liquidity management, safeguarding of clients' funds, issuance, redemption, and marketing that were moulded from the framework already governing e-money assets and institutions. Proportionality considerations underlie certain legislative options, as in the case of the more stringent requirements applicable to issuers of significant e-money tokens.

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Fintechs: concept, level playing field and the supervisory approach

by Luís Barroso[1]

Abstract:

The emergence and growth of "fintechs" has challenged credit institutions, especially in the payments market. This evolution has sparked a debate over the regulatory level playing field, as most fintechs are payments institutions and electronic money institutions, which have traditionally been subject to a lighter regulatory regime. In this context, credit institutions have, on one hand, sought to broaden the common understanding of the concept of "fintech", as many banks also wish to be perceived as part of the fintech transformation, which might perhaps generate advantages for those credit institutions. On the other hand, credit institutions have criticised the lighter touch regulatory regime applicable to (fintech) payment and electronic money institutions, arguing that the current system places the former in a disadvantageous position in payments market competition. Examining both reactions and how they have generally been considered by the ECB as banking supervisory authority, it is argued, first, that the notion of "fintech bank" is somewhat cosmetic. Secondly, the level-playing field criticism, in its blunt form, is very difficult to sustain, as it ignores the broader and riskier activities in which credit institutions are allowed to engage. That said, it is relevant to examine the new risks posed by the activities of payment institutions and electronic money institutions, which may justify a measured rebalancing of the regulatory regime.

Keywords: Fintechs, entity-based and activity-based regulation, credit institutions, payment institutions, electronic money institutions, fintech bank, level-playing field, financial stability, operational resilience.

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1. Introduction

The emergence and growth of "fintechs" has challenged credit institutions, especially in the payments market. It has also, as a consequence, sparked a debate over the regulatory level playing field, as most fintechs are payment institutions and electronic money institutions, which have always been subject to a lighter regulatory regime when compared to credit institutions. The increasing relevance of fintech payment institutions is yet another sign of the fluidity of financial services, as different services and products may be fulfilling rather similar or comparable social and economic roles, even where distinctions remain.

This paper considers two main reactions to the above-mentioned dynamic. The first is the broadening of the concept of fintech. Whereas the term fintech has been used mostly to refer to start-ups and innovative entities which, in many cases, have sought to obtain a licence to operate as payment institutions and electronic money institutions, credit institutions have also promoted efforts to be seen as part of the fintech transformation. As a consequence, the term fintech has become more open and ambiguous.

Secondly, as fintechs have developed, especially in the payments sector, the idea that the regulatory model is characterised by an unlevel playing field also has gained force among credit institutions. These are subject to tighter regulation and supervision as a consequence of the financial stability risks posed by the combination of their activities (deposit-taking and lending). Much of modern financial services regulation is therefore entity-based, as it targets the risks posed by specific institutions, in the light of the risks which the combination of their activities presents to the financial system. Banks, and even banking supervisors, have nevertheless criticised, or at least drawn attention to, the level playing field issues which the entity-based model implies, including by voicing the famous mantra "same activity, same risks, same regulation".

However, while the new and specific risks posed by fintechs deserve, of course, to be properly assessed and managed, the fundamental reasons behind entity-based regulation of banks still seem to apply. Moreover, even if the entity-based regulatory model may generate level playing field issues, the policy goals which underlie public regulation, such as financial stability, should arguably prevail.

The paper first explores the origins and increasing openness of the term fintech. It then looks at the concept of "fintech bank", through the lens of a guide published by the ECB. It then assesses the level playing field concerns referred to above. While the evolving nature of the fintech term, as commonly used, seems somewhat cosmetic, the notion that the regulatory model is characterised by an unlevel playing field is difficult to sustain, as it seems to ignore crucial aspects about the broader and riskier activities in which credit institutions are allowed to engage. That said, it is also relevant to examine the new risks posed by the activities of payment institutions and electronic money institutions and consider, in that context, whether they justify a measured rebalancing of the regulatory regime.

2. The origins and openness of the term "fintech"

The Financial Stability Board has defined "fintech" as "technology-enabled innovation in financial services that could result in new business models, applications, processes or products with an associated material effect on the provision of financial services".[2] This broad definition highlights the variety of entities that are, or may be, called "fintechs". The notion of "material effect on the provision of financial services" is open and rather subjective. In particular, it begs the question how relevant the technology-enabled innovation has to be and what kind of impact on service provision should be expected (e.g. how the service is provided, what the service is) in order to establish that we are dealing with a fintech entity.

The emergence and significant growth of fintechs is linked to a dissatisfaction with the central role played by "traditional" investment firms and credit institutions following the global financial crisis of 2007-2008. The development of sophisticated technological tools around the same period, notably in the field of telecommunications, also shaped and increased business opportunities. The ongoing technological revolution, ranging from increasingly powerful mobile phones to artificial intelligence, is both reinforcing and profoundly challenging established economic players, such as banks. The search for alternative sources for supplying similar or comparable services and products, which may be, in certain cases, more advantageous in terms of price, efficiency or personal convenience, is impacting the financial services sector, like many others.

While, currently, the term fintech is used liberally to describe very different types of financial entities, including banks, most firms commonly designated as fintechs are either payment institutions or electronic money institutions.

In this context, the Payment Services Directive I (PSD 1)[3] and the Electronic Money Directive II (EMD 2)[4] have been important regulatory instruments in introducing new standalone players, notably payment institutions and electronic money institutions, and affording them access to a market that was until then a monopoly for credit institutions. The Payment Services Directive II (PSD 2)[5] subsequently reinforced the rights of payment institutions (and, by way of cross-reference, of electronic money institutions). Importantly, the PSD2 opened up the EU payments market to third-party payment service providers (payment institutions) offering services based on access to information from payment accounts, including bank accounts. In particular, the PSD2 covers three types of additional services: (i) payment initiation services, which help consumers make online payments

2 See: https://www.fsb.org/work-of-the-fsb/financial-innovation-and-structural-change/fintech/

3 Directive 2007/64/EC of the European Parliament and of the Council of 13 November 2007 on payment services in the internal market amending Directives 97/7/EC, 2002/65/EC, 2005/60/EC and 2006/48/EC and repealing Directive 97/5/EC [2007] OJ L 319/1.

4 Directive 2000/46/EC of the European Parliament and of the Council of 18 September 2000 on the taking up, pursuit of and prudential supervision of the business of electronic money institutions [2000] OJ L 275/39.

5 Directive (EU) 2015/2366 of the European Parliament and of the Council of 25 November 2015 on Payment services in the internal market, amending Directives 2002/65/EC, 2009/110/EC and 2013/36/EU and Regulation (EU) No 1093/2010, and repealing Directive 2007/64/EC [2015] OJ L 337/35.

and inform the merchant immediately of the payment initiation, allowing for the immediate dispatch of goods or immediate access to services purchased online; (ii) account information services, which give consumers and businesses an overview of their financial situation by consolidating information across the different payment accounts they may have with one or more payment service providers; and (iii) issuance of card-based payment instruments by third-party payment service providers that request confirmation of the availability of funds from the payment service provider servicing the account.[6] Importantly, the PSD 2 has also provided for access, without discrimination, by payment institutions to payment infrastructures. On the basis of the licensing principle, the entities providing these services are subject to authorisation and supervision, following the rules laid down in the PSD 2, as transposed into national law.

The PSD2 has also defined rules for access to payment accounts, including bank accounts, for third-party payment service providers. Member States have to "ensure that account-servicing payment service providers are not blocking or obstructing the use of payment initiation and account information services for the accounts they hold". Meanwhile, account-servicing payment service providers "cannot deny access to the accounts they hold unless the third-party payment service provider is unauthorised or if there is a suspicion of fraud". Finally, explicit consent is required from the payer for a transaction to be executed.[7]

Traditionally, most payment services were performed by credit institutions, as their authorisation, under CRD, also covers the provision of payment services. The bank account has therefore also served, until recently, as the usual (and often only) payment account for many consumers, which has meant competition only among banks and so potentially a less dynamic payments market in the EU. This situation has dramatically changed in recent years as non-credit institutions have been able to (i) offer payment accounts or issue electronic money that are not bank accounts, (ii) initiate payment services, (iii) provide account information services, and (iv) issue card-based payment instruments. The simultaneous increase in online payments, as compared to cash, including through execution by payment institutions and electronic money institutions, has also reinforced the fluidity between the bank account and other types of payment accounts or electronic money, which may be held by payment institutions and electronic money institutions.

The above mentioned evolution is unsurprising if one considers the nature of financial services. As noted by Borio, Claessens and Tarashev, a "unique feature of the financial system is its extraordinary "fluidity" which blurs the mapping between financial instruments, activities and entities." They note that fluidity "arises at the level of instruments", but it is "also a feature of financial entities and activities", as "[i]dentical or very similar activities can be performed by different entities." For example, Borio, Claessens and Tarashev observe:

6 The above-mentioned description is based on a summary of the PSD 2 provided by the European Central Bank, which is available here: https://www.ecb.europa.eu/paym/intro/mip-online/2018/html/1803_revisedpsd.en.html

7 Idem.

> "a firm may borrow from a bank, insurance company, pension fund or obtain trade credit from another firm. Conversely, entities can combine the same or similar activities very differently. Think, for instance, of the obvious differences between commercial banks, investment banks and insurance companies, just to mention a few. Overlaps abound. Indeed, the very boundaries of the financial system are blurry and ill-defined: some non-financial firms supply services that are financial in all but name."[8]

Such fluidity "makes the very identification of an activity context-dependent and blurs the mapping between activities and an entity's balance sheet". While "[b]ank deposits are used in payments, (…) they are just one element of the overall activity, which also includes arrangements for the transfer of funds (eg the use of debit and credit cards)". Moreover, bank deposits are also a form of debt", meaning that "deposit-taking relates to two different activities – payments and borrowing".[9]

Meanwhile, the term "fintech" has also been appropriated by credit institutions, which may see (and present) themselves as fintechs even though their core activities and products are not fundamentally new. This may happen because they perform similar services in a somewhat different way or because the patterns of interaction with clients have changed, through the use of some relevant technology. The growing reliance on RegTech or artificial intelligence tools can also be connected to the concept of fintech. Overall, the term "fintech" is now used to refer to several different realities, including that of credit institutions which have incorporated technology into their activities and products in a way which is supposedly more critical to their business model.

The European Banking Federation (EBF) has, in this context, sought to promote the "right definition of FinTech", noting that this term "is sometimes understood as referring only to start-ups or tech-giants that develop innovative financial services solutions". However, it adds, "[i]nnovative financial technology based solutions and services are increasingly being developed by banks" and this is "why it is important to point out that the "FinTech" concept should be understood as finance enabled by or provided via new technologies, affecting the whole financial sector in all its aspects, in line with the definition proposed by the Financial Stability Board (FSB) in its report on Fintech published in June 2017 and the one proposed by the Basel Committee for Banking Supervision (BCBS) in its consultation document published in August 2017." Overall, the EBF argues, "[w]hereas the value chain increasingly includes alternative actors such as start-ups or tech giants, any actor can be a FinTech, regardless of the kind of legal entity it is", hence the "FinTech concept should be connected to the products and services offered to the client and is therefore activity/services based and "[b]anks are also FinTech companies."[10]

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8 Claudio Borio, Stijn Claessens and Nikola Tarashev, 'Entity-based vs activity-based regulation: a framework and applications to traditional financial firms and big techs', Occasional Paper No 19, Financial Stability Board. See pages 2 and 3.

9 Idem.

10 See: https://www.ebf.eu/regulation-supervision/eba-discussion-paper-on-fintech-ebf-response/

While the term "fintech banks" has therefore become more common (as also considered below), many credit institutions still perceive the relationship with "fintechs" to be mostly a competitive and tense one.

3. The supervisory approach vis-à-vis "fintech banks"

The openness of the concept of fintech has also meant that banking supervisors have developed strategies to deal with credit institutions which, for whatever reason, present themselves as fintech banks. One way to address this issue could be simply to assert that fintech credit institutions are, as the name already clarifies, credit institutions themselves, and, therefore, they should simply follow the same rules and guidance applicable to credit institutions in general. The opposite strategy would be to argue that, on the basis of the principle of proportionality, fintech credit institutions could be subject to a lighter regulatory regime, especially if they are small entities less reliant on deposit-taking or credit granting. It is not clear, however, were such line of action to be followed, why it should not also apply to small or medium sized banks whose activities are either less complex or less risky than other, larger and systemic, credit institutions.

In the case of the EU, the first strategy has been followed, even if some banking supervisors have, at the same time, outlined issues or provided guidance for fintech credit institutions. It is the content of these issues and guidance that deserves to be addressed, so as to understand whether it represents a new or emerging regulatory approach or if it is more cosmetic than helpful.

A notable example in this regard is the European Central Bank (ECB), which has, in particular, approved a Guide for the licencing of fintech banks.[11] In this document, the ECB begins by clarifying that it follows a "technology-neutral approach to its areas of competence, including banking supervision and the oversight of payment systems, in accordance with the SSM Regulation and the Treaty on the Functioning of the European Union". It then adds that its role "is to ensure the safety and soundness of the banking sector, maintaining a high standard of prudential supervision and oversight of payment systems, schemes and instruments, irrespective of the particular business model or the application of any particular technological solution." The ECB also states that it "aims to maintain a level playing field for banking services, and follows the guiding principle of "same activity, same risks, same supervision and regulation"". On the other hand, in its role as "catalyst in the field of payments, the ECB fosters an innovative market for euro payments in cooperation with the relevant stakeholders and pursues the objectives of strategic autonomy and resilience."[12]

11 ECB, 'Guide to assessments of fintech credit institution licence applications' (March 2018) https://www.bankingsupervision.europa.eu/ecb/pub/pdf/ssm.201803_guide_assessment_fintech_credit_inst_licensing.en.pdf

12 Idem.

While echoing the mantra "same activity, same risks, same regulation" (considered further below), the ECB still observes that it does not have a negative position vis-à-vis fintechs and that, as "catalyst" (the term is rather ambiguous and legally uncertain) in the field of payments, it promotes a euro payments market that is both innovative and resilient. The Guide shows, first of all, that the ECB, which currently has central responsibilities in banking supervision within the euro area, has felt it necessary, or convenient, to clarify its approach to the authorisation and supervision of "fintech banks". As noted above, the stickiness of the concept of "fintech" is clear and banking supervisors also wish to be part of the relevant "conversation" in the area of financial technology.

The reasons for approving such a Guide are not immediately clear. After all, as noted above, if "fintech banks" are banks, just like any other, it is not obvious why they should be subject to any kind of special treatment, for better or for worse. And if such special treatment does not exist, then the need for a specific guide on the matter is not self-evident, considering that the ECB has already approved guidance for the licencing of credit institutions in general.[13]

In the first pages of the Guide to the licensing of fintech banks, the ECB notes that as a "result of technological innovation in the banking sector, a growing number of entities with fintech business models are entering the financial market" and that this "is mirrored by the increasing number of credit institution licence applications submitted for authorisation to the [ECB] by such entities." "Fintech bank" licence applications, the ECB explains, concern credit institutions as defined in the Capital Requirements Regulation (CRR).[14] For its part, "fintech" is an "umbrella term encompassing a wide variety of business models". The Guide "refers to bank business models in which the production and delivery of banking products and services are based on technology-enabled innovation".[15] This explanation is, admittedly, very general. It probably fits the situation of many credit institutions in the euro area, which over recent decades have considerably adapted their internal processes in order to provide their services and offer their products in a way that is much more heavily based on technology and online tools.

The ECB, therefore, uses the term "fintech" (bank) liberally, not even requiring that the effect of the technology-enabled innovation on the "production and delivery of banking products and services" should be significant. Apparently, the mere use of "technology" to introduce some kind of "innovation" is considered sufficient for a bank to describe itself as a fintech. An alternative explanation is that the ECB has developed this Guide for only a fraction of credit institutions which, undoubtedly, may be conceived of as fintechs, for example because they have significant similari-

13 ECB, 'Guide to assessments of licence applications – Licence applications in general' (Second revised edition) (January 2019) https://www.bankingsupervision.europa.eu/ecb/pub/pdf/ssm.201901_guide_assessment_credit_inst_licensing_appl.en.pdf

14 Regulation (EU) 575/2013 of the European Parliament and of the Council of 26 June 2013 on prudential requirements for credit institutions and investment firms and amending Regulation (EU) No 648/2012 [2013] OJ L 176/1.

15 Supra 10, see p. 2.

ties, either in their creation, structure or operations, to fintech payment institutions. In some cases, fintech payment institutions have applied for a banking licence, even though the core of their activities, which is in the field of payments, has so far not changed.[16]

Secondly, the ECB quickly dismisses the notion that the existence of a Guide for fintech licence applications could be perceived as a simplification of the authorisation procedure for such institutions (e.g. in view of proportionality considerations, for smaller and particularly innovative banks), within the bounds of the existing legal regime. It is accordingly clarified that "ECB policies that apply to the licensing of banks within the Single Supervisory Mechanism (SSM), as presented in the Guide to assessments of licence applications, also apply to the licensing of fintech banks." The purpose of the Guide, the ECB says, "is to enhance transparency for potential fintech bank applicants and increase their understanding of the procedure and criteria applied by the ECB in its assessment of licence applications".[17]

In its response to the European Commission's public consultation on a new digital finance strategy for Europe/FinTech action plan, the ECB also observed that "certain aspects of the supervision of banks' use of innovative technologies and digitalisation strategies require enhanced attention".[18] The topics referred to include:

"(i) the increased use of cloud service providers, leading to concentration (both idiosyncratic and systemic) among a few providers, including big tech companies; (ii) the use of AI for a range of functions, e.g. credit scoring and robo-advice, to ensure the performance of the models and also prevent bias; (iii) the move towards an open banking model to enhance the effective and safe use of available data; (iv) the use of distributed ledger technology (DLT) for certain activities, such as trade finance, requiring a good governance of the platforms and an understanding of the technologies; and (v) regulatory technology (regtech), for the purpose of meeting regulatory requirements, reporting, supporting compliance and enhancing risk management in a credit institution."[19]

In view of the above, the Guide considers the licensing criteria for fintech banks in the light of the general criteria set out in the Credit Requirements Directive IV (CRD 4)[20], as amended, considering four main areas: governance (suitability of the members of the management body and suitability of shareholders); internal organisation (risk management, compliance and audit frameworks); programme of operations; and capital, liquidity and solvency.

16 A well-known example is Revolut. In its website it is explained that "[a]lthough we do have a EU banking license, we currently operate as an e-money institution for business customers. We intend to offer banking services to EEA customers in the near future, as well as seek banking licences in many of the other regions in which we operate." More information is available here: https://www.revolut.com/business/help/more/general/is-revolut-a-bank

17 Supra 10, 2.

18 ECB, 'ESCB/European banking supervision response to the European Commission's public consultation on a new digital finance strategy for Europe/FinTech action plan' (August 2020). See p. 12.

19 *Idem.*

20 Directive 2013/36/EU of the European Parliament and of the Council of 26 June 2013 on access to the activity of credit institutions and the prudential supervision of credit institutions and investment firms, amending Directive 2002/87/EC and repealing Directives 2006/48/EC and 2006/49/EC [2013] OJ L 176/338.

First, on governance, the ECB highlights the importance of the IT competences of members of the management body (suitability). As the CRD IV requires members of the management body to possess, at all times, sufficient knowledge, skills and experience to perform their duties, due to the "specific nature of a fintech bank and the significance of technology for its business, the ECB understands this requirement as implying that members of its management body, in both management functions (executives) and supervisory functions (non-executives), should have relevant technical knowledge and practical experience enabling them to understand the risks of the business model and to fulfil their functions". One indicator that this requirement has been met, the ECB states, "would be that a fintech bank has appointed a Chief Information Technology Officer as a member of its executive board".[21]

The considerations in the Guide on internal organisation of fintech banks highlight concerns with the reliance on technology, particularly in credit operations. According to the ECB, fintech banks "operating in developed markets [the term "developed markets" is somewhat unclear in this context] often use standard approaches to check customers' repayment capability, assessing for example: identity – to prevent fraud; ability to repay – based on income and current debt load; willingness to repay – usually based on past credit performance."[22] Since some of this information, "especially a customer's credit history (i.e. past credit performance), is usually not available during the initial phases of the business to be able to build an internal credit-scoring model", fintech banks "may tend to use outsourced credit-scoring services and/or rely on alternative sources of data and alternative credit-scoring methodologies."[23]

The ECB states that it shall "consider to what extent an applicant has a clear established process for loan approvals, as well as for amending, renewing and refinancing existing loans and for demonstrating what type of data is used in the process of granting a loan and how data quality is assured." Moreover, the "ECB (…) will also assess whether such processes are documented and periodically reviewed. This also applies to the eligibility assessment, valuation and enforceability of collateral, as well as to the classification of non-performing loans and their management."[24]

While the considerations above are interesting, they seem to outline issues related to outsourcing which are not exclusive to fintech banks, especially if a restrictive interpretation of this term (fintech bank) is followed. As noted by the European Banking Authority (EBA), which has approved Guidelines on outsourcing, "in the context of digitalisation and given the increasing importance of new financial technology (Fintech) providers, financial institutions are adapting their business models to embrace such innovations".[25] Moreover, "some have intensified the use of Fintech solutions and have launched projects to improve their cost efficiency also in response

21 Supra 10, 7.

22 ibid 9.

23 Idem.

24 Idem.

25 EBA, 'Final Report of the Guidelines on Outsourcing', (25 February 2019) EBA/GL/2019/02.

to the intermediation margins of the traditional banking business model being put under pressure by the low interest rate environment". Outsourcing, it is said, "is a way to get relatively easy access to new technologies and to achieve economies of scale." The most important dynamic at play here appears to be the rise of outsourcing arrangements pursued by credit institutions, including "traditional" credit institutions, taking advantage of (external) "fintech solutions", and not so much the proliferation of "fintech banks".

In terms of governance structure and credit decision-making process, the Guide notes that the "ECB (…) will review an applicant's internal process for assessing loans, which should establish minimum criteria for information on which to base the analysis". The supervisory assessment considers "how the applicant will verify customers' income, and what systems (e.g. credit bureaus) and data (e.g. credit history records and customers' net debt level based on individual or peer data) it will use to obtain credit scores". The ECB should, therefore, assess how "this information will serve as the basis for ratings assigned to loans granted by the fintech bank". As the "accuracy and adequacy of such information is critical for the bank, its management body should be able to make appropriate judgements about the acceptability of the fintech bank's end-to-end credit granting operation."[26]

The ECB also explains that it "will assess the feasibility of the applicant's credit-scoring model, which may include a range of approaches, from building an in-house credit-scoring model to using data to validate credit scores obtained from third-party providers".[27] At the same time, the ECB commits to take into account the principle of proportionality when assessing the "adequacy of the fintech applicant's resourcing plans, including the number of staff involved in the development and maintenance of in-house credit-scoring models".[28]

In the event that a fintech bank "uses credit scores provided by a third-party vendor (outsourcing of credit scoring) and the vendor uses alternative data sources to build the scorecards, the ECB (…) will assess the adequacy of the fintech bank's risk controls." In this context, "aspects for consideration will include whether the outsourcing risks are adequately managed, and whether the credit-scoring process and data sources are properly documented and understood throughout the bank." Finally, the assessment will consider the applicant's capacity to exercise contractual rights to permit both the fintech bank and the supervisors to audit the outsourced credit-scoring activities."[29]

While this caution on the part of the ECB is clearly understandable, the underlying issues do not seem to be exclusive (or even especially applicable) to "fintech banks", as noted above with regard to outsourcing. Banks, in general, have been relying on outsourcing to a greater extent, also as way to reduce costs and to take advantage of the expertise of other actors (sometimes referred to as third party providers or "fintechs").

26 Supra 10, p. 9 and 10.

27 ibid 10.

28 Idem.

29 Idem.

Another area of supervisory concern, according to the Guide, are the IT-related risks. In the Guide, the ECB outlines two main sources of IT risk: cyber risks and the reliance on outsourcing, including cloud computing. It explains that an "increased vulnerability to cyberattacks arises from the involvement of a wide range of stakeholders" and "[g]iven the propensity for higher levels of outsourcing by a fintech bank which involves data sharing across a broader range of parties, the bank's vulnerability to cyberattacks is increased." The ECB therefore outlines a couple of safeguards against cyber-attacks.[30]

When it comes to the assessment of outsourcing, the Guide explains that where a fintech applicant has entered into an outsourcing arrangement, "the ECB (…) will consider whether: 1. The applicant has performed an appropriate due diligence check of the service provider to assess the risks associated with the outsourcing arrangements; this check can also be undertaken by an independent third party; 2. The applicant has given due consideration to factors including the financial situation of the service provider, its position in the market, the quality and turnover of its managers and staff, and its ability to manage business continuity and provide accurate and timely management reports."[31] The Guide also defines criteria for the supervisory assessment of cloud outsourcing services.

To be sure, these issues also extend beyond "fintech banks". The ECB makes the point that fintech banks are particularly reliant on outsourcing. However, it is unclear whether this refers to a relative or absolute assessment. Either the Guide is to be interpreted as guidance which the ECB indirectly aims at most credit institutions, which can now been seen as "fintech banks", or it is not obvious why the ECB should be particularly worried with a relatively low number of fintech banks as regards the general challenges posed by cyber risks and the reliance on outsourcing, including cloud computing. Arguably, the lack of a clear understanding of "fintech bank" makes the assessment of the Guide's objectives more difficult.

In the field of operational plannings, a curious aspect of the Guide is the "encouragement" for fintech banks to prepare an exit plan. This is explained due to the "relatively new technologies used by fintech banks, and their recent entrance to the market", which means that "limited historical data, benchmarks and experience are available for these types of institutions". According to the ECB, there tends to be greater uncertainty with regard to fintech banks' business projections and the resulting capital requirements". The ECB notes that, "[c]ompared with traditional banks, it is often less clear how the business will develop, since it is more difficult to forecast the number of customers, level of sales, etc" and that "it is also harder to predict the future level of external funding".[32]

In view of the above-mentioned challenges, a fintech bank applying for authorisation is "encouraged to prepare an exit plan which will only need to be presented to supervisors if specifically

30 ibid 11.

31 ibid 12.

32 ibid 14.

requested based on the specificities of the business model."[33] While the possibility of preparing an exit plan is also briefly and discretely mentioned in the general ECB guidance for licence applications, the idea is given greater emphasis in the Guide to fintech licensing applications. In any case, it may sound strange for a (fintech) bank to be asked to prepare an exit plan (different from a resolution plan) even before it has received an authorisation to initiate its operations.

4. Level-playing field concerns vis-à-vis credit institutions

The emergence and growth of fintechs has led to the criticism that while the services provided by credit institutions, on one hand, and payment institutions and electronic money institutions, on the other, have become more similar and fluid, the regulation which they are subject to still differs considerably. In particular, the CRR and CRD IV requirements are clearly tougher, as regards capital, liquidity and internal governance, when compared to the PSD 2 rules, which also establish rules on capital and internal governance but are more focused on service provision.

In this context, the banking industry has argued that the growing importance of fintechs (in particular payment institutions and electronic money institutions) calls for greater regulatory controls, which would also level the playing field as regards credit institutions. The European Banking Federation has made such a call, highlighting the importance of an "equal contribution to an innovative and competitive ecosystem", on the basis of a principle of "same services, same risks, same rules and same supervision".[34] The EBF has issued the following considerations:

"The Digital Single Market is an opportunity for all operators willing to embrace the digital transformation: authorities, FinTech (banks, non-banking FinTech/FinTech start-ups) corporates and consumers. The same regulatory conditions and supervision should apply to all actors (large digital players, financial institutions and start-ups) who seek to innovate and compete in the FinTech system. Any regulatory framework must keep barriers to entry to a minimum, and should also not hinder incumbents' ability to innovate and develop. The principle of "same services/activities, same risks, same rules and same supervision" should always be applied in order to ensure consumer protection and market integrity. Regulation should also be neutral regarding technological developments and business models. For competition and a Digital Single Market for financial services to succeed, improvements are needed in current legislation, and regulatory requirements must be proportionate to ensure the current framework does not hamper innovation and competitiveness. Market incumbents must preserve a level playing field allowing some

33 ibid 13-14. "The purpose of the exit plan is to identify how a fintech bank applicant can cease its business operations on its own initiative, in an orderly and solvent manner, without harming consumers, causing disruption to the financial system or requiring regulatory intervention."

34 See: https://www.ebf.eu/regulation-supervision/eba-discussion-paper-on-fintech-ebf-response/

degree of connectivity to newcomers, however it is important to ensure that all market participants contribute to the appropriate level of investment in infrastructure."[35]

The notion that there is a regulatory unlevel playing field between credit institutions and other payment services providers (payment institutions and electronic money institutions), has also been echoed by some bank supervisors, notably the European Central Bank (ECB). In a 2020 report, the ECB stated the following:

> "In the context of the current regulatory framework, different entities which could perform to a certain extent similar activities, such as credit institutions, e-money institutions and payment institutions, are subject to various regulatory and supervisory frameworks, either at national or European level. As this trend is accelerated by innovation and digitalisation, this framework may need to be reviewed to ensure a level playing field and maintain the principle of "same activity, same risks, same supervision and regulation". Moreover, as part of its oversight role over payment systems, instruments and schemes, the ECB envisages enhancing its cooperation with national authorities supervising payment service providers (PSPs)."
>
> "As regards the above-mentioned priorities of the European Commission, the ECB considers that [w]hile the current EU financial services regulatory framework is already broadly technology neutral, it should support fair competition and ensure a level playing field in digital financial services, while addressing associated risks and also reinforcing the need to develop strong risk management at the firm level. Important areas for improvement would be to enhance clarity on the application of existing laws and regulations to innovative technologies and related business models, and to diminish the fragmentation resulting from different legal and regulatory frameworks and industry standards across EU Member States, in order to foster the Internal Market, the pan-European application of standards and a level playing field."[36]

Such warnings appear to highlight the potential shortcomings of the entity-based regulatory model. Indeed, the notion that the growth of fintech payment institutions has not been matched by an equally forceful regulatory response at EU level, that would re-establish the level playing field, has been voiced by the banking industry on several occasions. An important argument put forward by the banking industry, in this context, is that regulation should place more emphasis on the relevant activity and less on the type of entity carrying on the activity, as a way of preventing regulatory arbitrage.

Restoy notes that a "relevant question is whether the growth potential of fintech and big tech companies could be, in part, the consequence of lighter regulatory requirements compared with those for incumbent players such as commercial banks." This argument, he says, "could be based on the observation that financial institutions have specific (entity-based) obligations, such as those

35 *Idem.*

36 Supra 17, p. 3.

related to prudential requirements, which do not apply to other competitors in specific markets such as payment."[37] He also notes that the banking industry "has frequently stressed (…) that regulation could promote a level playing field through the adoption of an activity-based approach, as opposed to an entity-based one", which "would mean imposing similar requirements upon all active players in a particular market segment, regardless of the legal nature or other characteristics of those entities and, in particular, whether or not they hold a banking licence."[38]

In order to evaluate whether the unlevel playing field argument holds, a clear distinction between activity-based and entity-based regulation is important. According to Borio, Claessens and Tarashev, activity-based regulation "strengthens the resilience of a systemic activity directly, by imposing restrictions on how entities perform this activity alone, i.e. on a standalone basis." Activity-based regulation "does not vary with the type of entity that performs the activity or to the other activities that the entity performs. However, it can vary with the importance of an entity for the functioning of the activity."[39] On the other hand, entity-based regulation "strengthens the resilience of activities indirectly, as it is calibrated at the level of the entities that perform them. It restricts those features of an entity that affect the risk and repercussions of its failure. Since an entity's resilience hinges on the mix of its activities, [entity-based] regulation imposes constraints on the combination of those activities."[40]

The same authors then argue that the "merits of [entity-based] and [activity-based] regulation depend on the underlying conditions (…) Entity-based regulation is called for wherever the primary cause of the failure of systemic activities is the failure of entities that perform these activities." Notably, they note, "the failure of even a few entities may lead to severe disruptions of their (bundled) activities", and banks are a clear example.[41] As the "combination of activities is inherent in most financial intermediation – especially that involving liquidity transformation and/or leverage – [entity-based] measures are at the core of financial stability regulation" and hence "the major policy efforts to make entity failures less likely and their resolution less disruptive".[42]

As noted elsewhere, "financial intermediaries emerge to cope with asymmetric information", and "banks, in particular, engage in costly screening and monitoring to make sure that potential problems are anticipated and solved." However, "banks differ from other intermediaries because they perform this task by turning liquid, short-term and safe claims, into illiquid, long-term risky assets (known as liquidity transformation and maturity transformation)". Hence, "[it] comes as no

37 Fernando Restoy, 'Fintech regulation: how to achieve a level playing field', Occasional Paper No 17, 1-2.

38 Idem.

39 Supra 7, 4.

40 *Idem*.

41 ibid 5.

42 *Idem.*

surprise that banks are inherently fragile because they are prone to runs and panics as they cannot liquidate assets quickly enough to honour the high demand for short-term liabilities at once."[43]

In contrast, activity-based regulation should, be pursued, according to Borio, Claessens and Tarashev, when two conditions are present. First, "the systemic activity at hand can fail even if the entities performing it do not", and, secondly, "the activity can be regulated directly on a standalone basis."[44] Restoy further notes that "[i]n general, existing requirements in the consumer protection domain in relation to the provision of payment services, credit underwriting, securities services and wealth management are substantively similar for all players allowed to perform those activities." Moreover, in the field of payment services, "regulation covers obligations related to transparency of services and fees, mobility of accounts across providers, conditions for authorisation and execution of orders, and data protection." In the domain of lending, "rules affect the transparency of terms and conditions, non-discriminatory accessibility criteria, tests of affordability, transmission of information to third parties, etc." In the area of securities services and wealth management, "it includes information requirements, suitability tests, obligation to act in customers' interests, etc." In general, it may be concluded, "all requirements in these areas apply widely to different types of providers of each service."[45]

Restoy also observes that, for example, in the European Union, "the Payment Accounts Directive (Directive 2014/92/EU) and the Payment Service Directive (Directive (EU) 2015/2366 or PSD2) contain consumer protection provisions which apply to a wide variety of regulated providers, including credit institutions, e-money institutions and payment institutions". In the United States, payment services are "regulated by state law, [y]et all providers of payment services in the US are subject to the jurisdiction of the Consumer Financial Protection Bureau (CFPB), which issues rules, monitors compliance and takes enforcement actions." In addition, states can issue their own requirements in the area of consumer protection, which are often more stringent than federal rules." These rules "are applied to all firms active in their jurisdiction, including state registered banks and thrifts and subsidiaries of national banks."[46]

This said, it may also be noted, as argued by Borio, Claessens and Tarashev, that, "contrary to what is often argued, [activity-based] measures are not necessarily consistent with a level playing field." Although the "belief that they are consistent derives from the presumption that they should be applied uniformly to all relevant entities", it is noted that this may be detrimental to macroeconomic policy objectives. Therefore, they argue, "[a] focus on systemic risk (…) requires tighter measures on those entities that are of greater importance for the resilience of an activity, placing them at a competitive disadvantage."[47]

43 Fatjon Kaja, Edoardo Martino and Alessio M. Pacces, 'Disintermediating finance: Fintech and its limitations', blogpost on the FinReg blog, (8 January 2021), https://sites.duke.edu/thefinregblog/2021/01/08/disintermediating-finance-fintech-and-its-limitations

44 Supra 7, 5.

45 Supra 36, 9-10.

46 ibid 10.

47 Supra 7, 8.

Banks and payment institutions or electronic money institutions are already today subject to similar rules when they perform similar services (to be sure, payment services). Due to the broad nature of the banking licence, which allows credit institutions to provide a variety of services other than payment services, credit institutions do compete with certain actors, notably payment institutions and electronic money institutions, in some services but also extend their activities to other financial services. Meanwhile, banking activity involves particular and important risks, which are not run by payment institutions and electronic money institutions, as credit institutions receive deposits and offer credit on a professional basis, which generates relevant capital and liquidity risks, which in turn generate financial stability risks.

Restoy therefore argues that the "entity-based approach for banking regulation is fully warranted given that the combination of activities that banks perform involves socially relevant risks that cannot be fully addressed by imposing specific requirements on each of the services they provide." In particular, he notes, "prudential regulation aims to mitigate financial stability risks stemming from the maturity, liquidity and other risk transformations that banks perform by combining different activities." As a consequence, "[t]o the extent that other entities – such as fintechs and big techs – do not perform risk transformation activities as such, it would not be warranted to impose on them prudential requirements akin to the ones banks have to satisfy." Moreover, "entity-based prudential rules for banks are based on specific policy objectives – such as financial stability – that are not subordinated to the achievement of a perfectly competitive landscape". Consequently, "level playing field considerations cannot be enough to support a radical overhaul of the current regulatory framework."[48]

Still, Restoy also observes that "there are other areas, such as operational resilience or competition, for which an entity-based approach could also be justified (in combination with activity-based rules) not only for banks but also for other providers of financial services."[49] In terms of operational resilience, "[e]nsuring the continuous and adequate performance of business operations by financial institutions is an important ingredient in the regulatory framework", and, in the case of banks, "operational risk is a factor affecting capital requirements in international prudential standards". However, "the notion of operational risk in the Basel standards is relatively narrow, as it refers to pecuniary costs or penalties resulting from banks' operations." The concept of operational resilience is, however, "much broader, as it includes all factors affecting entities' abilities to deliver critical operations". Therefore, Restoy argues, "operational resilience cannot be determined by banks' capacity to mitigate operational risk in the narrow sense of prudential standards" and "instruments for promoting operational resilience go substantially beyond capital requirements to cover operational risk."[50]

48 Supra 36, 2.

49 ibid 14.

50 Idem.

Finally, while "international standard-setting bodies have introduced high-level principles for specific financial institutions (such as banks, insurance companies and market infrastructures) that deal with specific aspects of the wider concept of operational resilience, such as outsourcing, business continuity and cyber security", there are, however, "no comparable international standards for payment service providers." The same author considers that, in the context of the provision of technology-intensive financial products and services, the rules related to the provision of services by third parties are especially important.[51]

Restoy adds that, "in several jurisdictions, including the United States, [outsourcing] requirements are substantially more detailed in the case of banks than for other firms". In the European Union, he notes, "outsourcing is regulated for banks under the Capital Requirements Directive (CRD), for payment and e-money institutions under PSD2, and for providers of investment services under MiFID2." In his view, "the imposition of requirements at the subsidiary level and the consideration of services provided by other subsidiaries within the group as outsourcing may make the rules particularly stringent in the case of banks". Only recently, he adds, "regulators have started to adopt a more comprehensive approach that entails identifying all the various dimensions of the concept of operational resilience, the introduction of a specific and consistent set of requirements for incident prevention and recovery, and the expansion of the set of entities subject to the new rules." In his view, "those initiatives adopt a sound application of the principle of proportionality that implies particularly stringent requirements for big market operators, regardless of their legal nature or statute".

In this context, regulation seeking to promote operational resilience "is evolving towards a framework characterised by two components: (i) capital requirements for entities subject to prudential regulation as a function of their operational risk; and (ii) comparable requirements to ensure adequate prevention and management of operational incidents for all providers of financial services." Restoy concludes that "[t]his framework, once completed, will constitute a step forward in delivering operational resilience objectives while facilitating a more level playing field."[52]

The above-mentioned remarks are also in line with a recent trend in the EU regulatory framework, in the context of which it is worth mentioning the proposals from the European Commission for a Directive and a Regulation on digital operational resilience for the financial sector (the so called "DORA" package).[53] In particular, the Regulation lays down uniform requirements concerning the security of network and information systems supporting the business processes of financial entities needed to achieve a high common level of digital operational resilience. The requirements applicable to financial entities relate to information and communication technology (ICT) risk man-

51 ibid 15.

52 Idem.

53 EC, *Proposal for a Regulation of the European Parliament and of the Council on digital operational resilience for the financial sector and amending Regulations (EC) No 1060/2009, (EU) No 648/2012, (EU) No 600/2014 and (EU) No 909/2014*, (24 September 2020) COM(2020) 595 final.

agement, reporting of major ICT-related incidents to the competent authorities, digital operational resilience testing, information and intelligence sharing in relation to cyber threats and vulnerabilities, and measures for sound management by financial entities of the ICT third-party risk. The personal scope of the Regulation is also wide, applying to several financial services entities, including credit institutions, payment institutions and electronic money institutions.

The DORA package may be seen as way to foster a level playing field between credit institutions, payment institutions and electronic payment institutions, while reinforcing the entity based regulatory model. The DORA recognises the importance that financial services provided digitally have acquired, including in the field of payments, as well as the new risks which may be created because of this evolution, especially in areas which are fast growing and where the transaction volumes are high (as is the case, for example, in payments).

5. Conclusion

The emergence and growth of fintechs has generated concerns in the banking sector related to increased competition, notably in the payments market. As a consequence, banks have sought to broaden the common understanding of the concept of "fintech" (a term which has been mostly linked to emerging and technologically-reliant payment institutions and electronic money institutions). However, the descriptions of fintech banks are somewhat confusing, considering that many credit institutions have invested significant resources in the development of information technology tools and have also sought to take advantage of "fintech solutions", in order to increase the quality of their services or products, or as a way of reducing costs.

A second response, by banks, has been the voicing of concerns related to the regulatory level playing field, as the entity-based model places tighter regulations on them, as a consequence of the greater risks to financial stability posed by the combination of the activities they can carry on. Nevertheless, this criticism overlooks the advantages of the entity-based regulatory model, which is not designed to address level playing field objectives but rather to promote public policy aims, such as financial stability. While it makes sense to subject credit institutions and payment institutions to the same conduct rules when they offer payment services, the activities of credit institutions are broader and, combined, they are also riskier, due to liquidity and maturity transformation, which are at the core of their business models.

That said, it seems fair to recognise the new risks posed by payment institutions and electronic money institutions, the disruption of whose activities may also entail problems for financial stability, in the context of the functioning of the payments market. It is therefore to be expected that, despite significant differences which will remain vis-à-vis credit institutions, payment institutions and electronic money institutions will be subject to more demanding regulatory requirements in years to come, including on operational resilience issues.

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The Licensing Principle and Investment-Based Crowdfunding

by Eugenia Macchiavello[1]

Abstract

Crowdfunding has been recently regarded as an important instrument of alternative finance, contributing to meeting SMEs' financing needs. In particular, investment-based crowdfunding, although smaller in market size compared to lending-based crowdfunding, can potentially help seed and start-up companies move from the 'family, friends and fool' stage to venture capital and private equity investments. The activities of crowdfunding platforms present features similar to investment firms' services and an economic function of 'weak intermediation' similar to these, but also special characteristics. This paper sets out to discuss, in line with the main topic of this CIDP conference and EBI working paper series, whether investment-based crowdfunding platforms conduct activities traditionally subject to the licensing principle (the same or similar activities) and should be subject to the same or similar licensing requirements and legal framework. It also offers a critical analysis of the approach adopted by EU Regulation No. 1503/2020 on European Crowdfunding Service Providers for Businesses in this regard, drawing a number of conclusions on the gatekeeper's role assigned to platforms by the Regulation.

Keywords: Crowdfunding, Crowd investors, Investment-Based Crowdfunding, Licensing principle

1. Introduction: Investment-based crowdfunding as disintermediation or regulated activity?

Investment-based crowdfunding (or marketplace investing) is generally defined as an open call from entrepreneurs to raise funds in the form of investment in specific business projects, usually through specialised online platforms, aimed at a multitude of internet users (the 'crowd'). This investment can take the form of: a) equity: shares or equivalent forms of participation in ownership of a firm (equity-

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based crowdfunding,[2] the prevailing form); b) debt-securities, such as bonds, mini-bonds; c) other forms of investments, such as profit-sharing investment contracts, entitling the holder to a share in future sales revenue (e.g. royalties), although not recognising any ownership or governance rights over the venture.[3] Crowd-investors generally commit small sums to each project, diversifying their investments, with an expectation of financial return.[4] They might invest in firms directly, becoming shareholders in the company, or, indirectly, buying a security issued by a collective investment fund or SPV (generally one per venture), which then invests in companies (e.g. Seedrs, in the UK; Symbid, in the Netherlands). Crowd-investors generally make a free choice of investee companies but some platforms provide pricing/ratings or allow crowd-investors to invest along with business angels (e.g. Spreds, in Belgium).[5]

Crowdfunding has emerged as a financial innovation directly connecting investors with entrepreneurs and eliminating the long chain of intermediation, typical instead of traditional financial intermediation, involving for instance underwriters, distributors such as banks and investment firms, analysts, rating agencies, etc.. In this sense, crowdfunding has been seen as a way to reduce financing costs and democratise finance. However, from an opposing perspective, crowdfunding platforms might have simply taken the place of traditional intermediaries ('re-intermediation') and must therefore assume a similar role as gatekeeper, subject to equivalent regulation. Gatekeepers, in traditional financial regulation theory, are the intermediaries or professionals operating in the chain of financial investment (including lawyers, credit rating agencies, underwriters, etc.) and standing between issuers and investors, able in principle to reduce information asymmetry and other market failures.[6] Nonetheless, the importance of each particular gatekeeper and its potential liability towards investors generally depends on the effective or official role played (e.g. drafting only a part of the prospectus or diligent double-checking thereof), as also recognised in law (statute or case law). Crowdfunding platforms are new intermediaries, whose role has yet to be clarified.

2 Some platforms (e.g. Crowdcube) also allow offerings of dual-class shares but this model has not proved particularly successful: Douglas Cumming and Sophia Johan, *Crowdfunding. Fundamental Cases, Facts, and Insights* (Academic Press 2019) 151, 264ff.

3 Some classification systems regard real estate crowdfunding (investment in shares and debt securities of real estate ventures) as a separate category in the IBC area: see Tania Ziegler et al, 'The Global Alternative Finance Market Benchmarking Report' (2020) 31 <https://www.jbs.cam.ac.uk/fileadmin/user_upload/research/centres/alternative-finance/downloads/2020-04-22-ccaf-global-alternative-finance-market-benchmarking-report.pdf>: see also European Commission (2018b) 11; Rotem Shneor, 'The Context: Crowdfunding Market and its Recent Developments', forthcoming in Eugenia Macchiavello (ed)., Regulation on European Crowdfunding Service Providers for Business: A Commentary (Edward Elgar 2022), ch. 2.

4 For an unofficial EU description of crowdfunding: European Commission, 'Impact Assessment Accompanying the Document Proposal for a Regulation [...] on European Crowdfunding Service Providers (ECSP) for Business-Staff Working Document' (8 March 2018) SWD(2018) 56 final, 7; European Commission, 'Unleashing the Potential of Crowdfunding in the European Union' (Communication) COM(2014) 172 final 2, 3. For widely used definitions inspiring the Commission, see Armin Schwienbacher and Benjamin Larralde, 'Crowdfunding of Small Entrepreneurial Ventures' in Douglas Cumming (ed), *The Oxford Handbook of Entrepreneurial Finance* (OUP 2012) 369, 370–371.

5 Concerning IBC models and characteristics: Eleanor Kirby and Shane Worner, 'Crowd-funding: An Infant Industry Growing Fast' (2014) IOSCO Research Department Staff Working Paper 3/2014 <www.iosco.org/research/pdf/swp/Crowd-funding-An-Infant-Industry-Growing-Fast.pdf>; ESMA, 'Opinion on Investment-based Crowdfunding' ESMA/2014/1378, 7; Macchiavello (2017) 668; Ferrarini and Macchiavello (2017) 660; Cumming and Johan (2019) 150.

6 See Jennifer Payne, 'The Role of Gatekeepers', in Niamh Moloney, Eilis Ferran, and Jennifer Payne (eds), *Oxford Handbook of Financial Regulation* (OUP 2015) 254; John C. Coffee Jr., *Gatekeepers. The professions and corporate governance* (OUP, 2006).

The issues that this paper seeks to address, in line with the main topic of this conference and EBI working paper series, are, first of all, whether investment-based crowdfunding platforms conduct activities traditionally subject to the licensing principle (the same or similar activities) and therefore should be subject to the same licensing requirements and framework; and secondly, which approach EU Regulation No. 1503/2020 on European Crowdfunding Service Providers for Businesses has adopted in this regard, discussing this through an analysis of its provisions.

2. A Closer Look: Investment-based crowdfunding platforms in comparison with financial intermediaries traditionally subject to the licensing principle

2.1 Investment-based crowdfunding versus traditional intermediation: economic function, activities and other main features

Most crowdfunding platforms present themselves simply as marketplaces where investors and entrepreneurs meet. However, platforms perform key services relating to the underlying transaction between investors and entrepreneurs: they generally screen applicants, performing certain due diligence activities such as background, credit and cross-checks to exclude fraudsters or even, in some cases, select the 'best-in-class'.[7] Sometimes, they also support entrepreneurs in preparing their business plans and making projects visible on the website or even providing additional promotion/marketing support. In addition, they channel information about entrepreneurs to crowd-investors, provide standard contracts, create and maintain communication channels between users, and also handle the parties' post-contractual relationships.[8] In cases where a regulated financial activity can be identified among these crowdfunding activities, the principles currently governing financial regulation require application of the corresponding regulatory framework. Among these 'governing' principles, we can recognise the licensing principle, geared to safeguarding the most important objectives of financial regulation (investor protection, stability, etc.), the technology neutrality principle, the level-playing field principle ('same risk, same rules'), as well as proportionality and the flexibility of EU financial regulation (able to accommodate innovations through interpretation).[9]

7 Jonas Löher, 'The Interaction of Equity Crowdfunding Platforms and Ventures: An Analysis of the Preselection Process' (2017) 19 Venture Capital 51; Armin Schwienbacher. 'Equity Crowdfunding: Anything to Celebrate?' (2019) 21 Venture Capital 65.

8 See Yannis Pierrakis and Liam Collins, 'Crowdfunding: A New Innovative Model of Providing Funding to Projects and Businesses' (2013) <https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2395226>; Douglas Cumming, Sofia A. Johan and Yelin Zhang, 'The Role of Due Diligence in Crowdfunding Platforms' (2019) 108 Journal of Banking and Finance 1.

9 See for instance, European Parliament, 'FinTech: the influence of technology on the future of the financial sector', (Resolution, 17 May 2017); European Commission, 'FinTech Action Plan: For a More Competitive and Innovative European Financial Sector' (8 March 2018) COM/ 2018/ 0109 final; EBA, 'Regulatory Perimeter, Regulatory Status and Authorisation Approaches in Relation to Fintech Activities – Report', (18 July 2019), 22, https://eba.europa.eu/documents/10180/2551996/Report+regulatory+perimeter+and+authorisation+approaches.pdf. See also, in this publication, the contributions by Mendes Correia and , Barroso. The reader is also referred to: Eugenia Macchiavello, 'FinTech Regulation from a Cross-sectoral Perspective' in Veerle Colaert, Danny Busch and Thomas Incalza (eds.), *European Financial Regulation: Levelling the Cross-Sectoral Playing Field*, (Hart 2019) 63-85, 73ff.

If we compare the platforms' activities and economic function with those of traditional intermediaries,[10] it is easy to dismiss any similarities with banking or insurance business. Instead, crowdfunding platforms present similarities with investment firms' economic function of 'weak intermediation', helping to channel economic resources to finance productive activities by reducing information asymmetry and adverse selection problems, but entailing agency problems (conflicts of interests).[11]

However, when comparing investment-crowdfunding with MiFID II services, identifying the investment service offered by platforms is less straightforward. In this context, investment-crowdfunding appears to combine features of different services: for instance, mixing elements of placement without a firm commitment, reception and transmission of orders, execution and markets, which has led to varying legal classifications in Member States (see below § 2.2.).

What is more, investment-crowdfunding also presents particular features that distinguish it from the traditional investment process. First of all, it generally focuses only on seed and early-stage companies, which are riskier and generally excluded from public markets because of the lack of public information and secondary markets, and therefore entail high transaction costs: as a consequence, these issuers are generally financed primarily by 'family, friends & fools' (FFF) and, in part, banks, venture capitalists and business angels. Technology (platforms and the internet, AI and big data for rating, etc.), in combination with the absence of traditional intermediaries, makes it possible to contain costs and reach a broad group of investors.

Considering the absence of underwriters and other pricing mechanisms, other market-based systems are used to contain risks for investors, such as diversification, the 'all-or-nothing' rule (i.e. the company gets the financing only if the campaign is successful in reaching the declared target amount and therefore in convincing enough investors), co-investing with experienced and professional investors, etc..[12]

Although the literature points to mixed results in this regard, investors seem motivated not only by the expectation of a financial return, but also by personal satisfaction, the possibility of influencing a campaign's outcome, freely pick specific projects, and even by a sense of involvement, a lower level of separation between ownership and control and the objective of supporting sustainable develop-

10 Also discussed throughout this volume.

11 About economic functions of financial intermediaries and weak and strong financial intermediation: Alessio Pacces, 'Financial Intermediation in the Securities Markets: Law and Economics of Conduct of Business Regulation', (2000) 20 International Review of Law and Economics 479, 481-82; Monika Marcinkowska, 'Functioning of the Financial Industry', in Veerle Colaert, Danny Busch and Thomas Incalza (eds.), *European Financial Regulation. Levelling the Cross-sectoral field* (Hart, 2019), 13-38. See also Eugenia Macchiavello, 'Financial-Return Crowdfunding and Regulatory Approaches in the Shadow Banking, Fintech and Collaborative Finance Era', (2017) 14 European Company and Financial Law Review 662, 688.

12 More extensively on the differences between crowdfunding and traditional intermediaries: Eugenia Macchiavello, 'The Crowdfunding Regulation in the Context of the Capital Markets Union', in Pietro Ortolani and Marije Louisse (eds), *The EU Crowdfunding Regulation*, (OUP 2021) 25-46; Eugenia Macchiavello, 'Disintermediation in Fund-raising: Marketplace Investing Platforms and EU Financial Regulation', in I-H. Chiu and G. Deipenbrock (eds.), *Routledge Handbook of Financial Technology and Law* (Routledge, 2021) 291, 299; see also Anna Lukkarinen, 'Equity Crowdfunding: Principles and Investor Behaviour', in Rotem Shneor, Liang Zhao and Bjørn-Tore Flåten (eds) *Advances in Crowdfunding* (Palgrave Macmillan, 2020) 93-118; Arash Gholamzadeh Nasrabadi, 'Equity Crowdfunding: Beyond Financial Innovation', in Dennis Brüntje and Oliver Gadja (ed.), *Crowdfunding in Europe* (Springer 2016), 201ff; Pierrakis and Collins (2013) 3–4.

ment.[13] Moreover, investors appear to ground their decisions not particularly on financial statements but rather on soft information, 'signals' and non-financial factors such as the availability of videos and updates, the perceived informativeness of the campaign material and clarity about plans and the use of funds, the originality of the business idea, certain characteristics of the entrepreneur (e.g. patents, level of education and business experience), the retention share, the involvement of a credible lead investor and venture capitalists or business angels.[14] The methods used to make disclosures to and inform potential investors are also different: instead of a long and complex prospectus and financial documentations, we find simple documents, video, pitches, forums and feed-backs.[15]

The risks for investors are considerable (fraud, illiquidity, lack of traditional safety nets, etc.)[16] and might justify subjection, if not to the licensing and other rules for investment firms, then - because of the differences mentioned - to a similar set of rules, with the main objective of protecting investors. However, investment-crowdfunding has often been subject to no or, more often, soft regulation in consideration of, firstly, the low level of systemic risk, not involving trust and reliance on traditional and systemically important financial institutions and still small compared to the mainstream market.[17] Secondly, in consideration of the potential benefits offered by regulation,

13 Lukkarinen (2020) 96ff; Silvio Vismara, 'Sustainability in equity crowdfunding', (2019) 141 Technological Forecasting & Social Change 98, 104; Christoph Siemroth and Lars Hornuf, 'Do Retail Investors Value Environmental Impact? A Lab-in-The-Field Experiment with Crowdfunders' (2021). CESifo Working Paper No. 9197, 4-5, available at https://ssrn.com/abstract=3892621; Stefan Katzenmeier et al., 'The supply side: profiling crowdfunders', in Hans Landström, Annaleena Parhankangas and Colin Mason, Handbook of Research on Crowdfunding (Elgar 2019), 122-164, 137ff. Some recent studies distinguish between investors' motivations based on the type of crowd-investors ("venture trustful," "crowdfunding technicians," "financial investors, talent scouters," and "social dreamers"): Rosangela Feola et al., 'Segmenting "digital investors": evidence from the Italian equity crowdfunding market' (2021) 56 Small Business Economics 1235.

14 Lukkarinen, (2020) 99; Katzenmeier et al. (2019) 142ff; Gerrit K.C. Ahlers, Douglas Cumming, Christina Günther and Denis Schweizer, 'Signaling in Equity Crowdfunding', (2015) 39 Entrepreneurship Theory and Practice 955; Moritz (2015); Andrea Ordanini, Lucia Miceli, Marta Pizzetti and A. Parsu Parasuraman, 'Crowd-funding: Transforming Customers into Investors Through Innovative Service Platforms' (2011) 22 Journal of Service Management 443; Xuechun Li, Yuehuan Tang, Ningrui Yang, Ruiyao Ren, Haichao Zheng and Haibo Zhou, 'The Value of Information Disclosure and Lead Investor in Equity-based Crowdfunding: An Exploratory Empirical Study' (2016) 7 Nankai Business Review International 301; Evila Piva and Cristina Rossi-Lamastra, 'Human Capital Signals and Entrepreneurs' Success in Equity Crowdfunding' (2018) 51 Small Business Economics 667; Lars Hornuf, and Armin Schwienbacher, 'Market Mechanisms and Funding Dynamics in Equity Crowdfunding' (2018) 50 Journal of Corporate Finance, 556.

15 Alexander Moritz, Joern H. Block and Eva Lutz, 'Investor Communication in Equity-based Crowdfunding: A Qualitative-empirical Study' (2015) 7 Qualitative Research in Financial Markets 309; Anna Lukkarinen, 'Equity Crowdfunding: Principles and Investor Behaviour', in Rotem Shneor, Liang Zhao and Bjørn-Tore Flåten (eds), *Advances in Crowdfunding* (Palgrave Macmillan 2020).

16 About the risks and benefits of investment-crowdfunding: Ajay Agrawal, Christian Catalini and Avi Goldfarb, 'Some Simple Economics of Crowdfunding' (2013) NBER Working Paper 19133/2013, 10ff <https://www.nber.org/papers/w19133>; Kirby and Worner (2014) 12; European Commission (2014) 5; ESMA, 'Opinion on Investment-based Crowdfunding', ESMA/2014/1378, 10ff; John Armour and Luca Enriques, 'The Promise and Perils of Crowdfunding: Between Corporate Finance and Consumer Contracts' (2018) 81 Modern Law Review 51. See also Macchiavello (2017) 668ff.

17 In 2020, investment-based crowdfunding (equity, debt securities and profit sharing taken together) accounted for only $466 million (4.7% of all alternative finance in Europe, including the UK), making it tiny compared to the total traditional investment market. Nonetheless, data from the UK attest to the important role of crowdfunding and its more systemic relevance when focusing on data on the financing of SMEs: the equity crowdfunding platforms' share of all seed and venture-stage venture funding in the UK was 14.73% in 2019 and 15.08% in 2020 (see Tania Ziegler et al., 'The 2nd Global Alternative Finance Market Benchmarking. The Report', June 2021, 81, https://www.jbs.cam.ac.uk/faculty-research/centres/alternative-finance/publications/the-2nd-global-alternative-finance-market-benchmarking-report/).

especially if not over-burdened with the full weight of financial regulation. In practice, investment-crowdfunding seems to fill a significant gap in financing for start-ups (especially innovative and fast-growing ventures) and for micro or small enterprises, serving as a fast and convenient bridge from the typical first stage of financing (FFF) to business angels, venture capital, or even, in case of some small established firms, towards private equity and public capital markets.[18] At the same time, crowdfunding gives entrepreneurs the opportunity to leverage other funding resources and test the market response for their products before the official launch.[19] Investors can also benefit from lower costs, competition between different financial intermediaries and markets, investment diversification and the resilience of the alternative market.

2.2 Member States' approach to investment-based crowdfunding in relation to the licensing principle: regulatory fragmentation

Member States have responded differently to the question of whether investment-based crowdfunding needs to be subject to the licensing principle and, in particular, on what terms. The result is a varying balance between the objectives of investor protection, competition, single market, SMEs access to funding and a larger investor base. In fact, national regulatory approaches have ranged from a) no regulation; to b) the creation of a bespoke regime with exemption from MiFID II, the Prospectus Directive/Regulation and other laws; c) the mere introduction of special thresholds for exemption of crowdfunding, for instance, from the prospectus obligation; d) application to crowdfunding of special national regimes exempting it from MiFID II (based on Art. 3 of that directive); e) full application of traditional rules, in particular the MiFID II rules on investment firms.[20]

Despite the resemblance between crowdfunding services and certain MiFID II services, few countries have actually applied the entire bulk of EU-derived financial regulation to this segment of the market. One reason is that crowdfunding services, as already mentioned above, combine

18 European Commission, 'Impact Assessment Accompanying the Document Proposal for a Regulation on European Crowdfunding Service Providers (ECSP) for Business' (8 March 2018) 6, 13ff. See also Yannis Pierrakis and Liam Collins, 'Crowdfunding: A New Innovative Model of Providing Funding to Projects and Businesses' (2013) 5–6 https://papers.ssrn.com/sol3/papers.cfm?abstractid=2395226.

19 Schwienbacker and Larralde (2012) 373; Roland Strausz, 'A theory of crowdfunding: A mechanism design approach with demand uncertainty and moral hazard' (2017) 107 American Economic Review 1430; Ethan Mollick, 'The dynamics of crowdfunding: an exploratory study' (2014) 29 Journal of Business Venturing 1.

20 For a more detailed discussion and comparative law analysis, see: Macchiavello (2017); Macchiavello (2021a); Guido Ferrarini and Eugenia Macchiavello, 'Investment-based Crowdfunding: Is MiFID II Enough?' in Danny Busch and Guido Ferrarini (eds.), Regulation of EU Financial Markets: MiFID II (Oxford University Press 2017), 668; European Commission, 'Crowdfunding in the EU Capital Markets Union', SWD(2016) 154 final, <https://ec.europa.eu/info/system/files/crowdfundingreport-03052016_en.pdf>; Matthias Klaes et al., 'Identifying Market and Regulatory Obstacles to Crossborder Development of Crowdfunding in the EU – Final Report', (December 2017), <https://ec.europa.eu/info/sites/info/files/171216-crowdfunding-report_en.pdf>; CrowdfundingHub, 'Crowdfunding Crossing Borders' (2016), <https://drive.google.com/file/d/0B7uykMX1rDrWU3BRZTBMNzFwLVE/view>; Dirk Zetzsche and Christina Preiner, 'Cross-Border Crowdfunding – Towards a Single Crowdfunding Market for Europe' (2018) 19 European Business Organization Law Review 217. See also Chapters 41 (by De Pascalis about the UK), 42 (J-M. Moulin about France), 43 (by Wenzlaff and Odorović about Germany), 44 (by Piattelli and Caruso about Italy), 45 (by Hakvoort about the Netherlands), 46 (by Pereira Duarte and da Costa Lopes about Portugal), 47 (by Cuena Casas and Alvarez Royo-Villanova about Spain), 48 (by Härkönen, Neumann and Højvang Christensen about Nordic countries), 49 (by Divissenko about the Baltics), 50 (by Härkönen about the US), 51 (by Macchiavello), all forthcoming in Macchiavello (ed)., *Regulation*.

aspects of different investment services (e.g. mixing fragments of placing, reception/transmission and markets), without any of the latter able to perfectly accommodate the former, also because of the particular infrastructure used (the platform model, reliance on technology and automatic systems). Another reason is the variety in national interpretations and legal traditions as regards the definition of certain investment services and financial instruments. The reason for exclusion from application of MiFID II and the Prospectus regulation could therefore be that the products offered through crowdfunding platforms, in particular shares of private limited liability companies, are not classified as transferable securities. In certain cases, particular obstacles to transferability, such as the lack of concrete evidence of transferability (as opposed to merely potential transferability), the need for notarial certification or shareholders' consent and restrictions on public offerings, were used as arguments to exclude such classification in some countries, but not in others.[21] Lastly, platforms might be exempted from MiFID II under Art. 3(1), as providers of services of the reception and transmission of orders or investment advice, without the holding of clients' money or instruments, and so subject to lighter national law. Similarly, the possibility of not issuing a prospectus and, more generally, of exemption from the Prospectus Directive/Regulation, depended on the threshold - in terms of total consideration in twelve months - set by each Member States between €100,000 and €5 million (with the Prospectus Regulation in 2019, between €1 million and €8 million).

In countries where a special framework has been adopted for crowdfunding, certain features may be identified: the procedure and requirements for obtaining authorisation are simple and correspond to the normal types (e.g. fit and proper requirements for managers and major shareholders, lower limits for initial capital or professional insurance) and the overall regimes are generally quite light and focused on general requirements of conduct (e.g. fair conduct and efficient orders management) and disclosure. The main information document must be concise, written in a plain and clear language and including information about risks, costs, selection criteria and performance, with warnings about specific risks and absence of approval by the financial authority. In contrast, it is rarer to find requirements concerning due diligence in the selection of recipients (e.g. in France and Spain), adequate organisation and prudential 'own funds' (e.g. in the UK and Lithuania). Some countries expressly apply anti-money laundering (AML/CT) regulations (or, in any case, rules) to platforms (UK, Austria, Portugal and Germany) and include some conflict-of-interest provisions. This softer-touch regulation is counterbalanced by limitations on permissible activities or products[22] - including a prohibition on offering other regulated services, or holding clients' money/

21 For instance, shares in private limited liability companies are not considered transferable securities in Poland, Italy, Sweden, Croatia and Romania, in contrast to the prevailing interpretations in Hungary, Finland, Denmark and the Netherlands. Similarly, silent partnerships are financial instruments in Italy and Germany, but not in Austria. See Macchiavello (2017) 689, 698-99, 715; Eugenia Macchiavello, 'The Scope of the ECSPR: the Difficult Compromise Between Harmonization, Client Protection and Level-Playing Field- Articles 1 & 2 (& 46, 48-49, 51)', ch. 3, and 'Conclusions about the ECSPR and its harmonisation force: a brief summary of the objectives achieved and the remaining 'grey' areas from a comparative law perspective', ch. 51, both in E. Macchiavello (ed.), *Regulation*; Zetzsche and Preiner, (2018); Panagiotis K. Staikouras, 'The European Union Proposal for a Regulation on Cross-Border Crowdfunding Services: A Solemn or Pie-Crust Promise?' (2020) 31 European Business Law Review 1047, 1069.

22 For example, a maximum offering size ranging from €1 million (e.g. Portugal) to €2/2.5 million (Spain, Netherlands, Germany) or €5 million (France, and later €8 million). Offering only of simple financial instruments (see France) or only shares in innovative start-ups (see in Italy, originally) or only subordinated loans and profit-participation loans (originally, in Germany).

securities – and investment limits for retail or non-sophisticated clients. In many cases, an investor test or appropriateness assessment is required.[23] For retail investors, some countries also include withdrawal rights (e.g. Italy, UK, Austria, Germany and Netherlands) and/or redress mechanisms (Portugal, France, Netherlands and the UK).[24]

3. The Regulation on European Crowdfunding Service Providers: the application of a 'light' licensing principle to investment crowdfunding

3.1 General aspects and scope

In view of this wide variation between Member States in regulating investment-based crowdfunding, the European Commission advanced in March 2018 a Proposal for a Regulation on European Crowdfunding Service Providers, subsequently adopted in October 2020 as Regulation 1503/2020 (ECSPR).[25]

The Regulation has introduced a special mandatory regime for lending-based crowdfunding for businesses and investment-based crowdfunding, by way of exemption, in particular, from MiFID II[26] and the Prospectus Regulation, but under certain conditions. The ECSPR requires providers of the specified crowdfunding services to apply for authorisation to start their activities from their national competent authority[27], qualifying them for an EU passport (see below), and therefore to offer their services, once authorised in their country and communicated the intention to operate across borders, in other EU Member States.[28]

While Art. 5(2) MiFID II only applies the licensing principle to the provision of investment services only when carried on 'as a regular occupation or business on a professional basis', the ECSPR does not assign relevance to these aspects, potentially requiring an authorisation even when

23 For example, in Italy, the UK (when retail, in the absence of regulated advice), the Netherlands, Lithuania and Belgium. A suitability assessment is instead mandatory in France (where crowdfunding platforms are investment advisors) and Belgium (only when platforms offer investment advice).

24 Instead, only Italy presents a tag-along rights in case of change of control and the mandatory pre-investment by professional investors.

25 Regulation (EU) 2020/1503 of the European Parliament and of the Council of 7 October 2020 on European Crowdfunding Service Providers for Business, and Amending Regulation (EU) 2017/1129 and Directive (EU) 2019/1937 [2020] OJ
L347/1. For a detailed analysis of this legal text, please see: Macchiavello (ed.) *(2022)*; Eugenia Macchiavello, 'The European Crowdfunding Service Providers Regulation: The Future of Marketplace Lending and Investing in Europe and the 'Crowdfunding Nature' Dilemma' (2021) 32 European Business Law Review 557; Pietro Ortolani and Marije Louisse (eds), *The EU Crowdfunding Regulation* (OUP 2021).

26 See new Article 2, para.(p) MiFID II.

27 See Article 3, para. 1 ECSPR: "Crowdfunding services shall only be provided by legal persons that are established in the Union and that have been authorised as crowdfunding service providers in accordance with Article 12".

28 Crowdfunding service providers already operating in Member States under national law as of 10 November 2021 will be allowed, for a transitional period (originally ending 10 November 2022 but extended of an additional year in July 2022), to continue offering their services according to their national regimes until they obtain the new EU authorisation (Art 48(1) ECSPR).

crowdfunding service are only occasionally provided. In any case, under the ECSPR, crowdfunding service providers (or CSPs) are subject to the licensing principle throughout EU territory, and a new category of financial intermediaries and new EU license are created. As we shall see, the structure and principles of the rules introduced by the ECSPR are largely inspired by other EU regimes, in particular MiFID II. However, the Commission considered this to be disproportionately burdensome and proposed a lighter and simpler set of rules for crowdfunding platforms: the trilateral negotiations led to a more stringent regime[29] but this remains, overall, lighter (at least as regards investment-based crowdfunding) and subject to the proportionality principle.

The services identified as 'crowdfunding services' and in general defined as 'the matching of business funding interests of investors and project owners through the use of a crowdfunding platform' are the 'facilitation of granting of loans' to entrepreneurs (lending-based crowdfunding for businesses), and a combination of the MiFID II services of 'placement without a firm commitment basis' and 'reception and transmission of client orders'[30] relating to transferable securities[31] and the new category of 'admitted instruments for crowdfunding purposes' (Art 2(1)(a); recital 10). These instruments can be issued by a project owner or an SPV created for the purpose of a securitisation (Art 2(1)(q) ECSPR), but in this particular case, restrictions apply (see below, §3.2).[32] Therefore, the ECSPR has officially recognised the similarity between crowdfunding and traditional investment services, but opted to identify the former in jointly providing for two of such investment services, so as better to reflect the characteristics of crowdfunding services.[33]

'Admitted instruments for crowdfunding purposes' are defined by Article 2(1)(n) ECSPR as 'shares of a private limited liability company' not already considered transferable securities under national law but 'not subject to restrictions that would effectively prevent them from being transferred, including restrictions to the way in which those shares are offered or advertised to the public'. This category has been introduced to overcome differences at national level in the criteria for identifying transferable securities, especially with regard to shares of private limited liability companies. However, the national competent authority that grants authorisation retains the power to identify the types of shares of private limited companies to be considered admitted instruments for crowdfunding purposes based on the conditions mentioned above (Article 2(2) ECSPR): looking

29 For a comparison of the different texts, see Macchiavello (2021c).

30 As referred to in Annex I, Section A, items 7 and 1 MIFID II.

31 As identified in Article 4, para. 1(44) MiFID II. See also Macchiavello (2022a).

32 See Sebastiaan N. Hooghiemstra, 'Organizational and Operational Requirements for Crowdfunding Service Providers', ch. 4, and 'Crowdfunding, Alternative Investment Funds and the Relationship Between the ECSPR and the AIFMD', ch. 35, both in E.Macchiavello (ed.), *Regulation*.

33 'The joint provision of those services is the key feature of crowdfunding services compared to certain investment services provided under [MiFID II] even though individually those services match those covered by that Directive' (Recital 10, last period, ECSPR).

at the list published by ESMA of competent authorities' choices in this regard,[34] it is evident that divergences in the criteria will persist among Member States.[35]

Another condition for the application of the ECSPR is the upper limit on crowdfunding offers, which must not exceed €5 million in total consideration in 12 months per project owner (Art 1(2)(c) ECSPR). A corresponding exemption from the duty to publish a prospectus has been added in the Prospectus Regulation (PR) as Article 1(4) k). The maximum value for the threshold set in the ECSPR differs from the general 'small offer' exemption allowed under the PR for all non-crowdfunding offers: this can in fact be set by each Member State between €1 million (mandatory exemption, Art. 1(3) PR) and €8 million (Art. 3(2) PR) and, after the entry into force of the PR, most opted to set the threshold at the top of this range.[36] In any case, the ECSPR allows Member States with 'small offer' thresholds lower than €5 million to retain this in respect of crowdfunding only for a transitional period of 24 months, starting from 10 November 2021 (Art. 49 ECSPR).[37]

The ECSPR specifies that the total consideration should include offers not only of transferable securities, but also of 'admitted instruments for crowdfunding purposes' and loans conducted through crowdfunding platforms by the same project owner (Art. 1(2)I(i))[38]. as well as any other offer of transferable securities to the public by the same project owner through other means, when exempted under the mandatory or 'small offer' exemption of Articles 1(3) or 3(2) PR (Art 1(2)(c)(ii)). Consequently, the ECSPR rules appear more restrictive than those of the PR, where only transferable securities of the same class are counted, the upper limit is potentially higher and more than one exemption can apply (Art. 1(6) PR).

34 See ESMA, 'European Crowdfunding Service Providers for Business Regulation (2020/1503) - Miscellaneous reporting to ESMA' (10 November 2021) ESMA35-42-1305, 2-3, www.esma.europa.eu/file/121782/download?token=rKWN71uD.

35 See Macchiavello (2022a).

36 For the list of 'small offer' exemption of each Member State, see ESMA, 'National Thresholds Below Which the Obligation to Publish a Prospectus Does Not Apply' (23 October 2020), https://www.esma.europa.eu/sites/default/files/library/esma31-62-1193_prospectus_thresholds.pdf (as of 23 October 2020, 11 countries have opted for the €8 million threshold, 9 for €5 million and 8 for a lower threshold, between €1 million and €3 million). See also Eugenia Macchiavello, 'What to Expect When You Are Expecting a European Crowdfunding Regulation: The Current "Bermuda Triangle" and Future Scenarios for Marketplace Lending and Investing in Europe' (2019) EBI Working Paper 55 < https://ssrn.com/abstract=3493688 >; Macchiavello (n 12) 569; Staikouras (2020) 1074; Konstantinos Serdaris, 'Behavioural Economic Influences on Primary Market Disclosure – The Case of the EU Regulation on European Crowdfunding Service Providers' (2021) 18 European Company and Financial Law Review 428, 455.

37 There are signs of a trend towards more restrictive 'small offer' exemptions for Fintech-based alternative finance tools: under the Markets in Crypto-Assets Regulation (MiCAR), the maximum value of the threshold for the small offer exemption in the case of crypto-assets other than asset-referenced tokens or e-money tokens has been set at €1 million, and at €5 million in case of asset-referenced tokens. For an early commentary on the MiCAR Proposal: Dirk Zetzsche, et al., 'The Markets in Crypto-Assets regulation (MiCA) and the EU digital finance strategy' (2021) 16 Capital Markets Law Journal 203. On DLT-based crowdfunding, see Filippo Annunziata and Thomaz de Arruda, 'Crowdfunding and DLTs: the Imperative Need for More Clarity', in Macchiavello (ed.), *Regulation*, Ch. 36.

38 The ECSPR does not specify whether the provision refers only to offers by a project owner on a single platform or to all offers available on the market and, therefore, on any platforms, presented by the same project owner. However, the broad, all-inclusive calculation method as well as the rationale (see recital 16) will suggest the second of these alternatives. See Macchiavello (2022a); Staikouras (2020) 1077.

Project owners are not subject here to the licensing principle: while some countries have regarded project owners, especially in case of lending-based crowdfunding, as potentially violating the banking monopoly by receiving repayable funds from the public, Article 1(3) ECSPR prohibits Member States from imposing a banking license or applying banking law to project owners.[39] As discussed below, project owners are required to prepare an information document, but the resemblance to a prospectus (which Moredo Santos identified in his speech as a particular application of the licensing principle) is limited, not least because no approval by the financial authority is required (see below §3.3.).

3.2 Authorisation requirements and procedure. Oversight.

The authorisation of crowdfunding services providers (CSPs) replicates in principle the general model deployed for other regulated activities in the financial sector, in particular that in MiFID II (and PSD2), but it is once again lighter in several respects.[40] The application for authorisation must be submitted to the competent authority in the country where the CSP is established and approval is subject to requirements such as 'fit and proper management' and the suitability of main shareholders, submission of a programme of operations, evidence of governance and internal control systems consistent with their obligations under the ECSPR and business continuity (see Art. 12(2) ECSPR).[41] But in comparison with Delegated Regulation (EU) 2017/1943 and the (available) ECSPR RTS, the requirements are lighter and less detailed.[42] For instance, there is no minimum initial capital requirement (in contrast to Art. 15 MiFID II) and professional insurance is sufficient (as exempted national operators under Art. 3(2) MiFID II or Account Service Information Providers under PSD2). In addition, no organisational requirements are established in relation to product governance. The procedure is also expected to be faster, since the national competent authority must decide on the application within three months (Art. 12(8) ECSPR, as compared to the six month period set in Art. 7(3) MiFID II).[43] In addition, because the ECSPR is a regulation (and not a directive) and considering

39 See Macchiavello (2022a); Macchiavello (2021c) 563; Ella van Kranenburg, 'Outsourcing Under the ECSPR', in Macchiavello (ed.) *Regulation*; Hooghiemstra 2022; Jonneke Van Poelgeest and Marije Louisse, 'The Regulatory Position and Obligations of Project Owner', in Ortolani and Louisse (eds.) *The EU Crowdfunding*, 193.

40 On this topic, see also Macchiavello (2021c) 577ff; Marije Louisse and Adam Pasaribu, 'Authorization and Supervision of Crowdfunding Service Providers', in Ortolani and Louisse, 'The EU Crowdfunding', 139-161, 143ff; Tanja Aschebeck and Lina Engler, 'Authorization Procedure, Scope of Authorisation and Register- Articles 12, 13 & 14', Ch. 13, as well as Francesca Chiarelli, Leonardo Droghini and Raffaele D'Ambrosio, 'Supervision and Reporting Obligations of Crowdfunding Service Providers- Articles 15 & 16', Ch. 14, both in Macchiavello (ed.), *Regulation*.

41 Interestingly, while MiFID II allows investment firms to be natural persons, the ECSPR requires the applicant to be a legal entity (Articles. 2(1)(e) and 3(1) ECSPR). Moreover, the information to be included in the business plan under PSD2/MiFID II and ECSPR differs: Art. 5(1)(b) PSD2 requires information about the first three financial years to demonstrate appropriate and proportionate systems, resources and procedures to operate soundly; Art. 7(2) MiFID II requires applicants to indicate the types of business envisaged and the organisational structure, and they must show that all the necessary arrangements are in place to meet MiFID II obligations; in contrast, the ECSPR, focuses on the types of services, the crowdfunding providers and platform and the marketing strategy (ESMA, 'Draft technical standards under the European crowdfunding service providers for business Regulation', (10 November 2021) ESMA35-42-1183, 85ff): see Aschenbeck and Engler (2022a).

42 Concerning information about the management board: see Louisse and Pasaribu (2021) 144.

43 Louisse and Pasaribu (2021) are sceptical about the ability of national competent authorities to assess crowdfunding applications in such a shorter time, considering that the application documents are similar to those under MiFID II.

the powers assigned to the ESAs and the Commission, the level of harmonisation in CSP procedures and documentation is expected to be higher.[44]

Nonetheless, the list of requirements in Art. 12(2) is quite long since it is specified that the application must also contain a description of the prospective CSP's systems, resources and procedures for the control and safeguarding of the data processing systems, operational risks, outsourcing arrangements, complaint handling procedures, internal rules to prevent the related persons referred to in Article 8(2) from operating on the platform as project owners, procedures to verify the information document prepared by the project owner (see below) and to comply with the investment limits for non-sophisticated investors (see below and Art. 21(7) ECSPR) and evidence of prudential safeguards (see below and Art 11 ECSPR).

The CSP must indicate in the application the crowdfunding services that it will provide and where it will market its services (Art. 12(2)(d) and 13(1) ECSPR).[45] The CSP cannot conduct activities reserved for other regulated providers, unless, where possible, it also obtains the relevant authorisation (for instance, payment services; asset-keeping services; other investment services; Articles 1(2)(b) and 10 ECSPR). Indeed, other regulated providers (such as investment firms and bank) can also obtain the ECSPR license, through a simplified procedure to avoid duplication of documentation (recitals 35 and 55; Art. 12(14) ECSPR).

In any case, the ECSPR sets out to eliminate ambiguity about the prohibition on CSPs providing investment services when these CSPs do not hold any other license , in order to maintain a level-playing field. For instance, recital 21 specifies that the use by CSPs of filtering tools that help investors take investment decisions based on objective factors (e.g. economic sector, type of instruments, risk category, interest rate) does not count as investment advice, provided no recommendation is given and the presentation is neutral in tone. Moreover, in order also to exclude the provision of individual investment portfolio management, the CSP must not exercise any discretion and the investor in transferable securities and admitted instruments must always 'review and expressly take an investment decision in relation to each individual crowdfunding offer' (Art 3(4)). More generally, indirect forms of investment are considered to lie outside the nature and scope of crowdfunding: as mentioned, the use of SPVs is therefore restricted (only in case of an illiquid and indivisible asset) and the deployment of collective investment vehicles is in principle excluded (recitals 19 and 22; Art. 3(6) ECSPR).[46]

Instead, offering investors the opportunity to take their investment decisions based on, among other things, the pricing of offers relating to transferable securities or admitted instruments is allowed, probably as ancillary service, but subject to additional duties of disclosure (e.g. description of methods used) and organisation (e.g. to ensure a fair pricing) (see Articles 4(4), 19(6); recitals 11, 41).[47]

44 See also Aschenbeck and Engler (2022a).

45 It can always extend its activity to other crowdfunding services, through a similar procedure (Art. 13(2)).

46 See Macchiavello (2021c) 570ff; in favour of the use of collective investment arrangements to provide crowdfunding services: Hooghiemstra, (2022); Louisse and Pasaribu (2021) 158-9.

47 See also Federico Ferretti and Francesca Mattassoglio, 'Legal Issues in the Obligations for an Effective and Prudent Management of Crowdfunding Service Providers', in Macchiavello (ed.), Regulation, Ch. 5.

Finally, the ECSPR differentiates between other crowdfunding platforms' services and regulated trading venues: CSPs may 'allow clients who have made investments through its crowdfunding platform to advertise on a bulletin board on its crowdfunding platform their interest in buying or selling loans, transferable securities or admitted instruments for crowdfunding purposes which were originally offered on that crowdfunding platform'. However, the ECSPR specifies that this system should not present the characteristics of a regulated market or MTF, unless the CSP holds also the relative authorisation to manage it, and, therefore, should not consist of an 'internal matching system that executes client orders on a multilateral basis' (Art. 25(2) ECSPR): clients will have therefore to conclude the transaction outside the platform, which reduced the effectiveness of this instrument in increasing market liquidity as hoped, especially for equity shares (highly illiquid). In addition, the Regulation imposes certain duties, in particular of disclosure, to protect investors (e.g. clarity about the nature of the bulletin board, pricing; availability of the original KIIS and warnings to non-sophisticated investors).[48]

In any case, CSPs 'may also engage in activities other than those covered by the authorisation […] in accordance with the relevant applicable Union or national law' (Art. 12(13) ECSPR) to which the ECSPR does not apply (Art. 1(2)(b)), without the restrictions or conditions generally set in case of traditional financial intermediaries (e.g. banks or investment firms), in relation to non-financial ancillary activities (see, for example, Art. 34(1) MiFID II).

Once authorised, CSPs are included in a public register managed by ESMA and can benefit from a EU passport similar in requirements and procedures to the MiFID II passport: however, in recognising the digital nature of crowdfunding platforms, the ECSPR's procedural rules do not differentiate between operation through branches and without physical presence (freedom of services), thereby envisaging a light and smooth procedure in both cases and prohibiting Member States from requiring the CSP to be physically present in another country (Art. 12(12) ECSPR).[49] The passport should cover the crowdfunding services listed in the authorisation and in the passporting communication, preventing Member States from imposing additional requirements, but probably not the additional services provided by the same CSPs under other EU and national laws (which also have to be followed in relation to cross-border provision of services).[50] The cases where authorisation is withdrawn under the ECSPR (Art. 17 ECSPR) are similar to those under MiFID II (Art. 8(a) MiFID II).[51]

48 It is not clear from the ECSPR whether this service should be considered an ancillary service or an additional (unregulated) service that CSPs may provide. For a more detailed discussion: Macchiavello (2022a); Matteo Gargantini, 'Secondary Markets for Crowdfunding: Bulletin Boards', in Macchiavello (ed.), *Regulation*, Ch. 21; Anne Hakvoort, 'Secondary Trading of Crowdfunding Investments', in Pietro Ortolani and Marije Louisse (eds.), *The EU Crowdfunding,* 267, 274ff.

49 See Vittorio Tortorici, 'The EU Passporting System for Crowdfunding Service Providers: Towards a New Type of Passport?- Article 18' and Diego Valiante, 'Foreword', both in Macchiavello (ed.), *Regulation*.

50 See also Louisse and Pasaribu (2021) 147-8.

51 See Tanja Aschebeck and Lina Engler, 'Causes and Procedure of Authorisation Withdrawal- Article 17', in Macchiavello (ed.) *Regulation*, Ch. 15.

The ECSPR harmonises the minimum level of supervisory and investigatory powers as well as the power to impose administrative sanctions that national competent authorities (NCAs) must have (Art. 30 and 39 ECSPR)[52]: the list is again more or less comparable to that in MiFID II (Art. 69-70 MiFID II). Interestingly, the ECSPR does not mention the power to require recordings of conversations or electronic communications, etc. held by the CSP or the power to summon and question a person to obtain information.[53] In any case, the upper limit for administrative fines that can be imposed under the ECSPR are, understandably, lower than under MiFID II.[54]

3.3 Organisational and good conduct requirements. In particular, disclosure duties.

The general organisational requirements imposed on CSPs (Art. 4(1), 3(3) and 9 ECSPR) are inspired by the corresponding requirements in MiFID II (Art. 9(3), 16(5) and 27(2) MiFID II), requiring effective and prudent management, including the segregation of duties in the investment firm, prevention of conflicts of interest, containment of operational risk in outsourcing and prohibition of inducements. However, special requirements apply to CSPs in the event of provision of pricing services (Art. 4(4) ECSPR), relating to debt instruments (or loans, to which additional and more detailed provisions apply).[55] In particular, CSPs must establish, implement and maintain clear and effective policies and procedures to enable a reasonable assessment of the credit risk of offers and project owners based on sufficient information (as specified by the EBA's RTS), as well as price fairness (although this might refer only to loans) and an adequate risk management framework, keeping records of evidence of compliance with these requirements.[56] In relation to clients, they must also disclose the procedures adopted and the methods used to calculate prices (Articles 4(4) and 19(6) ECSPR).

The issue of conflicts of interests is particularly important in crowdfunding, where the platform, whilst providing fundamental information to investors, does not bear the risks and might be remunerated on the basis of volumes rather than performance. This high level of agency risk might be counterbalanced by the reputational risk and the need to maintain an active community of investors, so as to increase investment and the network effects, but, as multi-sided platforms, crowdfunding providers also have the difficult role of acting in the best interest of different types of clients (investors and project

52 See Chapters 14 (by Chiarelli, Droghini and D'Ambrosio), 23 (by A.M. Agresti on Competent Authorities), 24 (by N. de Arriba-Sellier on the relationships between competent authorities), 25 (by G. Pala, M. Lamandini and R. D'Ambrosio on the relationship between ESMA and NCAs), 26 (by N. Badenhoop on professional secrecy), 29 (by K. Serdaris on administrative sanctions and measures), all in Macchiavello (ed), *Regulation*.

53 Louisse and Pasaribu 'The Authorisation', 149-150.

54 For example, generally, €500,000 under the ECSPR, but €5 million under MiFID II. On this topic, see Konstantinos Serdaris, 'Ex Post Enforcement of the EU Crowdfunding Regime: Administrative Sanctions and Measures- Articles 39, 40, 41, 42 & 43', in Macchiavello (ed.), *Regulation*.

55 See Eugenia Macchiavello and A. Sciarrone Alibrandi, 'Marketplace Lending as a New Form of Capital Raising in the Internal Market: True Disintermediation or Re-intermediation?', in Emilios Avgouleas and Heikki Marjosola (eds), *Digital Finance in Europe: Law, Regulation, Governance* (De Gruyter 2021) 37-85; Ferretti and Mattassoglio (2022).

56 CSPs must also have an insurance policy covering damage caused to clients by gross negligence in asset evaluation or credit pricing/scoring.

owners).[57] The general provision on conflicts of interest reflects the corresponding MiFID II rule but particular emphasis is assigned to the proportionality principle. However, in view of the nature of CSPs as 'neutral intermediaries' (recital 22), the ECSPR prohibits CSPs from having any financial participation in the offers (even if this might help align the platform's and investors' interests) or from accepting managers, employees or significant shareholders as project owners on their platform (Art. 8(1)-(2) ECSPR).[58]

The ECSPR also envisages prudential requirements for CSPs based on the model already in use for investment firms (Art. 11). The safeguards relate exclusively to operational risk[59] and consist of CET1 or a professional insurance policy, or a combination of the two, with a value of €25,000 or ¼ of the previous year's overheads, whichever is highest, unless the platform is not already subject to prudential requirements for operational risk. These prudential safeguards are reminiscent of the capital requirement for class 3 firms under the Investment Firms Regulation (IFR 2019/2033) and Directive (IFD 2019/2034) but are set potentially lower, since the latter are based (as an alternative to 25% of fixed overheads) on the minimum capital requirement established for the service provided, where the lowest level is €75,000.[60]

Moving on to good conduct duties, Article 3(2) ECSPR has imposed a general duty of care on CSPs, requiring them to act honestly, fairly and professionally in accordance with the best interests of their clients, which replicates the corresponding Art. 24(1) MiFID II and Art. 12(1)(b) and (f) AIFMD. However, CSPs, as peer-to-peer platforms, have different types of clients (investors and project owners), whose interests are often in conflict, making compliance with this duty more complex for CSPs. On project owners, the ECSPR imposes a general duty of due diligence limited to only criminal records for certain economic crimes and AML violations, whilst they themselves are not directly subject to AML/CT obligations[61] (for example, only if they are also banks or payment institutions): in this respect, therefore, these duties appear lighter than those for other financial intermediaries, classified as obliged entities.[62]

The ECSPR provisions on information to be provided by CSPs to clients (Art. 19 and 27(2) ECSPR)[63] are reminiscent of Art. 24(3) MiFID II on marketing communications but, in contrast to

57 See Macchiavello and Sciarrone Alibrandi (2021) 49, 75-79. For a detailed analysis of Art. 8 ECSPR, see Diogo Pereira Duarte, 'Intermediation Risk and Conflicts of Interest- Article 8', Ch. 9, in Macchiavello (ed.), *Regulation*.

58 In contrast, these categories of people may invest through the platform, provided that they disclose this circumstance and each investment and do not receive any preferential treatment or privileged access to information: see Macchiavello (2021c) 583ff; Pereira Duarte (2022).

59 For instance, the risk of misleading information, breach of legal and regulatory obligations, duty of skill and care towards clients, absence of/defective conflicts of interests procedures, losses from business disruption and system failures, gross negligence in pricing, etc. (see Art. 11(7) as regards the requirements for insurance coverage).

60 Macchiavello (2021a) 298; Macchiavello (2021c) 586; Marije Louisse, 'Due Diligence of Project Owners', in E. Macchiavello, *Regulation*, ch. 6.

61 Art. 45 assigns to the Commission the task of assessing the need and proportionality of subjecting CSPs to the duties established under the AML Directive, adding CSPs to the list of obliged entities: see Eugenia Macchiavello, 'The Commission's Interim Report and Prospective Adaptations of the ECSPR- Article 45', in Macchiavello (ed.), *Regulation*, Ch. 31.

62 See also Louisse(2022). Only recital 18 refers in general to the need for CSPs to exercise an adequate level of due diligence in the selection of projects, so as to protect investors.

63 For example, information about the CSP, financial risks and other risks and costs of the crowdfunding service (*cf*. Art. 24(4)-(5) MiFID II); before entering into a transaction; in a clear, fair and not misleading way (*cf*. Art. 23(4) MiFID II).

these, are complemented by the detailed provisions of a delegated regulation.[64] In addition, the ECSPR features a requirement to warn clients about risks and the lack of traditional protections (for examples, the absence of deposit insurance or investor compensation schemes, appropriateness test, etc.). Also interesting is the specific importance assigned to the disclosure of the selection criteria for project owners, identified by the ECSPR as of primary importance for investors, and designed to limit investors' complete reliance on the platforms' screening.

As already mentioned, the main informative document is prepared by the project owner (without the collaboration of an 'offeror', 'guarantor' or any other entity responsible for their respective parts) and this is not comparable with a prospectus. Its simple style, short length and non-technical language puts it closer to a prospectus summary or a PRIIPs KID.[65] In addition, no authority has a mandate to check it and the ECSPR prohibits national competent authorities from imposing such requirement (Art. 23(14) ECSPR).[66] Interestingly, however, the CSP must have adequate procedures for verifying the completeness, clarity and correctness of the information contained in the Key Investment Information Sheet, or KIIS (Art. 23(11) ECSPR). Although it will depend on the EU[67] or national interpretation of the provision, in particular of the notion of 'correctness' and the relevant national liability regimes, the platform might take on the role of private gatekeeper and supervisor, as a lower cost substitute for the public authority.[68]

Lastly, the ECSPR has recognised special investor protection measures for the new category of 'non-sophisticated' investors. This category is residual, corresponding to investors other than professional investors or other types of 'sophisticated investors'. The first of these is borrowed from MiFID II, whilst the second corresponds to any natural or legal person requesting to be treated as such and

64 Catalina Goanta, Marije Louisse and Pietro Ortolani, 'Marketing Communications and the Digital Single Market', in Ortolani and Louisse (eds.), *The EU Crowdfunding*, 293; Tommaso Martini Varvesi and Vittorio Tortorici, 'The New European Rules on Advertising Crowdfunding Campaigns Between Proportionality and Customer Protection- Articles 27 & 28', in Macchiavello (ed.), *Regulation*, Ch. 22.

65 The KIIS can in fact substitute the PRIIPs KID (Art. 23(15) ECSPR) where the latter is required. Authors gave stressed that this is only the case when the crowdfunding operation entails securitisation (see Martin Ebers and Benedikt M. Quarch, 'EU Consumer law and the boundaries of the crowdfunding regulation, in Ortolani and Louisse (eds.), *The EU Crowdfunding*, 83-112, 108) or an alternative investment fund (Van Poelgeest and Louisse (2021) 199).

66 On Art. 23 see Van Poelgeest and Louisse (2021), 200-201; Karsten Wenzlaff, et al., 'On the Merits of Disclosure Requirements in the ECSP Regulation- Article 23 & 24 (& Annex I)', in Macchiavello (ed.), *Regulation*, Ch. 20.

67 From the discussions during the trilateral negotiations, 'correctness' seemed initially to refer to the absence of evident mistakes in filling in the form (e.g. not inserting the information in the correct box), but see ESMA's Q&A on the ECSPR: 'The CSP maintains the responsibility to have adequate procedures in place to identify cases where inaccurate or misleading information may be provided by the project owner and to take appropriate action' (ESMA, 'Questions and Answers on the European Crowdfunding Services Providers for Business Regulation', 20 May 2022, ESMA35-42-1088). This might be interpreted as an obligation simply to adopt adequate measures, in abstract terms, or else, to ensure that the information is correct. On this topic see Macchiavello (2021c) 588; Wenzlaff et al. (2022); Eugenia Macchiavello, 'The Challenges Awaiting the European Crowdfunding Services Providers Regulation: Ready for Launch?' (2022), forthcoming, in Nordic Journal of Commercial Law.

68 For discussion of crowdfunding platforms as gatekeepers: Macchiavello and Sciarrone Alibrandi (2021); Macchiavello (2021c) 593; Macchiavello (2021a) 303; Joseph Lee, 'Investor Protection on Crowdfunding Platforms' in Ortolani and Louisse (eds.), *The EU Crowdfunding*, 263-264.

presenting certain characteristics.[69] The criteria for classification as a professional investor upon request under MiFID II[70] and as a sophisticated investor under the ECSPR, as well as the respective procedures, differ in several respects.[71] As regards the procedure, for instance, investment firms enjoy greater discretion in assessing whether the investor possesses the required characteristics, while the CSP must approve the investor's request unless there are reasonable doubts as to the correctness of the data. Under the CMU Action plan and in the course of the MiFID II review, the Commission is considering whether to introduce a similar new category of investor, relevant also for disclosure obligations under PRIIPS.[72]

The protective measures applicable only to non-sophisticated investors include the 'entry-knowledge test' (Art. 21(1)-(4) ECSPR), to be taken before allowing non-sophisticated investors to access offers, resembles the appropriateness test (assessment of knowledge, skills and experience; if failed, the client is issued with a warning which must be acknowledged) but is not service/product-specific and is performed at an earlier stage.[73] Curiously, the ECSPR also requires CSPs to collect information about their clients' financial situation and investment objectives, as for the suitability test (which under MiFID II is limited to portfolio management and investment advice services), but, in contrast, does not expressly include these aspects in the entry-knowledge test assessment and, if that test is failed, simply requires the CSP to issue a warning, not to prevent the investment. ESMA's RTSs simply specify that CSPs must request information about the investor's holding period, risk profile and sustainability preferences and purposes only 'where relevant in relation to the type of crowdfunding services offered', therefore probably with reference to more complex services such as individual portfolio management of loans. Other differences relate to the personal scope of the test and timing.[74] More generally, all information must be collected 'to the extent appropriate to the nature, scale and complexity of the crowdfunding service to be provided and the type of investment envis-

69 Individuals or entities requesting to be treated as sophisticated investors must declare they are aware of the consequences of their being classified as such and meet the following requirements: 1) legal entities meeting one of the following conditions: *a)* at least €100,000 own funds; *b)* turnover of at least €2 million; *c)* balance sheet of at least €1 million; 2) natural persons meeting at least two of the following conditions: *a)* personal gross income of at least €60,000 or a financial instrument portfolio (including cash deposits and financial assets) exceeding €100,000; *b)* professional experience in the financial sector in a position requiring knowledge of the transactions or of the services envisaged or an executive position in the legal entities listed under 1) for at least 12 months; *c)* operations of significant size on the capital markets, at an average frequency of 10 per quarter, over the previous four quarters. ECSPs must take reasonable steps to ensure that investors effectively meet these requirements but may approve the request unless they have reasonable doubts as to whether the information provided is correct (see annex II).

70 For example, the same conditions for natural and legal persons; investment portfolio threshold of €500,000 (higher).

71 Specifically and extensively on this topic: Joeri De Smet and Veerle Colaert, 'Between Investor Protection and Access to Crowdfunding: the Entry Knowledge Test and the Simulation of the Ability to Bear Loss- Article 21 (& Annex II)' in Macchiavello (ed.), *Regulation*; see also Lee 'Investor Protection', ch. 18,251-252.

72 See Macchiavello, 'The Scope'.

73 On this topic, see Macchiavello (2021a) 303 and (2021c) 591-92; De Smet and Colaert (2022).

74 For instance, investment firms are in principle also required to perform the appropriateness test in respect of professional investors, but they can actually assume that such investors have the necessary knowledge and experience (Art. 56(1) MiFID II). Furthermore, the entry-knowledge test must be repeated every two years and the loss simulation every year, while MiFID II does not specify any set timing for the appropriateness/suitability test (some events may trigger it). See again the detailed comparison in De Smet and Colaert, 'Between Investor Protection'.

aged', suggesting flexible and lighter requirements compared to MiFID II services, which are subject to primary and secondary provisions which are detailed and varied (based on the type of service), as well as to guidelines.[75]

The information relating to the investor's financial situation might be in any case useful for another investor protection measure, the (online) simulation of losses, designed to assess whether the investor would be able to withstand a loss corresponding to 10% of his/her net worth (Art. 21(5)-(6) ECSPR). This might partially resemble a suitability test, but it is more abstract, does not relate to investment objectives and a negative result does not preclude the investment, requiring only an acknowledgement from the client.[76]

In addition, a warning must be provided to non-sophisticated investors in the case of an investment above €1,000 or 5% of his/her net worth, and these investors must expressly agree. This protection appears to draw inspiration from Art. 30(3) of the ELTIF Regulation, which requires ELTIF managers to verify that retail investors do not invest more than 10% of their financial instrument portfolio, but can commit at least €10,000. However, an investment above the threshold requires only a warning and express consent from the investor under the ECSPR, whereas under the ELTIF Regulation the transaction is blocked.[77]

Lastly, non-sophisticated investors enjoy a reflection period of four day and must be informed by ECSPs about this right (Arts. 21(7) and 22 ECSPR).

An interesting final area where the ECSPR and MiFID II (or other provisions regulating traditional finance) diverge is in sustainability requirements. While the EU Action Plan on Sustainable Growth[78] has gradually assigned relevance to sustainability risks, factors and investor preferences in EU financial regulation (including MiFID II, AIFM, etc.), the ECSPR does not introduce any particular disclosure or organisational requirements in this regard (not even in the case of loans portfolio management).[79] However, Article 45(2)(s) assigns to the Commission the task of assessing whether to introduce specific measures to the ECSPs Regulation to promote sustainable and innovative crowdfunding projects, also through the use of Union funds. This expression seems to suggest the introduction of softer requirements for CSPs in the area of sustainable finance, although a future

75 See Article 25, paras. 2 and 3 MiFID II; Articles 54-58 MiFID II Delegated Regulation No. 2017/565; ESMA Guidelines on certain aspects of the MiFID II appropriateness and execution-only requirements, (2022) ESMA 35-43-2938.

76 For a partially different interpretation: Lee, 'Investor Protection', 256ff.

77 De Smet and Colaert, 'Between Investor Protection'.

78 European Commission, 'Action Plan: Financing Sustainable Growth', (Communication, 8 March 2018) COM/2018/097 final,.

79 On green crowdfunding and respective references, as well as a discussion of the compatibility of the ECSPR with the green crowdfunding market, please see: Macchiavello (2022b); Macchiavello (2022d); Eugenia Macchiavello, 'Sustainable Finance and Fintech. A Focus on Capital Raising', forthcoming in M. Siri, M. Gargantini and K. Alexander (eds.), *The Cambridge Handbook of EU Sustainable Finance. Regulation, Supervision and Governance* (Cambridge University Press 2023); Eugenia Macchiavello and Michele Siri, 'Sustainable Finance and Fintech: Can Technology Contribute To Achieving Environmental Goals? A Preliminary Assessment of "Green Fintech" and "Sustainable Digital Finance"' (2022) 19 European Company and Financial Law Review 128.

alignment of CSPs with the traditional duties of intermediaries in the area of sustainability cannot be excluded per se. Assigning relevance to sustainability in the ECSPR will require a difficult balance: while requirements similar to those for traditional providers would reduce greenwashing and promote a level-playing field, this might also entail excessive costs for all the parties involved, although other emerging technology-based solutions might help with that.

4. Concluding remarks

Investment-based crowdfunding service providers carry on a business akin to but not entirely the same as investment services and the regulated activities of investment intermediaries. Seeking also to overcome differences in treatment at national level, the ESCPR has chosen to extend the licensing principle to crowdfunding platforms, but by introducing a new and lighter form of license (compared to licensing under MiFID II, for instance), although inspired by existing regulatory rules, in particular, those in MiFID II (e.g. authorisation, general duties of good conduct, conflict-of-interest policy). These simplified requirements, justified also by the fact that these platforms and public confidence in them are systemically less important, are counterbalanced by restrictions on the activities permitted, products and the size of offerings. In addition, certain new and special provisions seek to address special features of crowdfunding (see investment thresholds; the professional insurance cover required; duty of diligence with regard to project owners' criminal and anti-money laundering profile; KIIS prepared by project owners but double-checked by platforms). The aim is to facilitate crowdfunding and therefore the financing of SMEs, without endangering investor protection or the level-playing field.

For instance, the ECSPR allows some protections to be lifted in the case of professional and sophisticated investors, thereby reducing costs. However, the difficult balance between all these interests has sometimes led to hybrid solutions, not necessarily justifiable. By way of example, the combination of the entry-knowledge test and simulation of losses (which entails collecting data, including about the investor's financial situation and investment objectives) seeks to increase protection for non-sophisticated investors, while containing costs. However, it has yet to be seen whether this outcome will be achieved: to apply the same good conduct requirements in this regard irrespective of the type of service (if this turns out to be the prevailing interpretation) is not only inconsistent with MiFID II (which distinguishes between executive services and advice/portfolio management) but might also not be effective in protecting investors or limiting costs: indeed, the consequence of a negative result is limited to warnings, while the amount of information to be collected is disproportionately large.

The organisational and prudential requirements are greater than in the Commission's original proposal, reflecting the increased attention post-crisis to the risks posed by shadow banking and intermediaries other than banks and investment firms (see also increased requirements for payment service providers under PSD2). Moreover, to offer clients the pricing of instruments is perceived as riskier, also from the perspective of agency risk, triggering increased requirements (especially in the case of loans), as happened in the past with the regulation of credit rating agencies.

Crowdfunding platforms are regarded by the ECSPR as gatekeepers, often substituting the public authority in order to lower supervisory costs (see the controls over the KIIS) but, at least as regards investment-based crowdfunding, a step below other regulated financial intermediaries, which, in any case, can benefit from the presence of traditional safeguards (e.g. investor compensation, access to credit bureaux), public support and, therefore higher investor trust. However, their exact position and role as gatekeepers will also depend on the future interpretation of the new Regulation as well as on certain national discretions, including in terms of civil liability.

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The Licensing Principle and Innovation in Payments

by Rita Pinto Bairros [1]

Abstract

This paper presents a number of aspects related to innovation in payments in the context of the legal framework proposed by the Payment Services Directive recast (PSD2), taking into account that the licensing principle still applies in a context of digitalisation of financial services. It is structured in seven sections:

The first contains general remarks on payment systems - they are seen as 'the plumbing' through which payment transactions flow, enabling the execution of payment services in a smooth manner. The second presents the European Legal Framework for the provision of payment services, of which the PSD2 is the centre-piece. The third section focuses on two of the major innovations in PSD2: two new payment services and enhanced security in payments. The forth section discusses the authorisation of payment service providers under the current legal framework, showing that even less complex payment services (account information services) require registration with the national competent authority.

The last three sections relate to open banking and open finance and the new business models that have emerged since PSD2 was published in 2015.

Keywords: payment systems, innovation in payments, payment service providers, account information services, payment initiation services, PSD2, Open Banking, Open Finance.

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1. Payment systems – General remarks

As defined in the Principles for Financial Market Infrastructures (PFMI), issued by the Bank for International Settlements (BIS) and by the International Organization of Securities Commissions (IOSCO)[2], payment systems are a set of instruments, procedures, and rules for the transfer of funds between or among participants. They are typically based on an agreement between or among participants and the operator of the arrangement, and the transfer of funds is effected using an agreed-upon operational infrastructure[3].

Payment systems are usually categorised as either a retail payment system or a large-value payment system (LVPS). A retail payment system is a funds transfer system that typically handles a large volume of relatively low-value payments. Retail payment systems may be operated by either the private sector or the public sector. An LVPS is a funds transfer system that typically handles large-value and high-priority payments. In contrast to retail systems, many LVPSs are operated by central banks, using a real-time gross settlement (RTGS) or equivalent mechanism.

In Portugal, SICOI (interbank clearing system) is the retail payment system managed and regulated by Banco de Portugal[4]. This system processes and clears retail payments made with cheques, bills of exchange, direct debits, credit transfers, instant transfers and payment cards. The computed balances are then sent for settlement in TARGET2 together with transactions of higher value that are also settled on an individual basis using TARGET2. TARGET2 (Trans-European Automated Real-time Gross Settlement Express Transfer System) is the second generation of the Eurosystem's RTGS system, where large-value euro-denominated payment orders are processed and settled against central bank money[5]. Banco de Portugal operates the Portuguese component of TARGET2, TARGET2-PT[6].

Smooth operation of SICOI is instrumental to the stability and efficiency of the Portuguese financial system and economy. TARGET2, in turn, is intended to support: (i) implementation of the Eurosystem's monetary policy and the interbank money market in euros; (ii) reduction of systemic risk and; (iii) greater efficiency in cross-border payments in the European Union (EU).

The BIS has recently found that 'central banks play a pivotal role in maintaining the safety and integrity of the payment system. They provide the solid foundation by acting as guardians of the

2 See Bank for International Settlements & International Organisation of Securities Commissions, 'Principles for Financial Market Infrastructures' (BIS & IOSCO, 2012) https://www.bis.org/cpmi/publ/d101a.pdf.

3 ibid 8.

4 See Banco de Portugal, Instruction no 8/2018, of 22 March, available at https://www.bportugal.pt/instrucao/82018 (only in Portuguese).

5 In November 2022, the Eurosystem will launch a new RTGS system that will offer enhanced and modernised services to the market and will replace TARGET2.

6 Regulated by Instruction no. 54/2012, of 15 January 2013, available at https://www.bportugal.pt/instrucao/542012-0 (only in Portuguese).

stability of money and payments. The pandemic and resulting strain on economic activity around the world have confirmed the importance of central banks in payments'[7].

Indeed, payment systems stand at the core of all modern economic and financial systems, with a central bank generally responsible for maintaining monetary stability and financial stability in order to underpin wider economic objectives[8].

2. European Legal Framework for the provision of payment services

While payment systems allow for the smooth execution of payments, a solid and sound legal framework for the provision of payment services enables all stakeholders to engage in the payment market with confidence.

In Europe, it was not until 2007, with the publication of the first Payment Services Directive (PSD1)[9], that a common legal framework was enacted for the provision of payment services that allowed for the creation of a more efficient and integrated market for payment services in the EU. Not only did PSD1 establish the same set of rules on payments across the whole European Economic Area (EEA), covering all types of electronic and non-cash payments (in a 'one-size-fits-all' approach[10]), but it also created a new type of payment service providers alongside banks – payment institutions, designed to increase competition and choice for consumers.

In Portugal, PSD1 was transposed into national law in 2009 by the first Legal Framework for Payment Services[11], later amended and renamed to include provisions regarding the issuance and distribution of e-money, when it became the 'Legal Framework for Payment Services and Electronic Money'[12].

7 See Bank for International Settlements, 'Central Banks and payments in the digital era' (June 2020) https://www.bis.org/publ/arpdf/ar2020e3.pdf.

8 Anton Didenko, Dirk Zetzsche, Douglas Arner and Ross Buckley, 'After Libra, Digital Yuan and COVID-19: Central Bank Digital Currencies and the New World of Money and Payment Systems' (June 1, 2020) European Banking Institute Working Paper Series 65/2020, University of Hong Kong Faculty of Law Research Paper No. 2020/036, UNSW Law Research Paper No. 20-59, https://ssrn.com/abstract=3622311, 6.

9 Directive 2007/64/EC of the European Parliament and of the Council, of 13 November 2007, on payment services in the internal market, amending Directives 97/7/EC, 2002/65/EC, 2005/60/EC and 2006/48/EC and repealing Directive 97/5/EC [2007] OJ L 319/1 https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32007L0064&from=EN.

10 Ruth Wandhöfer, *EU Payments Integration. The tale of SEPA, PSD and other milestones along the road* (Palgrave Macmillan, 2010) 90.

11 See Decree-Law no 317/2009, of 30 October, published in 'Diário da República n.º 211/2009, Série I' https://dre.pt/dre/detalhe/decreto-lei/317-2009-483411.

12 See Decree-Law 242/2012, of 7 November, amending Decree-Law 317/2009, of 30 October, published in 'Diário da República n.º 215/2012, Série I' https://dre.pt/dre/detalhe/decreto-lei/242-2012-191534. This Decree-Law transposed the Second E-Money Directive – Directive 2009/110/EC of the European Parliament and of the Council, of 16 September 2009, on the taking up, pursuit and prudential supervision of the business of electronic money institutions amending Directives 2005/60/EC and 2006/48/EC and repealing Directive 2000/46/EC [2009] OJ L 267/7 https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32009L0110.

Since the publication of PSD1, however, the ecosystem of payments had evolved and new players with new business models had started offering their services in the EU. The co-legislators thus felt the need to update the legal framework to improve the existing rules and take into account new digital payment services that fell outside the regulatory scope.

In 2015, the EU adopted a new directive on payment services (PSD2)[13]. The directive became applicable in January 2018 and aims to create a true single market in payment services, enhancing security and efficiency and fostering innovation and competition by: i) introducing new payment services; ii) creating requirements of strong customer authentication to be applied by Payment Service Providers (PSPs); and iii) enhancing the protection of Payment Service Users.

PSD2 was transposed into Portuguese law by Decree-Law 91/2018, of 12 November[14], which approved the new Legal Framework for Payment Services and Electronic Money (RJSPME, the Portuguese acronym for Regime Jurídico dos Serviços de Pagamento e da Moeda Eletrónica). The RJSPME became the central component for the provision of payment services in Portugal.

3. New payment services and enhanced security in payments

PSD2 applies to payment services provided within the Union but (like PSD1) does not contain a definition of 'payment services'. Article 4(3) pf PSD2 states that 'payment service' means any business activity set out in Annex I, which, in turn presents the interpreter with a list of activities which includes services such as those enabling cash to be placed or withdrawn on/from a payment account or the execution of payment transactions[15].

The innovation in PSD2 lies, however, not in the regime applicable to 'traditional' payment services but in the inclusion of two new payment services: payment initiation services and account information services.

Payment initiation services (PIS) enable the initiation of a payment order at the request of the payment service user with respect to a payment account held at another PSP[16]. Also, providers of payment initiation services can confirm to a payee that the payment has been initiated in order to provide an incentive to the payee to release the goods or to deliver the service without undue delay. These are seen as useful services for both merchants and consumers, especially if consumers do not possess payment cards.

13 See Directive (EU) 2015/2366 of the European Parliament and of the Council of 25 November 2015 on payment services in the internal market, amending Directives 2002/65/EC, 2009/110/EC and 2013/36/EU and Regulation (EU) No 1093/2010, and repealing Directive 2007/64/EC [2015] OJ L 337/35 https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32015L2366&from=EN.

14 Published in 'Diário da República n.º 217/2018, Série I' https://dre.pt/dre/detalhe/decreto-lei/91-2018-116936932.

15 See Annex I of PSD2 for the complete list of payment services.

16 See Article 4, para. 15 PSD2

In turn, account information services (AIS) are online services that provide consolidated information on one or more payment accounts held by the payment service user either with another PSP or with more than one PSP[17]. These services provide the payment service user with aggregated online information on one or more payment accounts held with one or more other PSPs and with an overall view of its financial situation using, for instance, a single app.

These were services already provided by numerous players in the EU that directly or indirectly accessed payments accounts in order to provide their services to users, but they were not regulated. This posed numerous risks, in particular regarding consumer protection, liability for the execution of payment transactions and data protection.

By regulating these innovative payment services, PSD2 creates an obligation for account servicing payment service providers – those PSPs that provide and maintain a payment account for a payer – to share their account data with third parties so that they can provide their services with the consent of the account holder but without being required by the account servicing payment service provider to use a particular business model, whether based on direct or indirect access, for the provision of those types of services[18].

Nonetheless, it is important to note that PSD2 imposes strict security requirements for the execution of payment transactions and that all PSPs involved need to comply not only with the requirements of PSD2 but also with the rules set out by regulatory technical standards developed by the European Banking Authority (EBA) on strong customer authentication and common and secure communication[19]. This ensures both enhanced user protection and more secure communication between the relevant actors in the context of those innovative services.

The security of electronic payments, especially when access to account data is involved, is of the utmost importance in the context of regulated provision of payment services. PSD2 states that PSPs must apply strong customer authentication where the payer (a) accesses its payment account online; (b) initiates an electronic payment transaction; or (c) carries out any action through a remote channel, which may imply a risk of payment fraud or other abuses. In addition, for electronic remote payment transactions, PSPs must apply strong customer authentication that includes elements that dynamically link the transaction to a specific amount and a specific payee[20].

Where PSPs apply strong customer authentication in accordance with Article 97(1) of PSD2, the authentication must be based on two or more elements which are categorised as knowledge (something only the user knows, e.g. a password), possession (something only the user possesses,

17 See Article 4, para. 16) PSD2.

18 See Recital 93 PSD2.

19 See Commission Delegated Regulation (EU) 2018/389 of 27 November 2017 supplementing Directive (EU) 2015/2366 of the European Parliament and of the Council with regard to regulatory technical standards for strong customer authentication and common and secure open standards of communication [2018] OJ L 69/23 https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32018R0389&from=EN.

20 See Article 97 PSD2.

e.g. a payment card, a mobile phone) and inherence (e.g. something only the user is, e.g. fingerprint, face recognition) and must result in the generation of an authentication code.

On common and secure communication between all players, the above-mentioned regulatory technical standards state that each account servicing payment service provider with payment accounts that are accessible online must offer at least one access interface enabling secure communication with account information service providers and payment initiation service providers. To ensure technology and business-model neutrality, the account servicing payment service providers should be free to decide whether to offer an interface that is dedicated to communication with account information service providers and payment initiation service providers (usually, via an Application Programming Interface – API), or to allow, for that communication, the use of the interface for the identification and communication with the account servicing payment service providers' payment service users.

Third party payment service providers (TPPs) - as account information service providers and payment initiation service providers are collectively referred to - must identify themselves to the account servicing payment service provider and qualified certificates for electronic seals or for website authentication compliant with the eIDAS Regulation[21], must be used to mitigate, for instance, the risk of identity theft and misuse of information.

4. Authorisation of payment service providers

In 1999, in the opening words of his lecture 'Licensing banks: still necessary?', Tommaso Padoa-Shioppa said 'Financial and technological innovation is fostering competition in the supply of services once provided only by banks. Both facts and ideas are moving towards an erosion, if not an abandonment, of the "licensing principle". The entry of new players in the business of supplying bank-like products and the increasing reliance on electronic channels for their distribution is challenging the belief that strict controls over entry into the banking business is really necessary'[22].

More than twenty years later, and in a digital-intensive reality, experience shows that this discussion of striking the right balance between not hindering innovation – especially in payments - and the relevance of a sound supervision of financial institutions is pertinent and up-to-date.

While being completely disruptive - since the provision of account information and payment initiation services implies that a third party is involved in what was previously a bilateral relation-

21 See Regulation (EU) 910/2014 of the European Parliament and of the Council of 23 July 2014 on electronic identification and trust services for electronic transactions in the internal market and repealing Directive 1999/93/EC [2014] OJ L 257/73 https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32014R0910&from=EN.

22 See Tommaso Padoa-Shioppa, 'Licensing banks: still necessary?', Lecture in Washington D.C., 24 September 1999, https://www.ecb.europa.eu/press/key/date/1999/html/sp990924_1.en.html.

ship between payment service users and their PSPs – providers of such services must be authorised/registered PSPs and face the scrutiny of National Competent Authorities in the EU.

Banco de Portugal is the National Competent Authority designated to ensure and monitor effective compliance with PSD2 in Portugal, and is also the competent authority responsible for authorisation and prudential and conduct supervision of payment institutions, electronic-money institutions and account information service providers[23].

Under the principle of exclusivity, only licensed PSPs can provide payment services in Portugal, even if their head office is not in Portugal but they provide services in the country under the right of establishment or the freedom to provide services[24].

Credit institutions have a general license to provide all payment services mentioned in the RJSPME – they do not need to apply for a special license for this purpose. Electronic money institutions are authorised to issue electronic money and can provide all types of payment services. Payment institutions, in turn, can only provide payment services[25]. All of the PSPs mentioned are subject to an authorisation procedure with the central bank.

In this context, it is important to note that different prudential regimes apply to different types of PSPs and differ according to the payment services that those PSPs provide. Under Articles 49 and 55 of the RJSPME: where a payment institution provides only money remittance services, its capital must at no time be less than €20,000, and where a payment institution provides payment initiation services, its capital must at no time be less than €50,000. Where a payment institution provides any of the other payment services mentioned in the RJSPME, its capital must at no time be less than €125,000. As for electronic money institutions, at the time of authorisation and at all times, they must have share capital of no less than €350,000.

Since they do not enter into possession of funds and they do not engage in the execution of payment transactions, account information services providers are regarded as posing less risk and are therefore required to go through a simpler registration procedure; they do not need to go through an authorisation procedure and they do not need to have share capital at the time of registration[26]. They must, however, have professional indemnity insurance, covering the territories in which they offer services, or some other comparable guarantee against their liability vis-à-vis the ac-

23 As per Article 7 of RJSPME. Banco de Portugal is also responsible for the authorisation of credit institutions, under the Legal Framework of Credit Institutions and Financial Companies, consolidated version available at https://www.bportugal.pt/sites/default/files/anexos/legislacoes/rgicsf_en.pdf.

24 See Article 11 of RJSPME.

25 For the specific characteristics of the business activity and services that each category of institution may provide, see Title II, Chapter I of RJSPME.

26 In accordance with Article 11(2) of the RJSPME, 'natural or legal persons exclusively providing the payment service referred to in Article 4(h) shall be treated as payment institutions'.

count servicing payment service provider or the payment service user resulting from non-authorised or fraudulent access to or non-authorised or fraudulent use of payment account information[27] [28].

In Portugal, apart from those PSPs that provide their services under the right of establishment and the freedom to provide services[29], payment initiation services and account information services are mostly provided by banks, which do not need a special license to provide these services. So far, no payment initiation service provider or account information service provider has been authorised/registered by Banco de Portugal. Nevertheless, there are two Portuguese electronic-money institutions currently authorised to provide their services in Portugal and thirteen payment institutions[30].

The RJSPME regulates the authorisation and registration of payment institutions and electronic money institutions. It stipulates the authorisation and general requirements applicable to payment institutions and electronic money institutions that have their head office in Portugal and the application procedure to be followed[31].

When compared to their previous versions, it is interesting to note that the current versions of PSD2 and of RJSPME include a number of authorisation requirements that stem from the scenario where PSPs are very much engaged in online provision of services, with several players having access to data, such as a description of the procedure in place to monitor, handle and follow up a security incident; a description of the process in place to file, monitor, track and restrict access to sensitive payment data; or, for instance, a description of security control and mitigation measures taken to adequately protect payment service users against the risks identified, including fraud and illegal use of sensitive and personal data[32].

In addition to PSD2 (and the RJSPME in Portugal), for the purposes of authorisation of payment institutions and electronic money institutions and the registration of account information service providers, EU NCAs have to take into account the EBA Guidelines on this matter[33]. They must also notify the EBA of the information entered in their public registers, which enables the EBA to keep

27 See Article 22(3) of the RJSPME and Ministerial Order (*Portaria*) 238/2019, of 30 July, https://files.dre.pt/1s/2019/07/14400/0005200058.pdf.

28 As a pre-condition for authorisation, payment initiation service providers must also have professional indemnity insurance, covering the territories in which they offer services, or some other comparable guarantee against liability to ensure that they can cover their liabilities. See Article 19, para 6 of the RJSPME and Ministerial Order (*Portaria*) 238/2019, of 30 July, https://files.dre.pt/1s/2019/07/14400/0005200058.pdf.

29 These are the vast majority of non-bank PSPs providing their services in Portugal. By way of anecdotal evidence, there are currently 282 payment institutions with head-office in another EU country providing their services in Portugal under the freedom to provide services. Information available at https://www.bportugal.pt/entidades-autorizadas.

30 Information available at https://www.bportugal.pt/entidades-autorizadas.

31 See Articles 18 and 19 RJSPME.

32 See Article 19 RJSPME and Article 5 PSD2.

33 European Banking Authority, 'EBA Guidelines under Directive (EU) 2015/2366 (PSD2) on the information to be provided for the authorisation of payment institutions and e-money institutions and for the registration of account information service providers'(EBA/GL/2017/09, 11 July 2017) https://www.eba.europa.eu/sites/default/documents/files/documents/10180/1904583/f0e94433-f59b-4c24-9cec-2d6a2277b62c/Final%20Guidelines%20on%20Authorisations%20of%20Payment%20Institutions%20%28EBA-GL-2017-09%29.pdf?retry=1.

the Register of payment and electronic money institutions under PSD2 with information regarding payment and electronic money institutions authorised or registered within the EU and the EEA[34].

Two important PSD2 license-related provisions deal with access to payment systems and access to accounts.

Article 35 of PSD2[35], on access to payment systems, states that the rules on access of authorised or registered PSPs that are legal persons to payment systems must be objective, non-discriminatory and proportionate and that they must not inhibit access more than is necessary to safeguard against specific risks such as settlement risk, operational risk and business risk and to protect the financial and operational stability of the payment system.

However, this non-discrimination rule does not apply to designated systems under the Settlement Finality Directive (SFD)[36] whereby only credit institutions are allowed to participate in payment systems. The SFD sets out to reduce the systemic risk associated with participation in payment and securities settlement systems, and in particular, the risk linked to insolvency of a participant in such a system.

The SFD regulates designated systems used by participants to transfer financial instruments and payments. It ensures that transfer orders that enter these systems are finally settled, regardless of whether the sending participant has become insolvent or transfer orders have been revoked in the meantime.

In Portugal, the SFD was transposed into national law, as regards payments systems, in a way that allows, within the limits of the Directive, institutions other than credit institutions, such as payment institutions and electronic-money institutions, to participate indirectly in designated systems[37].

SICOI – the Portuguese interbank retail payment system, designated under the SFD[38] – allows for indirect participation by payment institutions and electronic money institutions, thereby reducing the existing unlevel playing field amongst different types of PSPs in access to payment systems. Even so, this indirect participation is only available through a direct participant, namely a credit institution.

34 See Register of payment and electronic money institutions under PSD2 | European Banking Authority (europa.eu). The register is established based on the requirement of Article 15(1) of PSD2 as well as the supplementary rules of Commission Implementing Regulation (EU) 2019/410 and Commission Delegated Regulation (EU) 2019/411 of 29 November 2018, which are based on the Regulatory Technical Standards and Implementing Technical Standards on the EBA Register under PSD2, published by the EBA in December 2017. L 166/45

35 Cfr. Article 68 of RJSPME.

36 See Directive 98/26/EC of the European Parliament and of the Council of 19 May 1998 on settlement finality in payment and securities settlement systems [1998] OJ L 166/45, consolidated version: https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:01998L0026-20190627&from=EN.

37 See Decree-Law no 221/2000, of 9 September, published in Diário da República no 209/2000, Série I-A of 2000-09-09, 4783 – 4785, available at https://dre.pt/dre/detalhe/decreto-lei/221-2000-577713. Consolidated version available at https://www.bportugal.pt/sites/default/files/anexos/legislacoes/254325916_1.doc.pdf.

38 See Notice no 3/2009, of 27 July, published in 'Diário da República n.º 143/2009, Série II Parte E' of 2009-07-27, 29747 – 29748, available at https://dre.pt/dre/detalhe/aviso-banco-portugal/3-2009-3516249.

On this topic, Article 35 of PSD2 again calls for non-discrimination by stating that where a participant in a designated system allows an authorised or registered PSP that is not a participant in the system to pass transfer orders through the system that participant shall, when requested, give the same opportunity in an objective, proportionate and non-discriminatory manner to other authorised or registered payment service providers. This is to say that if a bank allows another bank to pass transfer orders through the system, then it may not simply reject a payment institution intending to do the same[39].

In any case, it could be argued that an amendment to the SFD should be introduced to recognise payment institutions and electronic-money institutions as PSPs in their own right, able to access payment systems without having to resort to their competitors (i.e. banks).

Article 36 of PSD2[40], in turn, relates to access to accounts maintained with a credit institution and states that payment institutions should have access to credit institutions' payment accounts services on an objective, non-discriminatory and proportionate basis. Such access shall be sufficiently extensive as to allow payment institutions to provide payment services in an unhindered and efficient manner.

In fact, it is essential that payment institutions be able to open and maintain accounts with credit institutions, since they must comply with safeguarding requirements whereby they have to keep payment service users' funds separate from the payment institution's funds[41].

According to the EBA, where a financial institution takes a decision to refuse to enter into, or to terminate, business relationships with individual customers or categories of customers associated with higher money laundering and terrorism financing risk, or to refuse to carry out transactions with a higher money laundering and terrorism financing risk, this is referred to as 'de-risking'.

The EBA found that de-risking occurs across the EU and affects different types of customers or potential customers of institutions, including specific segments of the financial sector such as respondent banks, payment institutions and electronic money institutions. The EBA has concluded that, 'at EU level, de-risking, especially if it is unwarranted, has a detrimental impact on the achievement of the EU's objectives, in particular in relation to fighting financial crime effectively, promoting financial inclusion and competition in the single market'[42].

Banco de Portugal plays an important role in the application of both Articles 35 and 36 of PSD2. In the first case, there is no obligation to report to the NCA - the participant must provide the requesting PSP with full reasons for any rejection, who may in turn report those reasons to the

39 Even so, credit institutions can create barriers to entry to payment institutions and electronic money institutions by, for instance, imposing high fees for making their services available.

40 Cfr. Article 69 RJSPME.

41 See Article 10 PSD2 (cfr. Article 52 RJSPME).

42 See European Banking Authority, 'Opinion of the European Banking Authority on 'de-risking'' (EBA/Op/2022/01, 5 January 2022), available at https://www.eba.europa.eu/sites/default/documents/files/document_library/Publications/Opinions/2022/Opinion%20on%20de-risking%20%28EBA-Op-2022-01%29/1025705/EBA%20Opinion%20and%20annexed%20report%20on%20de-risking.pdf.

NCA. In the case of Article 36, credit institutions must provide the competent authority with duly motivated reasons for any rejection. Banco de Portugal, as the authority responsible for ensuring the smooth functioning of payment systems[43] may, upon notice, engage with both parties and take action to ensure proper application of the rules.

5. Open banking and licensing-related innovative business models

By regulating the new payment services referred to above, PSD2 allowed – or rather imposed – the opening up of data once only available to banks to any third PSP that obtains authorisation for the provision of PIS and AIS, subject to the consent of the payment service user. This is what 'open banking' is about: 'the practice of enabling secure interoperability in the banking industry by allowing third-party payment service providers and other financial-services providers to access banking transactions and other data held by banks and financial institutions'[44].

According to EY, 'payments have historically sat in the background, seen more as the plumbing that facilitates commerce. The data that flows through the pipes has been largely overlooked and undervalued'[45]. PSD2 has enabled a shift in the focus: information previously owned only by banks such as transaction data and payment history is now (almost) freely used by TPPs and it is the consumer that chooses which information to share and with whom.

The BIS defines 'open banking' as 'the sharing and leveraging of customer-permissioned data by banks with third party developers and firms to build applications and services, including for example those that provide real-time payments, greater financial transparency options for account holders, marketing and cross-selling opportunities'[46].

In fact, since the publication of PSD2, we have seen a surge of 'BigTechs', such as Google, Apple, Facebook and Amazon (collectively known as GAFA), entering the payments business, with a number of these companies acquiring a license as PSP in the EU[47]. These players already have a very large client base, they are intensive in technology and they are dominant in their respective industries. In addition, they possess large amounts of personal data from their clients on which they

43 See Article 14 of the Statute of Banco de Portugal, https://www.bportugal.pt/sites/default/files/anexos/legislacoes/statute_banco_de_portugal.pdf.

44 John Berrigan, 'From Open Banking to Open Finance' (internationalbanker.com, 15 September 2022) https://internationalbanker.com/banking/from-open-banking-to-open-finance.

45 Ernst & Young, 'Why payments data is the key to unlocking new customer value' (25 June 2021) https://www.ey.com/en_ly/banking-capital-markets/why-payments-data-is-the-key-to-unlocking-new-customer-value.

46 Bank for International Settlements, 'Report on open banking and application programming interfaces' (November 2019) https://www.bis.org/bcbs/publ/d486.pdf.

47 This is the case of Facebook Payments Intl Ltd, which has been an authorised PSP in Ireland since 2018; Alipay (Europe) Limited S.A., an authorised PSP in Luxembourg since 2018; Google Payments Lithuania UAB, an authorised PSP in Lithuania since 2018; and Uber Payments B.V., an authorised PSP in the Netherlands since 2019. Data available at https://www.eba.europa.eu/risk-analysis-and-data/register-payment-electronic-money-institutions-under-PSD2.

can leverage. By adding payments to their offer, they are able to provide an 'all-in-one business model', whereby they can, for example, offer transportation services or housing accommodation while not having to rely on any third party to receive their payments[48].

The BIS finds that 'as yet, financial services are only a small part of their business globally. But given their size and customer reach, BigTech's entry into finance has the potential to spark rapid change in the industry'[49]. This poses a number of challenges to regulators who need to ensure a level-playing field among all types of players in the payment market, be they incumbent banks, small payment institutions, or Big Tech electronic money institutions, while also taking into account the different types of risks that these players pose.

Recent research by the BIS's Financial Stability Institute already shows that 'the current regulatory framework does not sufficiently address the risks posed by big tech operations in the financial sector, and a regulatory rethink is warranted to protect key public policy objectives, in particular financial stability'[50].

Other open banking solutions include the so-called 'license as a service', which enables PSPs to serve as a regulated partners for firms looking to offer or use account information services. These PSPs provide non-PSPs business partners, such as audit firms, accountants, enterprise resource planning (ERP) providers, or credit scoring performers, with access to information from payment accounts, as defined by PSD2, without them having to apply for a license/registration themselves. In fact, the registration procedure and ongoing requirements for NCAs in relation to PSD2 are often perceived as comprehensive, time-consuming and generally onerous, especially for small and medium enterprises usually very proficient in technology but with no previous experience in financial supervisory compliance.

The EBA has explicitly clarified[51] that PSD2 does not require that account information service providers provide the consolidated information to the user in order for the service to constitute an AIS under PSD2. The account information service provider may therefore transmit the consolidated information to a third party with the payment service user's explicit agreement. The payment service user will not have access to this information. Regarding the use made by any third party of the consolidated information transmitted, other provisions of EU law may apply, for instance the General Data Protection Regulation[52].

48 On the characterisation of the payment market before and after PSD2 and the impacts of BigTechs in this market, see Laurens van der Spek and Sebastiaan Phijffer, 'Will Bigtechs change the European Payments Market forever?' https://www.compact.nl/en/articles/will-bigtechs-change-the-european-payments-market-forever/#ref.

49 Bank for International Settlements, 'Annual Economic Report 2019' 55 https://www.bis.org/publ/arpdf/ar2019e3.pdf.

50 See Johannes Ehrentraud, Jamie Evans, Amelie Monteil and Fernando Restoy, 'Big tech regulation: in search of a new framework', Occasional Paper No 20 (October 2022) https://www.bis.org/fsi/fsipapers20.pdf,

51 See European Banking Authority, 'Q&A 2018_4098 Clarification on whether a particular business model type constitutes the provision of an account information service as defined by Article 4 (16) of PSD2' https://www.eba.europa.eu/single-rule-book-qa/-/qna/view/publicId/2018_4098.

52 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, and repealing Directive 95/46/EC (General Data Protection Regulation) [2016] OJ L 119/1 https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32016R0679&from=EN.

Assuming that there is consent to the information sharing from the user under the GDPR, any account information service provider is able to position itself as the regulated partner of non-regulated firms that want to access their clients' account information but do not want to apply for a license to provide payment services. This topic raises many questions on the interplay between what open banking allows and what the protection of personal data prevents, which led to the publication of Guidelines by the European Data Protection Board with the aim of providing further guidance on data protection aspects in the context of the PSD2, in particular on the relationship between relevant provisions on the GDPR and the PSD2. The focus of these Guidelines is on the processing of personal data by account information providers and payment initiation providers[53].

6. Business opportunities relating to non-regulated business models

Like most Directives, PSD2 has a number of exclusions from its scope, corresponding to different business models that do not qualify as provision of payment services for the purposes of the Directive either because they are not completely electronic (i.e. they involve cash or paper-based titles), because they do not require that the providers take possession of funds, or simply because they pose less risk given their limited nature.

This is the case of technical service providers, which support the provision of payment services, without entering at any time into possession of the funds to be transferred. These services include processing and storage of data, trust and privacy protection services, data and entity authentication, information technology and communication network provision, provision and maintenance of terminals and devices used for payment services[54].

Technical service providers are of the utmost importance to the smooth provision of payment services but they do not require a license from a NCA because they do not enter into possession of the funds, they are not able to initiate payment orders and they do not have access to payment accounts[55]. However, some business models are difficult to access from a supervisory perspective,

53 See European Data Protection Board, 'Guidelines 06/2020 on the interplay of the Second Payment Services Directive and the GDPR Version 2.0' (15 December 2020) https://edpb.europa.eu/sites/default/files/files/file1/edpb_guidelines_202006_psd2_afterpublicconsultation_en.pdf.

54 See Article 3 j) PSD2:
'*This Directive does not apply to the following:*
(j) services provided by technical service providers, which support the provision of payment services, without them entering at any time into possession of the funds to be transferred, including processing and storage of data, trust and privacy protection services, data and entity authentication, information technology (IT) and communication network provision, provision and maintenance of terminals and devices used for payment services, with the exclusion of payment initiation services and account information services;'.

55 It is relevant to note that PSD2 explicitly refers to account information service providers and to payment initiation service providers in the exclusion for technical service providers, which was not the case for PSD1 (cf. Article 3 j) of PSD1). This is because the two new types of payment services seem at first sight to fulfil the requirements for exclusion from the scope of the Directive, since, like technical service providers, providers of AIS and PIS do not enter into possession of funds and provide supporting services to the transfer of funds. However, they are able to initiate payment transactions and they have access to payment accounts, which qualifies as provision of payment services in the current legal framework.

since it may not at all times be clear, especially in a much-disintermediated environment, which is the role of each player in the payment chain and which is the payments flow in each situation (i.e. which is the payment service and which is the ancillary service). Examples include services provided by payment gateways, services provided by digital wallet providers, operations of card schemes, and services provided by processing entities.

Another example of a non-regulated business model is payment instruments covered by the limited network exclusion[56]. These could include store cards, fuel cards, meal vouchers or vouchers for specific services, which are sometimes subject to a specific framework of tax or labour law designed to promote the use of such instruments to meet the objectives laid down in social legislation.

Experience in the application of PSD1 showed that different Member States were applying the limited network exclusion in different ways, which resulted in an unlevel playing field in the EU and created opportunities for regulatory arbitrage, with entities 'cherry-picking' the jurisdiction with the most convenient supervisory regime to provide their services. Also, feedback from the market showed that the payment activities covered by the limited network exclusion often comprised significant payment volumes and values and offered consumers a wide range of different products and services. This was not the purpose of the exclusion and the fact that these payment instruments develop from specific-purpose instruments to general-purpose ones entails greater risks and no legal protection for payment service users, in particular consumers, and clear disadvantages for regulated market actors[57].

Consequently, PSD2 set out to clarify the conditions for application of the limited network exclusion, explicitly stating that it should not be possible to use the same instrument to make payment transactions to acquire goods and services within more than one limited network or to acquire an unlimited range of goods and services[58].

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56 See Article 3 k) of PSD2:
'This Directive does not apply to the following:
(…) k) services based on specific payment instruments that can be used only in a limited way, that meet one of the following conditions:
(i) instruments allowing the holder to acquire goods or services only in the premises of the issuer or within a limited network of service providers under direct commercial agreement with a professional issuer;
(ii) instruments which can be used only to acquire a very limited range of goods or services;
(iii) instruments valid only in a single Member State provided at the request of an undertaking or a public sector entity and regulated by a national or regional public authority for specific social or tax purposes to acquire specific goods or services from suppliers having a commercial agreement with the issuer;'

57 See Recitals 13 and 14 PSD2.

58 In the words of recital 13 PSD2: *A payment instrument should be considered to be used within such a limited network if it can be used only in the following circumstances: first, for the purchase of goods and services in a specific retailer or specific retail chain, where the entities involved are directly linked by a commercial agreement which for example provides for the use of a single payment brand and that payment brand is used at the points of sale and appears, where feasible, on the payment instrument that can be used there; second, for the purchase of a very limited range of goods or services, such as where the scope of use is effectively limited to a closed number of functionally connected goods or services regardless of the geographical location of the point of sale; or third, where the payment instrument is regulated by a national or regional public authority for specific social or tax purposes to acquire specific goods or services.*

Recently, given that there were still many questions from market players about the application of the exclusion and the related notification requirements[59], the EBA joined in this effort by publishing Guidelines on the limited network exclusion under PSD2[60], with a view to clarifying specific aspects of application of the exclusion, including on how a network of service providers or a range of goods and services should be assessed in order to qualify as 'limited', the use of payment instruments within limited networks, the provision of excluded services by regulated financial institutions and the submission of notification to NCAs.

The above are just two examples of how the [fifteen] exclusions from the scope of PSD2 (and PSD1 previously) have enabled business opportunities outside the regulated perimeter[61]. Evidence has shown that some exclusions may have been used by PSPs to redesign business models so that the payment activities offered would be outside the scope of that Directive[62].

Indeed, while we are still learning the lessons of the application and enforcement of PSD2, the European Commission launched, in May 2022, a public and targeted consultation on review of PSD2[63]. The Commission has also called for the advice of the EBA on review of the Directive.

In this context, discussions are already under way on what revision of PSD2 might entail, with the EBA proposing amendments that include, for instance, moving from 'Open banking' to 'Open finance' (or else expansion from access to payment accounts data to access to other types of financial data) and the opportunities and potential challenges associated with it, based on the PSD2 experience; addressing unwarranted de-risking practices by banks affecting payment and e-money institutions; and adjusting the prudential requirements for significant payment institutions.

The types of payment services that are to be included/excluded from the scope of the Directive is one of the main topics brought to light, with very innovative business models such as

59 Under Article 37, para. 2 PSD2, issuers excluded under Article 3(k)(i) or (ii) of PSD2 must notify the respective competent authority if they exceed the threshold of EUR 1 million for the value of payment transactions. NCAs, in turn, shall assess whether the activity qualifies as a limited network or whether it requires authorisation as a payment or electronic money institution.

60 See European Banking Authority, 'EBA Guidelines on the limited network exclusion under PSD2', EBA/GL/2022/02 (24 February 2022) https://www.eba.europa.eu/sites/default/documents/files/document_library/Publications/Guidelines/2022/EBA-GL-2022-02%20GL%20on%20limited%20network%20exclusions/1027516/Final%20report%20on%20draft%20Guidelines%20on%20the%20limited%20network%20exclusion%20under%20PSD2.pdf.

61 Others could be mentioned such as the exclusion applicable to certain payment transactions by means of telecom or information technology devices where the network operator not only acts as an intermediary for the delivery of digital goods and services through the device in question, but also adds value to those goods or services; payment services offered by deployers of automated teller machines independent from account servicing payment service providers; or payment transactions through a commercial agent on behalf of the payer or the payee.

62 See Recital 19 PSD2.

63 See https://ec.europa.eu/info/law/better-regulation/have-your-say/initiatives/13331-Payment-services-review-of-EU-rules/public-consultation_en and https://finance.ec.europa.eu/regulation-and-supervision/consultations/finance-2022-psd2-review_en.

'buy-now-pay-later' or 'cash-in-shop' at the centre of discussions[64]. It is the opinion of the EBA that many of these players act merely as technical service providers and should not be subject to authorisation requirements. However, the decision for the scope of the Directive to include players such as processors and operators of payment schemes has not been entirely discarded. On this, the EBA states that 'while the operation of payment schemes may not require authorisation under the Directive and acknowledging that payment schemes are subject to oversight frameworks, the EBA sees merit in introducing specific requirements in the Directive to payment schemes and to merchants to ensure that such key security requirements are properly implemented in the future'[65].

7. Open Finance

The European Commission has stated that it hopes to propose legislation on a broader 'open finance' framework, the aim of which would be to allow customer data beyond the scope of PSD2 to be shared and re-used by financial service providers for creating new and improved services, subject to customer agreement as well as the effective application of data protection rules and security safeguards.

In this context, the Commission has launched a public and targeted consultation on 'open finance framework and data sharing in the financial sector'. The Commission intends to build on the lessons learned from PSD2 as regards third party service providers' access rights to payment accounts upon customer request, taking into account that, since PSD2 took effect, there has also been a number of stakeholder initiatives, including API standardisation and access schemes[66].

Open banking will always be the legacy of PSD2 in the EU, but it took market players only a few years to 'think outside the box' of PSD2 and try to expand their business of collecting and using data to other types of personal non-payment data held by any financial service. In fact, the (commercial) use of consumer data by financial institutions is a topic that the European Supervisory Authorities (ESAs) have been observing, noting that a growing number of financial institutions use

64 See European Banking Authority, 'Opinion on EBA's Response to the Call for Advice on the Review of PSD2', EBA/Op/2022/06 (23 June 2022) https://www.eba.europa.eu/sites/default/documents/files/document_library/Publications/Opinions/2022/Opinion%20od%20PSD2%20review%20%28EBA-Op-2022-06%29/1036016/EBA%27s%20response%20to%20the%20Call%20for%20advice%20on%20the%20review%20of%20PSD2.pdf.
'Buy-now-pay-later' business models are usually defined as a type of short-term financing that allows consumers to make purchases and pay for them at a future date, often interest-free. They are becoming very popular for e-commerce. The EBA is of the view that the core service provided is of a lending nature and should be considered as granting credit. 'Cash-in-shop services' are seen as enabling payment service users to withdraw cash from a merchant by using their payment card at a point-of sale without making a purchase. The EBA has found that different supervisory approaches are followed across the EU and has proposed to clarify the treatment of these services and, in particular, whether (i) they should fall within the scope of an already existing payment service and who is the actual provider of the service or (ii) to be excluded from the scope of the Directive due to their alleged lower risk.

65 See European Banking Authority (2022c)

66 See https://ec.europa.eu/info/law/better-regulation/have-your-say/initiatives/13331-Payment-services-review-of-EU-rules/public-consultation_en and https://finance.ec.europa.eu/regulation-and-supervision/consultations/finance-2022-open-finance_en.

consumer data in innovative ways, often combining data that they hold internally with data obtained from external data vendors, social media or other external sources[67].

Specifically on 'Big Data', the ESAs have concluded that it brings many benefits for the financial industry and consumers, such as more tailored products and services, improved fraud analytics, or enhanced efficiency of organisational internal procedures. The ESAs have, however, found that there is potential for errors in Big Data tools, which may lead to incorrect decisions being taken by financial service providers[68].

Open finance is the next step after open banking and it will allow data sharing and third-party access for a wide range of financial sectors and products, in line with data protection and consumer protection rules. The Commission sees it as 'the natural progression of where the digitalisation of financial services is taking us'[69].

Nevertheless, the NCAs in the EU do not relinquish their supervisory responsibilities or the prerogative to authorise financial institutions to provide services in their territory. Even so, in the spirit of openness, efforts are being made to foster innovation in the provision of financial services in the EU, especially in payments. The Commission has recently launched the EU Digital Finance Platform, which is 'a collaborative space bringing together industry and public authorities to support innovation in the EU's financial system and help work towards a true Single Market in digital finance', where innovative firms can find out about national licensing requirements, as well as updates on the work of the European Forum for Innovation Facilitators (EFIF) - which provides a platform for supervisors to meet regularly to share experiences from engagement with firms through innovation facilitators (regulatory sandboxes and innovation hubs), to share technological expertise, and to reach common views on the regulatory treatment of innovative products, services and business models, boosting bilateral and multilateral coordination overall[70] [71].

In Portugal, Banco de Portugal, the Portuguese Securities Market Commission and the Insurance and the Pensions Supervisory Authority are all engaged with EFIF, mainly through the work done at the Portugal FinLab – a communication channel between innovators and the Portuguese regulatory authorities. Through it, the authorities provide guidelines to the participants on how to navigate and operate in the regulatory system[72].

67 See European Banking Authority, 'Report on innovative uses of consumer data by financial institutions', (28 June 2017) https://www.eba.europa.eu/sites/default/documents/files/documents/10180/1720738/1a1ba7c1-7d93-4175-8d01-b97c9aaee36e/Report%20on%20Innovative%20uses%20of%20data%202017.pdf.

68 See Joint Committee of the European Supervisory Authorities, 'Joint Committee Final Report on Big Data', (15 March 2018) https://www.eiopa.europa.eu/media/news/esas-weigh-benefits-and-risks-of-big-data_en.

69 Berrigan (2022).

70 See https://digital-finance-platform.ec.europa.eu/.

71 See https://www.eba.europa.eu/financial-innovation-and-fintech/european-forum-for-innovation-facilitators.

72 See https://www.portugalfinlab.org/.

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Crypto-Assets in Enforcement and Insolvency

Dominik Skauradszun [1]

Abstract

The paper argues that neither the Brussels Ia Regulation nor the European Insolvency Regulation is explicitly designed to deal with crypto-assets, however, both Regulations help in terms of international jurisdiction, the applicable law and the recognition of judgments. The paper outlines peculiarities of crypto custodians as debtors under the scope of the European Insolvency Regulation and points to questions of creditors' ranking in the insolvency of an issuer of crypto-assets or a crypto custodian.

Keywords: insolvency, enforcement, jurisdiction, crypto custody, ranking

1. Introduction

Crypto-assets have for some years been enjoying the growing enthusiasm of the financial markets for these digital assets. Since crypto-assets, due to their innovative nature, can harbour a multitude of opportunities, but also the corresponding risks, the number of crypto-assets in circulation also increases the number of natural and legal persons and companies that might later finds themselves as debtors, in financial difficulties.

If some of the risks, as recently discussed, in the event of insolvency materialise - for instance, the risk as to whether customers of crypto custodians are ranked as ordinary (unsecured) insolvency creditors in the custodian's insolvency -,[2] crypto-assets held by a crypto

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2 Currently, customers of crypto custodians are becoming aware of a potential risk in the event of the custodian's insolvency. The Financial Times reported on an SEC filing on 11 May 2022 in which a crypto custodian wrote that the crypto-assets held by the custodian for users may be subject to insolvency proceedings and those customers could rank as unsecured creditors (https://www.ft.com/content/50c1e24d-4b28-42fe-bb29-e9d13aa01909 [lastly reviewed 24 June 2022]). To be treated as unsecured creditor means that the insolvency estate will—after satisfaction of secured and privileged creditors—be distributed among all equally ranked unsecured creditors. In many cases, unsecured creditors then only receive a single-digit insolvency dividend, e.g. 8% on the respective claim. However, the creditors' rights depend on the applicable insolvency law (see II. 3.), qualification of the respective crypto-asset as a property right (III. 2.), and the legal nature of the customer's claim (V.). Under certain conditions, customers can also segregate crypto assets.

custodian need to be reconsidered. It then seems to be less relevant to find coherent solutions for crypto-assets in civil law, private international law, accounting law, supervisory law, and many other areas of law, if insolvency law 'spoils the party' and becomes the dealbreaker for crypto-assets - at least those held by crypto custodians, more and more the major player in the crypto-assets market.[3] However, these questions are not simple to answer. The following article seeks to elaborate some principles.

2. Cross-border Enforcement and Insolvency Proceedings

If a debtor in financial distress owns crypto-assets, then the next logical step from the creditor's point of view is to ask how these assets can be seized in compulsory enforcement proceedings or realised in insolvency proceedings concerning the assets of the debtor. Typical questions that arise in such a situation are these:

- What enforcement measures can be taken?
- Do crypto-assets form part of the insolvency estate at all?
- How can these crypto-assets be realised?
- How is it possible to convert crypto-assets into legal tender?
- Does a decentralised blockchain automatically lead to a cross-border case?

These questions were raised, inter alia, by the Portuguese authors de Macedo and Coelho in a eurofenix article[4], which once again illustrates that the preceding questions also arise across borders in other EU Member States. Insolvency-related questions have been raised, especially by financial supervisory authorities, pointing to the insolvency ranking of customers in the event of insolvency proceedings relating to the assets of crypto custodians.[5]

3 The reason why some customers do not make larger investments in crypto-assets directly, but instead commission a crypto custodian, is on the one hand that customers are worried about losing their private keys, and on the other hand that transaction costs can be reduced in this way. Each cryptographic encryption and decryption for a new token on the blockchain triggers costs. It may then be worthwhile to bundle requests from customers and reduce the number of actual transactions on the blockchain. For this purpose, crypto custodians use, *inter alia*, special wallets in which the private keys of the customers are stored or which serve to allocate the crypto-assets to the individual customers. What consequences this has for the rank of the customers' claims under insolvency law has not yet been clarified (see V.).

4 Joaquim Shearman de Macedo and Diogo Franco Coelho, 'Crypto currencies and insolvency in Portugal: What does the future hold?' (2022) Eurofenix Winter 2021/2022 17.

5 See fn. 1.

2.1 The Insolvency Provisions in MiCAR

So far, however, no EU law has explicitly addressed the interplay between crypto-assets and enforcement or insolvency law.[6] The first EU law in this regard could be the Regulation of the European Parliament and of the Council on Markets in Crypto-assets (MiCAR).[7]

Compared to the original proposal by the European Commission[8] and the proposal by the European Parliament[9], the Council has proposed a much more comprehensive Art. 42 in this Regulation, dealing with the resolution of issuers of specific tokens—asset-referenced tokens[10]—especially in the event of an insolvency. Art. 42(1) of the draft MiCAR-draft reads:

> "Issuers of asset-referenced tokens shall draw up and maintain an operational plan to support an orderly redemption of each asset-referenced tokens to be implemented upon a decision by the competent authority where the issuer is unable or likely to be unable to comply with its obligations, including in the case of insolvency or withdrawal of authorisation of the issuer without prejudice to the commencement of a crisis management procedure".

Furthermore, the Council has proposed a much more detailed Art. 67(10) for this Regulation which states that

> "Member States shall ensure that the crypto-assets held in custody are insulated in accordance with national law in the interest of the clients of the crypto-asset service provider against the claims of other creditors on the crypto-asset service provider, in particular in the event of insolvency."[11]

The draft of the MiCA Regulation still fails to provide a comprehensive answer to questions of enforcement and insolvency law,[12] which is why another solution is needed. This is

6 F. Krüger, 'Bitcoin (BTC) und andere Kryptowährungen als verwertbare Insolvenzmasse' [Bitcoin (BTC) and other cryptocurrencies as realisable insolvency estate] (2022) Zeitschrift für das gesamte Insolvenz- und Sanierungsrecht 1261, 1263.

7 Regulation of the European Parliament and of the Council on Markets in Crypto-assets and amending Directive (EU) 2019/1937. Political agreement on this proposed regulation was reached on 30 June 2022 (https://www.consilium.europa.eu/en/press/press-releases/2022/06/30/digital-finance-agreement-reached-on-european-crypto-assets-regulation-mica/ [lastly reviewed 13 June 2022]). This article refers to the Council's version dated 1.4.2022 from the trialogue. Those articles and recitals referred to in this article are unchanged in the Draft Agreement dated 17 June 2022.

8 Proposal for a Regulation of the European Parliament and of the Council on Markets in Crypto-assets, and amending Directive (EU) 2019/1937, COM(2020) 593 final, 2020/0265 (COD) as of 24.9.2020.

9 Report on the proposal for a regulation of the European Parliament and of the Council on Markets in Crypto-assets, and amending Directive (EU) 2019/1937, A9-0052/2022, as of 17.3.2022.

10 According to Art. 3(1)(3) MiCAR-draft 'asset-referenced token' means a type of crypto-asset that purports to maintain a stable value by referring to the value of several fiat currencies that are legal tender, one or several commodities or one or several crypto-assets, or a combination of such assets.

11 The English term "insulated" used in the MiCAR-draft suggests that the European legislator is aiming for a separation between the crypto assets held in custody for the clients and the crypto custodian's own assets. See also under V.

12 It is questionable whether the draft of Art. 67 MiCAR is to be understood in such a way that national law must ensure that the clients' claims to the crypto-assets held in custody result in rights of separation (similar to secured claims) or rights of segregation (which means that crypto-assets held in custody do not form part of the insolvency estate). "Insulated" seems to point to a right of segregation.

also the case because the draft regulation must first be passed by Parliament and Council and subsequently enter into force.[13]

In terms of international jurisdiction and recognition in enforcement and insolvency law, EU law is, however, harmonised in nearly all EU Member States.[14] The relevant legal acts here could be the Brussels Ia Regulation on jurisdiction and the recognition and enforcement of judgments in civil and commercial matters,[15] the recast European Insolvency Regulation[16] and the 5th EU Directive on the prevention of money laundering.[17]

2.2 Current Main Scenarios

Before highlighting those provisions of the Regulations suitable for cases where crypto-assets are involved, the relevant scenarios should first be sketched out first. There are basically two different situations regarding crypto-assets in enforcement and insolvency that academia and practitioners are currently confronted with. In the first case, there is a debtor—a natural person, a legal person, or a company—who or which is facing compulsory enforcement proceedings or insolvency proceedings.[18] One or more of its creditors are aware of crypto-assets among the debtor's assets and try to seize these crypto-assets or want the insolvency practitioner to realise these crypto-assets.

In the second case an issuer has launched an offering of security tokens/investment tokens and promised, for example, to pay interest and to repay the invested money later. However, due

13 The draft of Art. 126 MiCAR sets forth that the Regulation shall apply from 24 months after the date of entry into force, except for the provisions laid down in Title III (asset-referenced tokens) and IV (electronic money tokens) which shall apply 12 months after the Regulation's entry into force.

14 According to Recital 41 of the Brussel Ia Regulation, Denmark did not take part in the adoption of the Regulation. However, due to the "Agreement between the European Community and the Kingdom of Denmark on jurisdiction and the recognition and enforcement of judgments in civil and commercial matters" and the Danish notification by letter of 20.12.2012 the Regulation now also applies to Denmark, J. Antomo, in V. Vorwerk and C. Wolf (eds.), *BeckOK ZPO*, 45th ed. (CH Beck 2022), Art. 1 Brussels Ia Regulation, para. 12. The EIR Recast, however, does not apply to Denmark since Denmark did not take part in the adoption of the EIR Recast and is not bound by it or subject to its application (Recital 88 EIR Recast).

15 Regulation (EU) No 1215/2012 of the European Parliament and of the Council of 12 December 2012 on jurisdiction and the recognition and enforcement of judgments in civil and commercial matters (recast) (Brussels Ia) [2012] OJ L351/1.

16 Regulation (EU) 2015/848 of the European Parliament and of the Council of 20 May 2015 on insolvency proceedings (recast) (European Insolvency Regulation – EIR Recast) [2015] OJ L141/19.

17 Directive (EU) 2018/843 of the European Parliament and of the Council of 30 May 2018 amending Directive (EU) 2015/849 on the prevention of the use of the financial system for the purposes of money laundering or terrorist financing, and amending Directives 2009/138/EC and 2013/36/EU [2018] OJ L156/43. Cryptocurrencies are a type of virtual currencies, which are defined in Art. 3(18) Directive (EU) 2015/849 (amended by Directive (EU) 2018/843) as "a digital representation of value that is not issued or guaranteed by a central bank or a public authority, is not necessarily attached to a legally established currency and does not possess a legal status of currency or money, but is accepted by natural or legal persons as a means of exchange and which can be transferred, stored and traded electronically".

18 Whether enforcement proceedings are appropriate or insolvency proceedings need to be opened depends on the debtor's assets. If the assets suffice to cover the creditor's claims, individual enforcement actions brought by the creditors are appropriate for pursuing their claims. If the assets are insufficient, a common pool problem occurs. Insolvency proceedings may then deal with this problem. Cf. for the common pool problem Thomas H. Jackson, *The Logic and Limits of Bankruptcy Law* (Harvard University Press 1986) 16 et seq.

to financial difficulties, the issuer cannot satisfy all the investors' claims and the insolvency practitioner has to deal with the investors and the unfulfilled claims registered on the blockchain. Here, the decisive question is which rank the investors have under insolvency law.

This second scenario resembles the current debate we have observed in different countries in relation to crypto custodians:[19] crypto custodians have entered into contracts with their customers taking care of the customers' crypto-assets or promising different services such as the exchange of legal tender into cryptocurrencies. If the crypto custodian goes bankrupt the customers will try to segregate their crypto-assets. The crypto custodian faces many customers claiming rights from the custody contract.

Application of the European Insolvency Regulation could clarify the situation as regards not only the international jurisdiction but also the applicable law:

2.3 European Insolvency Regulation Recast

Although there is (still) no EU law explicitly addressing the interplay between crypto-assets and enforcement or insolvency law, there is an established regulation on insolvency proceedings in cross-border cases. As crypto-assets are mostly based on distributed ledger technology,[20] they also raise cross-border issues in most cases.

The EIR Recast applies to all insolvency proceedings mentioned in Annex A EIR Recast. Accordingly, common insolvency proceedings such as the Portuguese Processo de insolvência or the German Insolvenzverfahren fall within the scope of EIR Recast.

2.3.1 Personal Scope and Special Debtors such as Crypto Custodians

In principle, the EIR Recast is aimed at "debtors" in general. A variety of financial services providers are, however, explicitly excluded pursuant to Art. 1(2) EIR Recast. Therefore, the EIR Recast does not apply to:

> "(a) insurance undertakings;
>
> (b) credit institutions;
>
> (c) investment firms and other firms, institutions and undertakings to the extent that they are covered by Directive 2001/24/EC; or
>
> (d) collective investment undertakings."

19 See fn. 1.

20 For the technical basics and a functional overview of distributed ledger technology, using blockchain as an example, see Michèle Finck and Valentina Moscon, 'Copyright Law on Blockchains: Between New Forms of Rights Administration and Digital Rights Management 2.0' (2019) 50 International Review of Intellectual Property and Competition Law 77, 89 et seq.

This raises the contentious issue of whether the exclusion applies to crypto custodians. It needs to be assessed whether they can be regarded as one of the financial institutions mentioned in Art 1(2) EIR Recast. This discussion is primarily based on the fact that crypto custodians are essentially part of the finance sector, similar to the other financial institutions mentioned within the exclusion in Art 1(2) EIR Recast.

The exclusion is to be interpreted autonomously. Terms defined in national law cannot determine how the exclusion needs to be applied. First of all, crypto custodians evidently cannot be considered to be acting in insurance[21] or as collective investment undertakings[22], as there are virtually no similarities between their respective business models.

Pure crypto custodians also do not count as credit institutions or investment firms and other firms, institutions and undertakings covered by Directive 2001/24/EC. Credit institutions necessarily need to be active in the loan market, receive deposits, or be qualified as an electronic money institution[23], which is not the case of crypto custodians.

Investment firms[24] are required to conduct business beyond the administration and custodianship of financial products[25], which is not necessarily the case of pure crypto custodians (but may be). What is more, crypto-assets such as crypto currencies are structurally different

21 This is based on Directive 2009/138/EC (Solvency II).

22 Article 2, para. 2 EIR Recast: "undertakings for collective investment in transferable securities (UCITS) as defined in Directive 2009/65/EC of the European Parliament and of the Council and alternative investment funds (AIFs) as defined in Directive 2011/61/EU of the European Parliament and of the Council".

23 Cf. Article 4, para. 1(1) Capital Requirements Regulation (Regulation (EU) No. 575/2013) and as rightly explained by Alexander Bornemann, in Graf-Schlicker (ed.), *InsO*, 6th ed. (RWS Verlag 2022), Art. 1 EIR Recast para. 53. According to the formerly prevailing opinion (S. Mock, in A. Fridgen, A. Geiwitz and B. Göpfert (eds.) *BeckOK InsR*, 27th ed. (CH Beck 2022), Art. 1 EIR Recast para. 14; J. Schmidt, in Mankowski, Müller and J. Schmidt (eds.), *EuInsVO* (CH Beck 2016), Art. 1 EIR Recast para. 48; J. Nerlich and J. Hübler, in Nerlich and Römermann (eds.), *InsO*, 42nd ed. (CH Beck 2021), Art. 1 EIR Recast para. 20; H. Vallender, in H. Vallender (ed.), *EuInsVO*, 2nd ed. (RWS 2020), Art. 1 para. 61), Directive 2001/24/EC provides the initial act of legislation to determine what constitutes a credit institution. This directive derives the definition for credit institutions from Directive 2000/12/EC. The latter defines credit institutions in Art. 1(1) as "an undertaking whose business is to receive deposits or other repayable funds from the public and to grant credits for its own account" or "an electronic money institution within the meaning of Directive 2000/46/EC of the European Parliament and of the Council of 18 September 2000 on the taking up, pursuit and prudential supervision of the business of electronic money institutions". However, see Article 158 Directive 2006/48/EG.

24 Directive 2001/24/EC is specifically mentioned in Art. 1(2) EIR Recast. This directive derives its definition of an investment firm from the Capital Requirements Regulation (Regulation (EU) No. 575/2013). The CRR on the other hand refers to Art. 4(1)(1) Directive 2014/65/EC (MiFID II).

25 Annex I Section A of Directive 2014/65/EC (MiFID II) defines which investment services and activities need to be provided in order for a financial institution to be considered an investment firm. Annex I Section B then stipulates that administration and custodianship of financial products is not a financial service, but instead an ancillary service. Providing ancillary services alone does not amount to investment services and activities pursuant to Annex I Section A of Directive 2014/65/EC (MiFID II). It follows that a a crypto custodian—whose financial services are restricted to the administration and safekeeping of crypto-assets—cannot be considered an investment firm.

from other financial instruments[26], which is why Directive 2001/24/EC is not applicable to this type of crypto-asset.

On closer inspection, the similarities only exist insofar as all these institutions are active in the financial sector. Structurally, they are rather different. Even though crypto custodians carry on activities which, in the broadest sense, present similarities to the entities referred to in Art. 1(2) EIR Recast, it does not seem convincing to interpret the exclusion of Art. 1(2) EIR Recast broadly and thereby apply it to crypto custodians if these crypto custodians are not simultaneously covered by the specific legal acts which have been developed for the insolvency of credit institutions, insurance undertakings, investment firms and certain collective investment undertakings. Otherwise, there would be a regulatory lacuna that could not be in the interest of the European internal market for crypto custodians. They must therefore fall within the scope of EIR Recast.[27]

2.3.2 The COMI Principle

The next point to consider in this context concerns international jurisdiction. have International jurisdiction to open insolvency proceedings lies with the courts of the Member State where the debtor has the centre of its main interests (COMI) (Art. 3(1) EIR Recast). In the case of a company or legal person, the place of the registered office shall be presumed to be the centre of its main interests in the absence of proof to the contrary (Art. 3(1.2) sentence 1 EIR Recast[28]).

2.3.3 The Applicable Law

While the question of the law applicable to crypto-assets usually raises many unresolved issues,[29] the applicability of the European Insolvency Regulation has a major advantage, as the Regulation itself determines the applicable law for a number of questions.[30] Art. 7(1) EIR Recast explicitly stipulates

26 Annex I Section C stipulates what constitutes a financial instrument within the scope of Directive 2014/65/EC (MiFID II). None of the instruments resemble crypto-currencies, as all the financial instruments listed there will lead to some sort of *contractual obligation*. Owners of crypto-currencies typically do not seek to be legally bound or enter into legal relations with other persons. The financial instruments listed in Annex I Section C are therefore dissimilar to crypto-currencies. The amendment of MiFID II by Regulation (EU) 2022/858 of the European Parliament and of the Council of 30.5.2022 [2022] OJ L 151/1 does not lead to a different view. For the future, Article 4(1)(15) MiFID II defines financial instruments as "instruments specified in Section C of Annex A, including such instruments issued by means of distributed ledger technology". Crypto currencies are still not covered by Section C of Annex A, as they are not based on a contractual obligation. The amendment in Article 4(1)(15) MiFID II is not intended to create a new class of financial instruments (cf. recital 59 Regulation 2022/858). The amended Article 4(1)(15) MiFID II is also not included in the list of references beginning with Article 1(2) EIR Recast and ending with Article 4(1)(2) MiFID II. Lastly, the amended Article 4(1)(15) MiFID II is only applicable from 23.3.2023 onwards (Article 19(2) Regulation 2022/858).

27 With similar reasoning in relation to insurance undertakings, K. van Zwieten, in Bork and van Zwieten (eds.), *European Insolvency Regulation*, 2nd ed. (Oxford University Press 2022), Art. 1 para. 1.62.

28 The COMI is defined as the place where the debtor conducts the administration of its interests on a regular basis and which is ascertainable by third parties (Art. 3(1) sentence 2 EIR Recast). Landmark cases by the European Court of Justice are, *inter alia*, the Eurofood decision (judgment 2 May 2006 – C-341/04), the Deko Marty decision (judgment 12 February 2009 – C-339/07), and the Interedil decision (judgment 20 October 2011 – C-396/09).

29 See for a discussion of the question of the applicable conflict rule for crypto-assets, D. Skauradszun, Das Internationale Privatrecht der Kryptowerte, elektronischen Wertpapiere und Kryptowertpapiere [The Private International Law of Crypto-Assets, Electronic Securities and Crypto Securities] (2022) Zeitschrift für die gesamte Privatrechtswissenschaft 56 et seq.

30 However, there are gaps. For example, Art. 7 EIR Recast et seq. do not regulate which law to apply to the transfer of crypto-assets.

the lex fori concursus not only for the insolvency proceedings themselves, but also for the question of which assets form part of the insolvency estate (Art. 7(2) sentence 2 (b) EIR Recast) and the ranking of creditors (Art. 7(2) sentence 2 (g)(i) EIR Recast).[31] So the Member State opening insolvency proceedings over the assets of a debtor determines the substantive law on the question of whether crypto-assets form part of the insolvency estate and the ranking of creditors. Of course, it would be easier if European law were uniform on which assets belong to the insolvency estate and the ranking of creditors. At least we have a uniform rule on which Member State may decide this question.

2.3.4 Principle of Universality

The principle of universality also applies. If the debtor's centre of main interests is situated, for instance, in Portugal, the Portuguese courts have international jurisdiction to open insolvency proceedings, which then results in the application of Portuguese substantive insolvency law. Portuguese law therefore applies to the insolvency proceedings themselves, but also to the question of whether crypto-assets form part of the insolvency estate. Since the European Insolvency Regulation is based on universal scope—the so-called principle of universality[32]—it does not matter whether crypto-assets are located in Portugal, Spain, Italy, or Germany. The Portuguese proceedings will cover all assets wherever they are situated in Europe.[33] Whether a blockchain based asset, therefore, is situated in more than one EU Member State or even worldwide does not matter in principle. The Portuguese proceedings may also cover crypto-assets situated in multiple states around the world.

3. Crypto-Assets as Part of the Insolvency Estate

Whether crypto-assets are included in a specific insolvency estate cannot, however, be answered uniformly for all EU Member States. From the creditors' point of view, inclusion is aligned with their interests, because the larger the insolvency estate, the smaller the creditors' losses. Furthermore, it should not be possible for a debtor to invest in crypto-assets or to exchange assets, in particular, legal tender, into crypto-assets in the short term in order to reduce the insolvency es-

31 Art. 7(2) sentence 2 (b) EIR Recast, is therefore a choice of law rule, A. Piekenbrock, in M. Brinkmann (ed.), *European Insolvency Regulation* (CH Beck 2019), Art. 7, para. 11.

32 See, for the principle of universality, Recital 23 EIR Recast; M. Brinkmann, in M. Brinkmann (ed.), *European Insolvency Regulation* (CH Beck 2019), Introduction, para. 11. In principle, universal scope means that the insolvency proceedings cover assets wherever they are situated around the world, see S. Madaus, in B. M. Kübler, H. Prütting and R. Bork (eds.), *InsO*, 90th ed. (RWS 2021), Art. 3 EIR, para. 2; D. Skauradszun, in B. M. Kübler, H. Prütting and R. Bork (eds.), *InsO*, 92nd ed. (RWS 2022), Art. 19 EIR, para. 1; Bornemann (2022), Vorbemerkung [preliminary remark], para. 9.

33 If the debtor possesses an establishment within the meaning of Art. 2(10) EIR Recast, i.e. a non-transitory economic activity with human means and assets, the Member State in which the establishment is situated shall have jurisdiction to open secondary insolvency proceedings (Art. 3(2) EIR Recast). The effects of those secondary insolvency proceedings shall be restricted to the assets of the debtor situated within the territory of the Member State in which those proceedings have been opened (Art. 34(3) EIR Recast, known as the modified principle of universality, see Recital 22 EIR Recast). It then depends on whether crypto-assets are actually only situated in this territory. This also applies if the blockchain is operated exclusively in this Member State. In the case of currency tokens, however, the blockchain is usually distributed worldwide. Moreover, Art. 2(9) EIR Recast contains numerous definitions for the question of where assets are located; Crypto-assets are not explicitly mentioned.

tate. Notwithstanding these concerns, the desirability of including crypto-assets in the insolvency estate, or an appeal to our sense of fairness, are not in themselves sufficient to decide the matter.

3.1 Synchronism between Enforcement and Insolvency Law

Under national law, as a general rule, the insolvency estate includes all assets belonging to the debtor at the time when the insolvency proceedings are opened.[34] However, in many European countries such as Portugal,[35] Spain, Greece and Germany, the principle is also that only enforceable assets belong to the insolvency estate.[36] For instance, under Art. 76 of the Spanish Ley Concursal, the estate is formed by the assets and pecuniary rights belonging to the debtor at the time of the opening of insolvency proceedings. However, an exclusion is made for those assets that cannot be subject to seizure under the relevant statutory provisions. In Greece, Law No. 4738/2020 defines the insolvency estate in Art. 92, stipulating an exclusion in para. 5: assets that cannot be attached under general procedural law do not belong to the insolvency estate. Similarly, the German Insolvency Code lays down in Sec. 36(1)(1) that objects not subject to compulsory enforcement do not form part of the insolvency estate. This shows that insolvency law has historically been intertwined with enforcement law,[37] which is why this examination mentions crypto-assets in both enforcement and insolvency.

3.2 Crypto-Assets as Subject of Enforcement

Compulsory enforcement measures in the Member States can generally be divided into enforcement against movable and immovable property.[38] It may be assumed that there is broad

34 In Greece, for instance, the insolvency estate comprises all assets belonging to the debtor at the time the insolvency is declared, wherever located (Art. 92(1) Law No. 4738/2020). The German law states that the insolvency estate includes all assets which belong to the debtor at the time when the proceedings are commenced and which the debtor acquires during the proceedings (Sec. 35(1) Insolvency Code).

35 Macedo and Coelho (2022) 17.

36 This principle does not only apply to natural persons as debtors but also in general. Specifically on German law, B. Peters, in *Münchener Kommentar zur Insolvenzordnung*, 4th ed. (CH Beck 2019), Sec. 35, para. 16; J. Holzer, in B. M. Kübler, H. Prütting and R. Bork (eds.), *InsO*, 74th ed. (RWS 2017), Sec. 36, para. 3; H. Hirte and J.-P. Praß, in Uhlenbruck, *InsO*, 15th ed. (CH Beck 2019), Sec. 35, para. 13; explicitly concerning crypto-assets M. Tresselt, in A. Schmidt (ed.), *Sanierungsrecht* [Restructuring Law], 2nd ed. (Wolters Kluwer and Heymanns 2019), part 1, chapter 1, para. 15; D. Skauradszun, 'Kryptowerte im Insolvenzverfahren des Anlegers oder Emittenten' [Crypto-assets in insolvency proceedings of the investor or issuer] (2021) Zeitschrift für Wirtschaftsrecht 2610, 2611; M. d'Avoine and P. Hamacher, 'Kryptowährungen im Insolvenzverfahren' [Cryptocurrencies in insolvency proceedings] (2022) Zeitschrift für Wirtschaftsrecht 6, 9; M. Strauch and B. Handke, in P. Maume and L. Maute (eds.), *Rechtshandbuch Kryptowerte* [Legal handbook on crypto-assets] (CH Beck and Vahlen 2020), chapter 2, Sec. 10, para. 39, at least examine the limitation under Sec. 36(1)(1) German Insolvency Code, which indicates consent to this approach. Taking a different line, Krüger (2022) 1261, 1264, applying the limitation only to natural persons.

37 For example, German enforcement law came into being at about the same time as German bankruptcy law: in the Civil Procedure Code of 1877 in the one instance, and in the Bankruptcy Code [Konkursordnung] of 1877, in the other. Both acts—the current Civil Procedure Code and the current Insolvency Code—make frequent reference to each other and both aim to satisfy creditors, W.-D. Walker, in H. Brox and W.-D. Walker, *Zwangsvollstreckungsrecht* [Enforcement law], 12th ed. (Vahlen 2021), Sec. 1, para. 8.

38 The Brussels Ia Regulation contains special provisions for immovable property (e.g., Art. 24(1) Brussels Ia); however, Chapter III on recognition and enforcement is written in a broad sense and allows enforcement of judgments given in one Member State in other Member States (Art. 39 Brussels Ia). It is then up to the national enforcement law to define enforceable property, T. Hartley, *Civil jurisdiction and judgments in Europe* (Oxford University Press, 2017), para. 17.13.

consensus in the Member States that the rules on compulsory enforcement against immovable property are not applicable.[39] Crypto-assets are neither listed in land registers nor comparable to plots of land, which is why provisions on enforcement against immovable property do not seem applicable.

Enforcement against movable property may serve as an umbrella term encompassing enforcement against physical objects, such as the seizure of a physical security paper, enforcement against claims, such as the seizure of a claim arising from (electronic) securities[40] and, lastly, enforcement against other property rights.

Within the scope of enforcement against movable property, the seizure of physical objects is not usually possible in the case of crypto-assets.[41] Court bailiffs cannot take away crypto-assets in the physical sense.[42] Assuming that crypto-assets such as cryptocurrencies either do not give rise to claims[43] or that crypto-assets such as security tokens are more than claims anyway,[44] this category is also precluded.[45]

However, national enforcement law often contains a general clause for other property rights under which crypto-assets may fall.[46] If this turns out to be the case, crypto-assets are subject to enforcement and so form part of the insolvency estate.

The question then arises of whether crypto-assets are realisable for the benefit of creditors.

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39 Krüger (2022) 1261, 1264.

40 See D. Skauradszun, 'Elektronische Wertpapiere in der Zwangsvollstreckung' [Electronic securities in enforcement proceedings] (2022) Zeitschrift für Zivilprozess 135, forthcoming.

41 d'Avoine and Hamacher(2022) 6, 9.

42 J. M. Schmittmann and C. C. Schmidt, 'Elektronische Wertpapiere und Kryptowährungen in Zwangsvollstreckung und Insolvenz' [Electronic Securities and Cryptocurrencies in Enforcement and Insolvency] (2021) Deutsche Zeitschrift für Wirtschafts- und Insolvenzrecht 648, 649.

43 Users of a blockchain network who exchange cryptocurrencies typically join the network without wanting to be legally bound. They do not want to conclude a contract and do not want to establish mutual claims. Cf. D. Skauradszun, 'Kryptowerte im Bürgerlichen Recht' [Crypto-assets in Civil Law(2021) Archiv für die civilistische Praxis 221, 353, 366.

44 See, on how under German law some crypto-assets may give rise to claims but should be understood in a broader sense, Skauradszun (2021a), 353, 365 et seq.; Skauradszun (2022c).

45 Skauradszun (2021b) 2610, 2612; d'Avoine and Hamacher(2022) 6, 9. In the case of crypto-assets that give rise to claims, on the other hand, it is possible to seize those claims, Schmittmann and Schmidt (2021) 648, 649; Krüger (2022) 1261, 1264.

46 Under German law the relevant catch-all provision reads (translated) "The above provisions [those on attachments of claims] shall apply mutatis mutandis to compulsory enforcement against other property rights that are not subject to compulsory enforcement against the immovable property" (Sec. 857(1) German Civil Procedure Code). For the authors applying Sec. 857(1) Civil Procedure Code to crypto-assets, see D. Skauradszun, 'Durchbruch bei der Pfändung und Verwertung von Kryptowerten nach § 857 Abs. 1 und 5 ZPO, § 1 Abs. 11 S. 4 KWG n. F.' [Breakthrough in the seizure and realisation of crypto-assets under Sec. 857(1)(5) Civil Procedure Code, Sec. 1(11) sentence 4 Banking Act] (2020) Zeitschrift für Wirtschafts- und Bankrecht – Wertpapier-Mitteilungen 1229, 1233; Skauradszun. (2021b) . 2610, 2612; d'Avoine and Hamacher (2022). 6, 9; Krüger (2022) 1261, 1264.

4. The Insolvency Practitioner

Application of the European Insolvency Regulation has another advantage when realising crypto-assets situated in multiple Member States. In certain cases, the insolvency practitioner needs to access a wallet that is not administered in the state where the proceedings were opened but in another Member State. It is also possible that, for instance, a Portuguese debtor has deposited their private keys[47] for the wallet with a crypto custodian, e.g. a bank in France. Art. 21(1) EIR Recast awards the insolvency practitioners in all other Member States the same rights as they were given in the state where the proceedings were opened.[48] The insolvency practitioner can therefore request the French bank to use the private key for a transaction and is not limited by the borders of the opening Member State.[49]

In addition, national insolvency law usually provides that the debtor must cooperate with the insolvency practitioner,[50] e.g. by providing the information on crypto-assets, the wallet(s), and the private key(s).[51] It is of course known that private debtors sometimes try to keep crypto-assets secret or claim to have forgotten the private keys.[52]

If the insolvency practitioner has discovered crypto-assets and obtains the private keys for the transactions, it is common practice to exchange the crypto-assets for legal tender at a (state) crypto exchange.[53]

Generally speaking, insolvency practitioners are probably not yet very familiar with the relatively recent phenomenon of crypto exchanges and have little experience of how crypto-assets are sold and converted into legal tender. However, specialised traders or advisors can be used for this.

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47 The private key could read, for instance, "KwRSDUPhNJ3R8HwyvmwvvJHtasj 9SGxnZ1DxuGuJZfmCSC7ovhQf".

48 With respect to the secondary insolvency proceedings mentioned in fn. 32, insolvency practitioners are allowed to claim that moveable property was removed from the territory of the State of the opening of proceedings. However, crypto-assets based on distributed ledger technology are not situated at one place but widely spread, which is why insolvency practitioners cannot normally use the right under Art. 21(1) EIR Recast. R. Hänel, in H. Vallender, *EIR*, 2nd ed. (RWS 2020), Art. 21 EIR, para. 34, therefore suggested that, in the event of doubt, crypto-assets should form part of the insolvency estate of the main insolvency proceedings.

49 Under German law, the right of this instruction by the insolvency practitioner against a crypto custodian derives from Sec. 80(1) Insolvency Code, Skauradszun (2021) 2610, 2615 et seq.

50 In German law, Sec. 97(1)(1) Insolvency Code reads (translated): "The debtor must disclose information regarding all circumstances relevant to the insolvency proceedings to the insolvency court, the insolvency administrator, the creditors' committee and, if ordered to do so by the court, the creditors' meeting".

51 Krüger (2022) 1261, 1266.

52 d'Avoine and Hamacher (2022) 6, 9. On coercive measures that insolvency practitioners may seek under German law (such as compulsory attendance by the debtor, affidavits (affirmation in lieu of an oath), and orders for detention of the debtor), see Sec. 98 Insolvency Code and Schmittmann and Schmidt (2021) 648, 651; Skauradszun (2021) 2610, 2615; d'Avoine and Hamacher (2022) 6, 11.

53 Schmittmann and Schmidt (2021) 648, 652. For example, the Stuttgart stock exchange offers a specific exchange for cryptocurrencies, available at https://www.bsdex.de/en/ (last reviewed 12 June 2022). d'Avoine and Hamacher (2022) 6, 11, suggest sale of the private key as an alternative course of action for the insolvency practitioner.

5. Creditors' Rights in the Insolvency of the Issuer or Crypto Custodian

Applicability of the European Insolvency Regulation has another advantage, as the Regulation also contains a conflict rule regarding the claims which are to be lodged against the debtor's insolvency estate and the ranking of claims (Art. 7(2) sentence 2 (g)(i) EIR Recast). This lays down that the Member State of the opening of insolvency proceedings shall determine the ranking of claims.[54]

5.1 Issuers of Security Tokens/Investment Tokens

In the event of the insolvency of the issuer of a crypto-asset, such as a security token, a special contractual clause in the terms of issue can be observed on the market. Investors in security tokens receive claims against the issuer. However, it is frequently agreed in the security token terms and conditions of that, in the event of the issuer's insolvency, these claims are merely subordinate.[55] Often, the issuer and the investor stipulate that this is the last rank of the waterfall.[56] Such claims then usually default totally in the event of the issuer's insolvency. The investors must therefore write off their claims.

A case in point in Germany is the Bitbond issue; an excerpt from the terms and conditions of issue illustrates this reality.[57]

> "The token-based bonds confer equal rights on the creditors of the token-based bonds and subordinate rights on the creditors of the Issuer in relation to the claims of other creditors of the Issuer. If the Issuer is liquidated, dissolved or insolvent or any proceedings to avert the Issuer's insolvency are initiated, the rights attaching to the token-based bonds shall rank second (qualified subordination) to all of the Issuer's other existing and future non-subordinated liabilities pursuant to Sec. 39 InsO."[58]

5.2 Crypto Custodians

The following chapter on crypto custodians reports on the German legal situation. The status of a crypto custodian's customer in its insolvency has — as far as can be seen — not yet been

54 R. Snowden, in R. Bork and K. van Zwieten (eds.), *Commentary on the European Insolvency Regulation*, 2nd ed. (Oxford University Press, 2022), Art. 7, para. 7.60; Mock (2022), Art. 7 EIR Recast, para. 51, 54.

55 Such a subordination agreement is not governed by the *lex causae* but by the *lex fori concursus*, Piekenbrock (2019) Art. 7, para. 75.

56 The waterfall principle under insolvency law describes which creditors may segregate assets from the insolvency estate, which creditors can claim separate satisfaction (secured creditors), which creditors have preferential claims, which creditors only hold ordinary insolvency claims (unsecured creditors), and which creditors rank only as subordinated creditors (lower-ranked creditors).

57 Available at https://www.bitbondsto.com/files/bitbond-sto-prospectus.pdf (last reviewed 12 June 2022).

58 Securities Prospectus of Bitbond Finance LLC from January 30, 2019, no. 7.2.4 Ranking of securities.

decided by German courts. This is also due to the fact that crypto custody business has only been regulated by German law since 1 January 2020 (Sec. 1(1a) sentence 2 (6) German Banking Act[59]) and only since that date has it been possible for applications for authorisation to carry on crypto custody business to be submitted to the German Financial Supervisory Authority (BaFin). It appears that no insolvency proceedings have yet been opened with regard to the assets of a crypto custodian in the ensuing period of approximately 1.5 years.

In any case, the Council of the European Union is seeking to oblige national legislators to ensure that crypto-assets held in custody are insulated in accordance with national law in the interest of the clients of the crypto-asset service provider against the claims of other creditors, as shown by the draft of Art. 67 MiCAR, as amended by the Council.[60]

If insolvency proceedings are opened concerning the assets of a crypto custodian in Germany under current law and German law applies to the question of ranking of claims (Art. 7(2) sentence 2 (g)(i) EIR Recast), a right to segregation could arise if the customer can claim on the basis of a right in rem or a personal right (cf. Sec. 47 sentence 1 Insolvency Code) that the crypto-assets do not form part of the insolvency estate. In detail, however, the legal situation under insolvency law will depend on the exact technology of the wallet and the allocation of the crypto-assets to the customers.[61]

Future European legislation suggests the existence of a right to segregation for customers of crypto custodians. Although there is no explicit mention of a right to segregation in the draft MiCAR, there are several articles and recitals explicitly mentioning activities of crypto custodians and pointing to the existence of a right to segregation.

59 The definition reads: "[Finanzdienstleistungen sind] die Verwahrung, die Verwaltung und die Sicherung von Kryptowerten oder privaten kryptografischen Schlüsseln, die dazu dienen, Kryptowerte für andere zu halten, zu speichern oder darüber zu verfügen, sowie die Sicherung von privaten kryptografischen Schlüsseln, die dazu dienen, Kryptowertpapiere für andere nach § 4 Absatz 3 des Gesetzes über elektronische Wertpapiere zu halten, zu speichern oder darüber zu verfügen (Kryptoverwahrgeschäft)". This definition and the definition of crypto-assets have been amended in line with the German Banking Act, transposing the 5th EU Directive on the prevention of money laundering into national law.

60 See for the amended text under II. 1. It is unclear whether the term `insulated', which is rather uncommon in insolvency law, means that creditors should have a right of segregation. It appears so.

61 As far as can be seen, there has been no court decision in Germany nor any discussion in German literature as to whether customers' claims from an insolvent custodial service with a segregated wallet give customers a right to segregation. However, forthcoming, D. Skauradszun, S. Schweizer and J. Kümpel, 'Das Kryptoverwahrgeschäft und der insolvenzrechtliche Rang der Kunden – Aussonderung oder Insolvenzquote?' (2022) Zeitschrift für Wirtschaftsrecht. There are striking similarities between trusts for the benefit of the individual customer- where a right to segregation pursuant to sec. 47 German Insolvency Code exists according to the prevailing opinion (W. Henkel, in Ernst Jaeger, *InsO*, vol. 1, (De Gruyter 2004), sec. 47 para. 61; M. Brinkmann, in Wilhelm Uhlenbruck (ed.), *InsO*, 15th ed. (Vahlen 2019), sec. 47 para. 78)- and custodial services with a segregated wallet. As long as the trust property and the custodian's own property remain separate, application of the prevailing opinion on trusts for the benefit of the individual customer seems reasonable. A similar discussion has yet to be held about omnibus wallets. In this case, the omnibus wallet can also be characterised as a trust. An important aspect of trusts is the principle of immediacy, meaning the trustor's property needs to enter the trustee's assets directly. This is what happens with omnibus wallets, as the customer's legal tender directly enters the custodian's assets. As long as these assets remain separated- an internal bookkeeping ledger is sufficient- we may convincingly apply the prevailing opinion on the right to segregation in the case of a trust to an omnibus wallet. However, this may cease to hold as soon as the custodian trades more crypto-assets for its own account than it is entitled to, breaching the trust agreement in the process. This assessment concerning omnibus wallets is in line with Swiss law. Art. 242a sentence 2, Swiss Insolvency Act reads (translated): "The claim [to segregation] is justified if the bankrupt is committed to keeping the crypto-assets available for the third party at all times and these: a. are individually assigned to the third party; or b. are assigned to a community and it is clear which share of the community assets the third party is entitled to". In the explanatory memorandum for the law (BBl 2020, 233, 265 dated 27 November 2019) it is argued that assignment of the assets to third parties, even outside the register (in the case in hand: the blockchain), is sufficient.

For instance, Art. 67(10) of the draft MiCAR requires Member States to ensure crypto-assets held in custody for clients are insulated from the claims of other creditors under national law in the interest of crypto custodian's clients, particularly in the event of insolvency. The term "insulated" suggests the European legislator's aim to separate crypto-assets held in custody for the clients from the crypto custodian's own assets[62] in the event of insolvency, thereby protecting the customers' legal position. Within German law, the European legislator's aim can (only) be achieved by means of a right to segregation, as provided for in Sec. 47 of the German Insolvency Code.

Additionally, a general duty to protect clients of crypto service providers[63] is stipulated in Art. 63(1) of the draft MiCAR.[64] A crypto service provider is therefore required to take measures to protect his clients' ownership rights in the event of insolvency proceedings.

In addition to this, Art. 42(1) of the draft MiCAR[65] requires issuers of asset-referenced tokens to draw up a redemption plan to support an orderly redemption of asset-referenced tokens in the event of the issuer no longer being able to meet its obligations, for example in the event of insolvency. While there is no explicit mention of crypto custodians, this article nonetheless expresses the European legislator's aim of protecting customers of crypto services in general.

Recitals 37[66] and 43[67] of the draft MiCAR proclaim a similar goal by emphasising the need to protect the rights of clients of crypto service providers.

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62 This is emphasised by Art. 67(7) sentence 2, MiCAR-draft: "They shall ensure that, on the DLT, their clients' crypto-assets are held on separate addresses from those on which their own crypto-assets are held".

63 Crypto-asset service providers means any natural person, legal person or undertaking whose occupation or business is the provision of one or more crypto-asset services to third parties on a professional basis (Art. 3(1) no. 8 MiCAR-draft). Crypto service means any of the services and activities listed in Art. 3(1)(9) MiCAR-draft. Point 9 mentions the custody and administration of crypto-assets on behalf of third parties and also the exchange of crypto-assets for funds.

64 "Crypto-asset service providers that hold crypto-assets belonging to clients or the means of access to such crypto-assets shall make adequate arrangements to safeguard the ownership rights of clients, especially in the event of the crypto-asset service provider's insolvency, and to prevent the use of a client's crypto-assets for their own account".

65 "Issuers of asset-referenced tokens shall draw up and maintain an operational plan to support an orderly redemption of each asset-referenced tokens to be implemented upon a decision by the competent authority where the issuer is unable or likely to be unable to comply with its obligations, including in the case of insolvency or withdrawal of authorisation of the issuer without prejudice to the commencement of a crisis management procedure".

66 "In order to cover their liability, issuers of asset-referenced tokens should constitute and maintain a reserve of assets matching the risks reflected in such liability. Such reserve of assets serves the function of collateralising the issuer liabilities against holders of asset-referenced token. The reserve of assets should be used in benefit of the holders of the asset-referenced token when the issuer is not able to comply with its obligations towards the holders, such as in insolvency. The reserve of assets shall be composed and man-aged in such a way that the issuer of asset-referenced tokens does not face market and currencies risks".

67 "Issuers of asset-referenced tokens should have a plan for the orderly redemption of the tokens to ensure that the rights of the holders of the asset-referenced tokens are protected where issuers of asset-referenced tokens are not able to comply with their obligations. Where the issuer of asset-referenced tokens is a credit institution the competent authority should consult the resolution authority. The resolution authority thereof, should take into consideration the operational plan to support an orderly redemption of the asset-referenced tokens when drafting the resolution plans and when preparing the resolution of such credit institutions and assess its compatibility with the preferred resolution strategy. Taking into account of the redemption plan by the resolution authority should not affect the resolution authority's powers to take a crisis prevention measure or a crisis management measure".

This intention of strong customer rights in the event of insolvency can only be achieved by means of a right to segregation. The comprehensive protection that the European legislator envisages for customers of crypto service providers suggests that such a right to segregation should exist, as Art. 67(10) of the draft MiCAR amply illustrates. Other possible creditors' rights, such as rights to separate satisfaction or preferential satisfaction, cannot segregate the crypto-assets from the insolvency estate. Instead, they are limited to claiming the value of the assets or preferential or equal treatment. This is structurally different from claiming the assets for retransfer or onward transfer. There are accordingly good reasons for assuming a right to segregation exists in the case of insolvency of a crypto custodian.

6. Conclusions

1) Two regulations might help to deal with crypto-assets in enforcement and insolvency: the Brussels Ia Regulation and the recast European Insolvency Regulation.

2) In particular, the recast European Insolvency Regulation helps in terms of international jurisdiction and the applicable law. In general, the Member State opening insolvency proceedings over the assets of the debtor—including an issuer or a crypto custodian—determines the assets which form part of the insolvency estate and the ranking of creditors.

3) In many Member States there needs to be a comprehensive reasoning why crypto-assets form part of the insolvency estate, but they do normally if the respective Member State allows enforcement against property rights other than physical objects, claims, and land, and permits enforcement in other property rights.

4) In customer insolvency proceedings, the problems lie less on the legal side than on the practical side: insolvency practitioners do not yet have significant experience in detecting and realising crypto-assets whilst debtors seek to conceal their crypto-assets and claim to have forgotten the private key.

5) In issuer insolvency proceedings the investors will normally be subordinate claimants due to a subordination agreement in the terms of issue.

6) In essence, the insolvency ranking of customers in the crypto custodian's insolvency depends on whether the customers' assets have remained separate from the crypto custodian's assets. In segregated wallet arrangements, there are no serious doubts about the right to segregation. With omnibus wallet arrangements – qualifying as a trust - there is a convincing case for allowing a right to segregation as long as the trust property remains separate from the crypto custodian's own assets. Although there is no explicit mention of a right to segregation in the draft MiCAR, there are several articles and recitals that explicitly point to the existence of a right to segregation.

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The Licensing Rules in MiCA

by Filippo Annunziata [1]

Abstract

This paper aims to provide an analysis of licensing rules contained in the upcoming, new Markets in Crypto-Assets Regulation (MiCA). It focuses on MiCA's general features and on the different licensing rules concerning, on the one hand, issuers of tokens and, on the other hand, crypto-assets service providers. The special regime envisaged in MiCA for asset-referenced tokens and e-money tokens is also discussed, always from a licensing perspective. A specific survey is also provided of the complex grandfathering rules contained in MiCA, as applicable to entities already licensed under existing EU financial legislation.

Keywords: Crypto-assets, tokens, electronic money, stablecoins, digital finance, MiCA.

1. Introduction.

In September 2020, as part of its Digital Finance Package, the European Commission introduced a proposal for a Regulation on Markets in Crypto-Assets (MiCA)[2], reflecting the general policy objectives and regulatory targets laid down in the European Digital Finance Strategy[3]. After several rounds of discussions involving stakeholders from the public and private sectors – including the European

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2 See European Commission, *Proposal for a Regulation of the European Parliament and of the Council on Markets in Crypto-Assets and amending Directive (EU) 2019/1937* (24 September 2020) COM(2020) 5993 final, https://ec.europa.eu/transparency/regdoc/rep/1/2020/EN/COM-2020-593-F1-EN-MAIN-PART-1.PDF (accessed 12 August 2022).

3 European Commission, *Communication to the European Parliament, the European Council, the Council, the European Economic and Social Committee and the Committee of the Regions on a Digital Finance Strategy for EU* COM(2020)591.

Central Bank[4] -, the European Council adopted its position, in November 2021, publishing its negotiation mandate on the matter[5]. This was followed, on 14 March 2022, by the vote in the European Parliament's Committee on Economic and Monetary Affairs on its own draft of MiCA[6]. Inter-institutional negotiations (leading to the trilogues) ensued in April 2022 and a provisional agreement on the proposal was finally reached by the Commission, the Council Presidency and the Parliament on 30 June 2022[7]. With the endorsement of the final draft on 5 October 2022[8], the legislative process is now expected to continue towards the final vote in the Parliament and the formal adoption procedure.

In the context of an ongoing legislative procedure, these notes aim to analyse how MiCA addresses licensing principles applicable to the entities covered by its scope. The objective is not to pinpoint all the (comprehensive) rules that will ultimately discipline markets in crypto-assets and the respective players, but rather to delve into the explicit and implicit notions that stem from the latest version of MiCA, especially taking into consideration its interplay with the existing body of EU financial law. More specifically, these notes will investigate how the activities regulated by MiCA translate into specific licensing requirements and how the latter interrelate with other EU financial legislation.

2. Overview of the MiCA regime.

2.1 Types of crypto-assets and the perimeter of the Regulation.

The precise delimitation of the licensing requirements laid down under the MiCA framework depends on understanding the regulatory design crafted by the EU legislator to capture the differ-

4 European Central Bank, *Opinion of 19 February 2021 on a proposal for a regulation on Markets in Crypto-assets, and amending Directive (EU) 2019/1937* (CON/2021/4) 2021/C 152/01, https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A52021AB0004 (accessed 13 September 2022).

5 Council of the European Union, *Proposal for a Regulation of the European Parliament and of the Council on Markets in Crypto-Assets, and amending Directive (EU) 2019/1937* [2021] 2020/0265(COD), https://www.consilium.europa.eu/media/53105/st14067-en21.pdf (accessed 13 September 2022).

6 European Parliament Committee on Economic and Monetary Affairs, *Report on the proposal for a regulation of the European Parliament and of the Council on markets in crypto-assets and amending Directive (EU) 2019/1937 (COM(2020)0593-C9-0306/2020-2020/2020/0265)* [2022] A9-0052/2022, https://www.europarl.europa.eu/doceo/document/A-9-2022-0052_EN.html (accessed 13 September 2022).

7 The press release is available at: https://www.consilium.europa.eu/en/press/press-releases/2022/06/30/digital-finance-agreement-reached-on-european-crypto-assets-regulation-mica/ (accessed 13 September 2022).

8 Council of the European Union, *Letter to the Chair of the European Parliament Committee on Economic and Monetary Affairs, 'Proposal for a Regulation of the European Parliament and of the Council on Markets in Crypto-assets, and amending Directive (EU) 2019/1937 (MiCA)'*, Interinstitutional file 2020/0265 (accessed 5 October 2022). The analysis provided here will be based on this version of the text, even though some provisions may still differ from the final legislation that ultimately comes into force.

ent spectra of the wide-ranging and ever-evolving crypto-asset phenomena[9]. The categories now enshrined in MiCA are the by-product of long discussions, at both international and European level[10], that preceded the first draft of MiCA proposed by the Commission in 2020. In the EU, the European Securities and Markets Authority (ESMA)[11], the European Banking Authority (EBA)[12] and the European Central Bank (ECB)[13] hugely contributed to the debate, offering a synthetic three-pronged classification system which served as the backbone for the architecture ultimately embraced by the Commission.

This classification system is essentially structured as follows: (i) utility tokens typically grant rights of access to a specific product or service often provided by a platform or company, not usually considered a traditional security or financial asset[14]; (ii) security tokens (sometimes also called investment or financial tokens) typically provide rights in the form of ownership and/or entitlements similar to dividends, being tied to an underlying asset and representing fractional ownership of the overall value of the asset, often falling under financial regulatory regimes (e.g. financial products, securities, financial instruments, derivatives or collective investment schemes); and (iii) payment tokens (sometimes also called currency tokens), typically do not provide rights but are used as a means of exchange (e.g. to enable the buying or selling of goods), or, possibly, for the storage of value. Within the latter category, a sub-classification is usually made

9 See Filippo Annunziata, 'Speak, If You Can: What Are You? An Alternative Approach to the Qualification of Tokens and Initial Coin Offerings' (2019) Bocconi Legal Studies Research Paper No. 2636561. See also, *ex multis*, Aneta Vondrackova, 'Regulation of Virtual Currency in the European Union', Charles University in Prague Faculty of Law Research Paper No. 2016/III/3; Philipp Hacker and Chris Thomale, 'Crypto-Securities Regulation: ICOs, Token Sales and Cryptocurrencies under EU Financial Law' (2018) 15 European Company and Financial Law Review 645-696; Usman Chohan, 'Assessing the Differences in Bitcoin & Other Cryptocurrency Legality Across National Jurisdictions' (2017) https://ssrn.com/abstract=3042248 (accessed 12 September 2022); Dirk Zetzsche, Filippo Annunziata, Douglas Arner and Ross Buckley, 'The Markets in Crypto-Assets Regulation (MICA) and the EU Digital Finance Strategy', University of Luxembourg Law Working Paper Series No. 2020-018; Iris Barsan, 'Legal challenges of Initial Coin Offerings' (2017) 3 Revue Trimestrielle de Droit Financier 54, 62; Philipp Maume and Mathias Fromberger, 'Regulations of Initial Coin Offerings: Reconciling U.S. and E.U. Securities Laws' (2019) 19 Chicago Journal of International Law 548, 558; Dirk Zetsche, Ross Buckley, Douglas Arner and Linus Föhr, 'The ICO Gold Rush: It's a scam, it's a bubble, it's a super challenge for regulators' (2019) 60 Harvard International Law Journal 267; Jonathan Rohr and Aaron Wright, 'Blockchain-based token sales, Initial Coin Offerings, and the democratization of public capital markets' (2019) 70 Hastings Law Journal 463, 469.

10 See, for example, Apolline Blandin, Ann Cloots, Hatim Hussain, Michel Rauchs, Rasheed Saleuddin, Jason Allen, Bryan Zhang and Katherine Cloud, 'Global cryptoassets regulatory landscape study', U. Cambridge Fac. L. Res. Paper No. 23/2019; Swiss Financial Market Supervisory Authority, 'Federal Council wants to further improve framework conditions for DLT/blockchain' (27 November 2019) <https://www.admin.ch/gov/en/start/documentation/media-releases.msg-id-77252.html> (accessed 10 August 2022); Autorité des marchés financiers, 'Discussion Paper on Initial Coin Offerings (ICOs)' (2017); Commissione Nazionale per le Società e la Borsa, 'Le offerte iniziali e gli scambi di crypto-attività', (2019) http://www.consob.it/documents/46180/46181/doc_disc_20190319.pdf/64251cef-d363-4442-9685-e9ff665323cf (accessed 10 August 2022).

11 European Securities and Markets Authority, 'Advice on Initial Coin Offerings and Crypto-Assets', 9 January 2019 (ESMA50-157-1391), https://www.esma.europa.eu/sites/default/files/library/esma50-157-1391_crypto_advice.pdf (accessed 10 August 2022).

12 European Banking Authority, 'Report for advice for the European Commission, 9 January 2019, https://www.eba.europa.eu/sites/default/documents/files/documents/10180/2545547/67493daa-85a8-4429-aa91-e9a5ed880684/EBA%20Report%20on%20crypto%20assets.pdf (accessed 10 August 2022).

13 European Central Bank (2021).

14 Thomas Bourveau, Emmanuel George, Atif Ellahie and Daniele Macciocchi, 'Initial Coin Offerings: Early Evidence on the Role of Disclosure in the Unregulated Crypto Market'(2018) 60 Journal of Accounting Research 129–167.

to distinguish what are called stablecoins from ordinary payment tokens. Stablecoins are typically asset-backed (by physical collateral, hard currencies or other crypto-assets) or structured with algorithms to stabilise volatilities in their value[15].

The taxonomy for crypto-assets established in MiCA translates the above definitions using the following terminology: (i) asset-referenced tokens (ARTs), a term used exclusively to designate what are, or are close to, stablecoins[16]; (ii) e-money tokens (EMTs), coined to refer to payment tokens not qualifying as ARTs[17]; and (iii) "crypto-assets, other than asset-referenced tokens or e-money tokens" (or simply, "other crypto-assets"), which essentially consist of utility tokens. On top of this taxonomy, the text adds a layer of prudential considerations, setting out certain thresholds above which a given ART or EMT may pose systemic risks to the market, attributing a scale of "significance" to these assets, thus mirroring a technique employed in other sectors of financial regulation since the 2008 crisis. As a result, two additional categories, (iv) "significant ARTs" (SARTs); and (v) "significant EMTs" (SEMTs) complete MiCA's architecture.

From the above considerations, it is clear that one of the three basic categories of crypto-assets generally contemplated by scholars and regulators, namely that of security tokens, is left entirely out of the scope of the MiCA regime. This is because security tokens are, in fact, already covered by existing EU legislation. The same applies to other kinds of tokens that fall within the scope of existing rules, with the exception of tokenised electronic money (EMTs).

In fact, the deliberate exclusion of these tokens from the perimeter of the MiCA framework is clearly reaffirmed by Article 2(3)(a) [18], which explicitly sets outside its scope of application crypto-assets that qualify as:

(i) financial instruments (as defined in Article 4(1), point (15), of Directive 2014/65/EU - MiFID II)[19],

15 See Financial Stability Board, 'Regulation, Supervision and Oversight of Global Stablecoin Arrangements' (2020), https://www.fsb.org/2020/10/regulation-supervision-and-oversight-ofglobal-stablecoin-arrangements/ (accessed 10 August 2020); International Organization of Securities Commissions, 'Global Stablecoin Initiatives" (OR01/2020) <https://www.iosco.org/library/pubdocs/pdf/IOSCOPD650.pdf> (accessed 10 August 2022).

16 Article 3, para. 1 (3) MiCA defines ART as "a type of crypto-asset that is not an electronic money token and that purports to maintain a stable value by referencing to any other value or right or a combination thereof, including one or more official currencies".

17 Article 3, para. 1 (4) MiCA defines EMT as "a type of crypto-asset that purports to maintain a stable value by referencing to the value of one official currency".

18 MiCA also assigns to ESMA the mandate of developing regulatory technical standards outlining the criteria and conditions for establishing when a crypto-asset is to be considered to be equivalent in substance to a financial instrument irrespective of its form, as per the subparagraph under Article 2(3): "By [18 months after entry into force], ESMA shall issue guidelines on the conditions and criteria for the qualification of crypto-assets as financial instruments".

19 Directive 2014/65/EU of the European Parliament and of the Council of 15 May 2014 on markets in financial instruments and amending Directive 2002/92/EC and Directive 2011/61/EU [2014] OJ L 173.

(ii) deposits (Article 2(1), point (3), of Directive 2014/49/EU of the European Parliament and of the Council - DGS)[20], structured deposits (as defined in Article 4(1), point (43), MiFID II),

(iii) funds (as defined in Article 4(25) of Directive 2015/2366/EU[21] - PSD2 -, other than EMTs),

(iv) securitisation positions (in the context of a securitisation as defined in Article 2, point (1), of Regulation (EU) 2017/2402 of the European Parliament and of the Council)[22],

(v) non-life or life insurance products falling within the classes of insurance listed in Annexes I and II to Directive 2009/138/EC (or reinsurance and retrocession contracts in the course of reinsurance or retrocession activities),

(vi) pension products that, under national law, are recognised as having the primary purpose of providing the investor with an income in retirement and that entitle the investor to certain benefits, officially recognised occupational pension schemes, within the scope of Directive (EU) 2016/2341 or Directive 2009/138/EC,

(vii) individual pension products for which a financial contribution from the employer is required by national law and where the employer or the employee has no choice as to the pension product or provider, a pan-European Personal Pension Product (as defined in Article 2(2) of Regulation (EU) 2019/12381),

(viii) social security schemes which are covered by Regulations (EC) No 883/2004 and (EC) No 987/2009 of the European Parliament and of the Council.

The main effect of this exclusion is, naturally, to subject crypto-assets of an eminently financial nature to the regimes applicable to typical financial phenomena, falling under the EU legislation on capital markets, banking or payments. In simple terms: MiCA regulates, and applies its licensing rules, only to those assets that are not yet covered by existing EU Financial Law (with the exception of tokenised electronic money). In doing so, and at the same time, the text largely mirrors the approaches and criteria already in place in those other areas of EU Law.

20 Directive 2014/49/EU of the European Parliament and of the Council of 16 April 2014 on deposit guarantee schemes [2014] OJ L 173.

21 Directive (EU) 2015/2366 of the European Parliament and of the Council of 25 November 2015 on payment services in the internal market, amending Directives 2002/65/EC, 2009/110/EC and 2013/36/EU and Regulation (EU) No 1093/2010, and repealing Directive 2007/64/EC [2015] OJ L 337/35.

22 Regulation (EU) 2017/2402 of the European Parliament and of the Council of 12 December 2017 laying down a general framework for securitisation and creating a specific framework for simple, transparent and standardised securitisation, and amending Directives 2009/65/EC, 2009/138/EC and 2011/61/EU and Regulations (EC) No 1060/2009 and (EU) No 648/2012 [2017] OJ L 347.

This prompts us to point out two important features of the MiCA regime, which should not be neglected:

- its negative inter-connectivity with the broader framework of EU financial law: the scope of MiCA is ultimately identified in a negative way, i.e. in terms of what is not yet regulated, dangerously assuming (or even, taking for granted) that this approach is sufficiently clear[23];
- its reliance upon rules, standards and licensing parameters established in other pieces of financial regulation, mainly MiFID II –(from which it draws its main inspiration), but also Directive 2013/36/EU (CRD)[24] and Directive (EU) 2019/2034 (IFD)[25], as well as the whole gamut of second and third-level legislation, including soft law issued by the European Supervisory Authorities (ESAs) and national laws and regulations of individual Member States.

2.2 Regulated activities and regulated entities.

In terms of regulated activities, MiCA applies, on the one hand, to the issuance, offering to the public and admission to trading of in-scope crypto-assets and, on the other, to the provision of services related to crypto-assets in the EU. Broadly speaking, MiCA prescribes a public supervision regime, not addressing the consequences of the rules for the sphere of private law (leaving an open window for fragmentation of contracts and litigation)[26]. By emulating the MiFID II framework – albeit with deviations and also some imprecisions[27] -, MiCA lays down four key elements: (i) governance requirements; (ii) prudential requirements; (iii) organisational requirements; and (iv) authorisation (licensing) requirements. This scheme of rules, as a general model, applies both to entities issuing in-scope crypto-assets and to entities providing crypto-asset services (what are called crypto-asset service providers, CASPs, which will be discussed below).

23 As discussed by Zetzsche et al, the delimitation of what constitutes a "financial token" is far from perfect and there are dangerous grey areas, especially revolving around the definition of "transferable securities" (Annex I, Section C(1) MiFID II and Article 4(1)(44), MiFID II). See Zetzsche, Annunziata, Arner and Buckley (2020).

24 Directive 2013/36/EU of the European Parliament and of the Council of 26 June 2013 on access to the activity of credit institutions and the prudential supervision of credit institutions and investment firms, amending Directive 2002/87/EC and repealing Directives 2006/48/EC and 2006/49/EC [2013] OJ L 176.

25 Directive (EU) 2019/2034 of the European Parliament and of the Council of 27 November 2019 on the prudential supervision of investment firms and amending Directives 2002/87/EC, 2009/65/EC, 2011/61/EU, 2013/36/EU, 2014/59/EU and 2014/65/EU [2019] OJ L 314/64.

26 See Michel Tison, 'The Civil Law Effects of MiFID in a Comparative Law Perspective', Financial Law Working Paper WP 2010-05 (April 2010) https://ssrn.com/abstract=1596782; Philipp Maume, 'Reducing Legal Uncertainty and Regulatory Arbitrage for Robo-Advice' (2019) 16 European Company and Financial Review, 622; Olha Chrednychencko, 'European Securities Regulation, Private Law and the Investment Firm-Client Relationship' (2009), 17 European Review of Private Law, 925.

27 See, for example, our Filippo Annunziata and Thomaz de Arruda, 'Crowdfunding and DLTs: The imperative need for more clarity', in Eugenia Macchiavello (ed.), *Regulation on European Crowdfunding Service Providers for Business: A Commentary* (Edward Elgar, 2022).

While for CASPs the standards are generally homogeneous, the landscape is layered for issuers[28], following a somewhat prudential approach. Specifically, the framework gauges regulatory constraints in proportion to the risk posed by the category of crypto-asset to be issued. This translates into the following scale of licensing requirements:

(i) issuers of "other crypto-assets" are exempt from seeking prior authorisation;

(ii) issuers of ARTs and EMTs, as well as CASPs, require authorisation and are supervised by the applicable national competent authority[29];

(iii) significant CASPs are indirectly supervised by the European Securities and Markets Authority (ESMA) [30]; and

(iv) issuers of SARTs and SEMTs are also subject to licensing and supervised by the EBA, and to additional, somewhat comprehensive, requirements.

Moreover, Article 3(1)(8) MiCA regulates the figure of the "offeror", defined as "a natural or legal person, or other undertaking, or the issuer, which offers crypto-assets to the public". The offerors of crypto-assets other than ARTs and EMTs are subject to several disclosure requirements[31].

3. Key licensing requirements for regulated entities.

3.1 Issuers of "other crypto-assets".

Issuers of "other crypto-assets" (i.e. utility tokens) are not subject to the requirement of prior authorisation in order to offer these crypto-assets to the public (Article 4 MiCA), or to seek admission for these crypto-assets to trading on a trading platform for crypto-assets (Article 4a MiCA).

These entities are, nonetheless, required to observe a rather straightforward set of obligations, which include: (i) drafting a crypto-asset white paper that complies with Article 5 MiCA, (ii) publishing and giving notice of that crypto-asset white paper to the competent authority; (iii) ensuring that

28 In Article 3, para 1(6) MiCA, an "issuer of crypto-assets" is defined as a "the natural or legal person or other undertaking who issues the crypto-assets".

29 Under Article 3, para. 1 (24) MiCA, "competent authority" means (i) the authority or authorities, designated by each Member State in accordance with Article 81 for offerors or persons seeking admission to trading of crypto-assets, other than ARTs and EMTs, issuers of ARTs or CASPs; and (ii) the authority, designated by each Member State, for the application of EMD2 for issuers of EMT.

30 As further detailed in section 4.1 below.

31 Article 3(1)(7) MiCA defines an offer to the public as "a communication to persons in any form and by any means, presenting sufficient information on the terms of the offer and the crypto-assets to be offered, so as to enable potential holders to decide whether to purchase those crypto-assets". The definition, it should be noted, mirrors the exact wording of the definition of "offer of securities to the public" set out in Article 2(d) of the Prospectus Regulation (Regulation (EU) 2017/1129 of the European Parliament and of the Council of 14 June 2017 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).

funds provided to the crypto-asset offering are safeguarded and segregated until the offering period closes; and (iv) complying with some basic conduct of business rules (Article 13 MiCA).

The general disclosure obligations, however, are quite loose: the white paper is not subject to any prior authorisation or verification by a Competent Authority, which nonetheless must be notified of it[32].

Moreover, under Article 4(2) MiCA, those obligations do not apply to offers of such "other crypto-assets" to the public where one or more of the following conditions are met: (i) the crypto-assets are offered for free; (ii) the crypto-assets are automatically created as a reward for the maintenance of the DLT or the validation of transactions; (iii) the offer concerns a utility token of a good or service which exists or is in operation; and (iv) the holder of the crypto-assets has only the right to use them in exchange for goods and services in a limited network of merchants with contractual arrangements with the offeror. Further exceptions apply to the obligation of drafting, notifying and publishing the crypto-asset white paper in the cases where (i) the offer is made to fewer than 150 natural or legal persons per Member State where such persons are acting on their own account; (ii) over a period of 12 months, the total consideration of the offer does not exceed EUR 1.000.000; and (iii) the offer is solely addressed to qualified investors and the crypto-assets can only be held by such qualified investors (Article 4(2b) MiCA).

Finally, it is worth mentioning that issuers of "other crypto-assets" can be incorporated as a legal entity established in a third country, whereas issuers of ARTs and EMTs need to be established within the EU[33].

3.2 Licensing of issuers of ARTs.

There are bespoke licensing requirements in place for issuers of ARTs, as laid down in Title III, Chapter I, MiCA. Accordingly, issuers of ARTs must either (i) be a legal person or other undertaking[34] established in the Union and authorised by the competent authority of their home Member State to carry out offers to the public, or to seek admission of such assets to trading on a trading platform for crypto-assets; or (ii) be a credit institution duly authorised in accordance with the CRD.

The authorisation is valid for the entire Union and follows the application procedure laid down in Article 16, to be further governed by regulatory technical standards. The most interesting aspect of the application for authorisation is, perhaps, the requirement to present a legal opinion demonstrating that the ARTs do not qualify as financial instruments, electronic money, deposits or

32 For a critique of *ex post* accountability for issuers of "other crypto-assets", see Zetzsche, Annunziata, Arner and Buckley (2020).

33 Anika Patz and Jan Wettlaufer, 'E-Money Tokens, Stablecoins, and Token Payment Services' in Philipp Maume, Lena Maute and Mathias Fromberger (eds.), *The law of crypto-assets: a Handbook* (Beck/Hart/Nomos 2022) 266.

34 The second subparagraph of Article 15 MiCA clarifies that ARTs may be issued by undertakings that are not legal persons only if their legal status ensures a level of protection for third parties' interests equivalent to that afforded by legal persons and if they are subject to equivalent prudential supervision appropriate to their legal form. The same applies for issuers of EMTs and CASPs. In accordance with Recital (50) the expression "undertaking" in MiCA should ultimately coincide with that of commercial partnerships.

structured deposits (Article 16(2)(d) MiCA), which shows how the entire framework is reliant on the proper identification of the nature of the crypto-asset to be offered or traded.

Entities seeking authorisation as ARTs must also comply with a set of obligations relating to governance, internal control and risk management, as well as own funds and reserve asset requirements.

There are cases, however, where no license is needed in order to issue ARTs, namely: (i) if the average outstanding amount of the ART does not exceed EUR 5.000.000 over a period of 12 months; or (ii) if the public offering of ARTs is solely addressed to qualified investors, and the ARTs can only be held by such qualified investors. In such exceptional circumstances, issuers of ARTs are exempt from prior authorisation, but must still produce a crypto-asset white paper and submit it for approval by the national competent authority (a more stringent provision than that for issuers of "other-crypto-assets", which, as we have seen, do not require ex ante authorisation of their white paper) [35].

3.3 Licensing of issuers of EMTs.

Unlike issuers of ARTs, issuers of EMTs must necessarily be already authorised either as a credit institution or an e-money institution[36], respectively under the CRD or Directive 2009/110/EC (EMD2), as laid down by Article 43(1) MiCA. These entities, therefore, are not subject to any specific licensing requirements under MiCA. However, when issuing EMTs, they will be subject to specific MiCA rules, that will therefore apply in addition to those of the CRD or EMD[37]. In this area, MiCA therefore works as a sort of gold-plating mechanism for existing EU Financial Legislation, not requiring a new license, but adding further rules and requirements (in sharp contrast with the alleged principle of technological neutrality).

With regard to disclosure obligations, EMT issuers are also required to publish a crypto-asset white paper that must be submitted to the relevant competent authority, without the need for prior approval (as in the case of issuers of "other crypto-assets").

It is worth mentioning that Article 43(2a) and (2b) MiCA lay down that, where exemptions under the EMD apply - i.e. where (i) issuers whose transactional amounts are below the regulatory threshold laid down in Article 9(1) EMD (of EUR 5.000.000 over a period of 12 months); or (ii) where the EMTs are exempted in accordance with Article 1(4) EMD (relating to exempted payment instruments) and Article 1(5) EMD (relating to exempted payment transactions) -, the issuance of EMTs is also authorised. However, Article 43(2c) clarifies that, also in those cases, certain obligations remain with regard to publication and serving notice of the crypto-asset white paper.

35 Moreover, specific requirements apply to credit institutions issuing ARTs, pursuant to Article 15a M, namely: (i) the credit institution shall produce a crypto-asset white paper for every ART issued and must submit it for approval by the competent authority of its home Member State; and (ii) the credit institution must notify the respective competent authority, at least 90 working days before issuing the ART for the first time.

36 In accordance with Article 2(1) EMD, an "electronic money institution" is a legal person that has been granted authorisation under Title II to issue electronic money.

37 Under Article 43(1a) MiCA, EMTs shall be deemed to be "electronic money" as defined in Article 2(2) EMD.

3.4 Licensing of issuers of SARTs and SEMTs.

Significant ARTs and EMTs are subject to stringent regulatory controls and requirements under MiCA. Under Articles 39(2) and 50(2) MiCA, the competent authorities of the issuer's home Member State must provide the EBA and the ECB with information for assessment of the significance of those entities on at least a biannual basis.

Based on that information, the EBA must carry out its assessment taking into consideration the following criteria (as set out in Article 39(1) for SARTs, as well as in Article 50(1) for SEMTs): (i) the number of holders of the ARTs/EMTs is larger than 10 million; (ii) the value of the ARTs/EMTs issued or, where applicable, their market capitalisation or the size of the reserve of assets of the issuer of the ART, is higher than EUR 5 billion; (iii) the number and value of transactions in those ARTs/EMTs is higher than 2.500.000 transactions and EUR 500 million respectively, per day; (iv) the issuer of the ARTs/EMTs is a provider of core platforms services designated as gatekeeper in accordance with the Digital Markets Act[38]; (v) the significance of the activities of the issuer of the ARTs/EMTs on an international scale, including the use of the ARTs/EMTs for payments and remittances; (vi) interconnectedness with the financial system; and (vii) the fact that the same legal person or other undertaking issues at least one additional ART or EMT, and provides at least one crypto-asset service.

Under Article 39(6) MiCA, the above criteria will be further specified through delegated acts to be adopted by the Commission, in particular regarding the following elements: (i) the circumstances under which the activities of the issuer of ARTs/EMTs are considered to be significant on an international scale outside the EU; (ii) the circumstances under which ARTs/EMTs and their issuers shall be considered as interconnected with the financial system; (iii) the circumstances under which the issuance of other ARTs, EMTs or provision of crypto-asset services should be considered for the purposes of identification of an ART/EMT as significant; (iv) the content and format of information provided by competent authorities to the EBA; (v) the procedure and timeframe for the decisions taken by the EBA for the assessment of the significance of ARTs/EMT.

Where at least <u>three</u> of the foregoing criteria are met in the first report following authorisation, or in at least two consecutive reports, the EBA shall prepare a draft decision classifying the entity as a SART or SEMT (as applicable) and notify the issuer, the relevant competent authority and the ECB to that effect[39]. Once they receive such notification, both the issuer and the competent authority may provide comments and observations in writing, which are then taken into consideration by the EBA in order to take its final decision, in any case proffered within 60 working days after

38 Regulation (EU) 2022/1925 of the European Parliament and of the Council on contestable and fair markets in the digital sector and amending Directive (EU) 2019/1937 and (EU) 2020/1828 (Digital Markets Act) [2022] OJ L 265/1.
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39 Two atypical situations are also covered by the Regulation. Under Article 39(2) MiCA, (i) when several issuers issue the same ART, the criteria are to be assessed after aggregating the data from all issuers; and (ii) where the issuer is established in a Member State the currency of which is not the euro, or where a currency that is not the euro is included in the reserve assets, competent authorities are to transmit the relevant information to the central bank of that Member State (in which case that central bank must also be notified by the EBA if the entity is deemed significant).

the first notification. Should the ART or EMT be deemed "significant", the EBA shall immediately notify the issuers of such tokens and the respective competent authorities, taking over all supervisory responsibilities 20 working days thereafter.

A derogation applies, however, to issuers of SEMTs denominated in an official currency of the EU other than the euro, where at least 80% of the number of holders and of the volume of transactions of the SEMT are concentrated in the home Member State[40], in which case there will be no transfer of supervisory responsibilities to the EBA (Article 50(5a) MiCA).

In addition to the above-mentioned procedure, MiCA envisages a second possibility for the classification of ARTs and EMTs as "significant" entities: Articles 40 and 51 set out the requirements for the so-called "voluntary classification" mechanism, whereby an issuer of ART/EMT (or an entity still in the application phase for becoming an ART or a credit institution/e-money institution), may indicate that it wishes to classify its tokens as "significant" on a voluntary basis. The main difference in relation to the above procedure is essentially that, being "voluntary", the burden of demonstrating the classification as "significant" falls on the issuer (rather than the EBA), which must draw up a detailed programme of operations showing that it is likely to meet at least three of the significance criteria mentioned above. If, on the basis of the programme of operations, the EBA is convinced that the ART or EMT issuer indeed fulfils the significance requirements, it drafts an opinion, which, as in the previous case, is then submitted for comment and finally adopted (or not) within 60 working days. In that event, the supervisory responsibilities over issuers of these SARTs/SEMTs will be transferred to the EBA within 20 working days of notification of the decision (the same derogation on SEMTs mentioned above also applies to this case).

Specific additional obligations apply for issuers of SARTs and SEMTs, pursuant to Articles 41 and 52 MiCA, in particular with regard to the custody of reserve assets, investment of the reserve assets, remuneration policy, custody of tokens, liquidity management policy and procedures, own funds requirements and orderly wind-down plans.

4. The case of crypto-asset service providers (CASPs).

The definition of crypto-asset services is set out in Article 3(1)(9) MiCA, and includes the following services and activities:

(i) the custody and administration of crypto-assets on behalf of third parties[41];

40 According to the second subparagraph of Article 50(5a) MiCA, a transaction will be considered to take place in the home Member State when the payer or the payee are established in the home Member State.

41 The "custody and administration of crypto-assets on behalf of third parties" means "safekeeping or controlling, on behalf of third parties, crypto-assets or the means of access to such crypto-assets, where applicable in the form of private cryptographic keys" (Article 3(1)(10) MiCA).

(ii) the operation of a trading platform for crypto-assets[42];

(iii) the exchange of crypto-assets for funds[43];

(iv) the exchange of crypto-assets for other crypto-assets[44];

(v) the execution of orders for crypto-assets on behalf of third parties[45];

(vi) placing of crypto-assets[46];

(vii) providing transfer services for crypto-assets on behalf of third parties[47];

(viii) the reception and transmission of orders for crypto-assets on behalf of third parties[48];

(ix) providing advice on crypto-assets[49]; and

(x) providing portfolio management on crypto-assets[50].

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42 The "operation of a trading platform for crypto-assets" means "the management of one or more multilateral systems, which brings together or facilitates the bringing together of multiple third-party buying and selling interests for crypto-assets – in the system and in accordance with its rules- in a way that results in a contract, either by exchanging one crypto-asset for another or a crypto-asset for funds" (Article 3(1) (11) MiCA).

43 The "exchange of crypto-assets for funds" means "concluding purchase or sale contracts concerning crypto-assets with third parties against funds by using proprietary capital" (Article 3(1) (12) MiCA).

44 The "exchange of crypto-assets for other crypto-assets" means "concluding purchase or sale contracts concerning crypto-assets with third parties against other crypto-assets by using proprietary capital" (Article 3(1)(13) MiCA).

45 The "execution of orders for crypto-assets on behalf of third parties" means "concluding agreements to buy or to sell one or more crypto-assets or to subscribe for one or more crypto-assets on behalf of third parties and includes the conclusion of agreements to sell crypto-assets at the moment of their issuance" (Article 3(1) (14) MiCA). It is worth noting that the wording mirrors the definition of "execution of orders on behalf of clients" under Article 4(1)(5) MiFID II.

46 The "placing of crypto-assets" means "the marketing, on behalf of or for the account of the offeror or of a party related to the offeror, of crypto-assets to purchasers" (Article 3(1)(15) MiCA).

47 "Providing transfer services for crypto-assets on behalf of third parties" means "to transfer, on behalf of a natural or legal person, crypto-assets from one distributed ledger address or account to another" (Article 3(1)(17b) MiCA). Recital 63d MiCA also clarifies that "[a] provider of crypto-asset transfer services is the entity that provides for the transfer of crypto-assets from distributed ledger address to another on behalf of a third party. This does not include the validators, nodes or miners that may be part of confirming a transaction and updating the state of the underlying blockchain. Many crypto-asset services providers also offer some kind of crypto-asset transfer service, for example custody and administration of crypto-assets, exchange of crypto-assets for other crypto-asset or funds or execution of orders. Depending on the precise features the services associated to the transfer of e-money tokens, such services can amount to a payment service as defined in Directive 2015/2366. In such case these transfers should be provided by an entity authorized to provide payment services in accordance with Directive (EU) 2015/2366. EBA should draft guideline son those services, which should also help to better understand which of those services are considered payment services".

48 The "reception and transmission of orders for crypto-assets on behalf of third parties" means "the reception from a person of an order to buy or to sell one or more crypto-assets or to subscribe for one or more crypto-assets and the transmission of that order to a third party for execution" (Article 3(1)(16) MiCA).

49 "Providing advice on crypto-assets" means "offering, giving or agreeing to give personalised recommendations to a third party, either at the third party's request or on the initiative of the crypto-asset service provider providing the advice, in respect of one or more transactions relating to crypto-assets or the use of crypto-asset services" (Article 3(1)(17) MiCA).

50 "Providing portfolio management on crypto-assets" means "managing portfolios in accordance with mandates given by clients on a discretionary client-by-client basis where such portfolios include one or more crypto-assets" (Article 3(1)(17a) MiCA).

Any person that provides such crypto-asset services on a professional basis is considered a "crypto-asset service provider" (CASPs), which, on the basis of Article 53(1) MiCA, may only operate in the EU if (i) it is a legal person or other undertaking that has been duly authorised as such by the national competent authority; or (ii) it is a credit institution, central securities depository (CSD), investment firm, market operator, e-money institution, a management company of a Undertaking for Collective Investment in Transferable Securities (UCITS), or an alternative investment fund manager (AIFM) that is allowed to provide crypto-asset services in accordance with the grandfathering rules laid down in Article 53a MiCA (detailed below).

The provisions on the authorisation of CASPs and respective operating conditions are laid down in Title V MiCA, which largely emulates the MiFID II standards, drawing from these the rules for consumer protection and conduct of business.

4.1 Bespoke authorisation of CASPs.

The general authorisation of CASPs under MiCA follows the rules laid down in Articles 53 to 55 MiCA. Legal persons or other undertakings that intend to provide crypto-asset services are required to apply for authorisation as a CASP to the competent authority of the Member State where they have their registered office, indicating the types of crypto-asset service that they wish to provide. Authorised CASPs must maintain a registered office in a Member State where they carry out at least part of their services, must have the place of effective management in the Union and at least one of their directors must be resident in the EU.

In cases where the CASP seeks to add crypto-asset services to its authorisation, it must request an extension of its existing authorisation from the competent authorities, by complementing and updating the information provided in the application (Article 53(4) MiCA).

Within 40 working days of the date of receipt of a complete application submitted in accordance with Article 54 MiCA, competent authorities are required to assess whether the applicant CASP complies with the conditions for being authorised as a CASP. The assessment shall take into consideration the nature, scale and complexity of the crypto-asset services that the applicant CASP wishes to render, as per Article 55(5) MiCA.

An authorisation as a CASP is valid for the entire Union and allows CASPs to provide the services for which they have been authorised throughout the Union, either by operation of the freedom of establishment (Article 49 TFEU), including through the incorporation of branches, or by operation of the freedom to provide services (Article 56 TFEU)[51], under the terms of Article 53(3) MiCA. Moreover, the

51 According to Maume, there is a hidden problem with the passporting of financial tokens (outside the scope of MiCA), since "it is possible that one Member State prescribes an authorisation requirement for a specific service whereas another Member State might not. In this case, a financial service provider offering services in the Member States with stricter requirements cannot rely on passporting because it did not (and: could not) receive prior authorization in relation to the service in question". See Philipp Maume, 'Financial Services Regulation' in Philipp Maume, Lena Maute and Mathias Fromberger (eds.) *The law of crypto-assets: a Handbook* (eds.), (Beck/Hart/Nomos 2022), p. 232.

second subparagraph of the same provision establishes that CASPs that provide crypto-asset services on a cross-border basis are not required to have a physical presence in the territory of a host Member State.

Again mirroring the MiFID II rules, a derogation applies where a client established or situated in the Union initiates on its own exclusive initiative the provision of a crypto-asset service or activity by a third-country firm. In this case, in accordance with Article 53b MiCA, the requirement for authorisation does not apply to the provision of that service or activity by the third-country firm to that person, including a relationship specifically relating to the provision of that service or activity. The derogation, however, is not applicable to cases where a third-country firm solicits clients or potential clients in the Union or promotes and advertises crypto-asset services or activities in the Union, in which cases a CASP license is required.

4.2 CASP license for regulated entities.

MiCA provides a broad grandfathering licensing regime for certain entities already licensed under other areas of EU financial legislation, subject only to prior notification of their intention to provide crypto-asset services (Article 53a). The underlying rationale is to foster alignment between MiCA and other regimes governing financial services in the Union, as underscored by several provisions that explicitly establish an "equivalence" between crypto and financial services (further analysed in Section 4.3 below). Once notification is carried out and deemed complete by the competent authority, such entities, for all purposes, will also be considered as CASPs and will be subject to all the requirements on CASPs under MiCA, with the exception of authorisation requirements, own funds requirements and the approval procedure regarding qualifying shareholders, as these matters are covered by the respective acts under which they were authorised.

Different types of financial entities, however, benefit from different levels of concession in terms of facilitated access to crypto-asset services, as follows[52]:

(i) A credit institution may provide any kind of crypto-asset service if it notifies the competent authority of the home Member State, at least 40 working days before starting to provide those services;

(ii) A CSD authorised under Regulation 909/2014/EU (CSDR)[53] may only provide the service of custody and administration of crypto-assets on behalf of third parties if it notifies the competent authority of the home Member State, at least 40 working days before providing this service for the first time;

52 Recital 54 MiCA clarifies that: "Some firms subject to Union legislation on financial services should be allowed to provide all or some crypto-asset services without an authorization as a crypto-asset service provider under this Regulation, if they notify their respective competent authorities with certain information before providing those services for the first time. In such cases, those firms should be considered as crypto-asset service providers and the relevant administrative powers provided in this Regulation, including the power to suspend or prohibit certain crypto-asset services, apply with respect to them."

53 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 and amending Directives 98/26/EC and 2014/65/EU and Regulation (EU) No 236/2012 (Central Securities Depositaries Regulation) [2014] OJ L 257/1.

(iii) An investment firm may provide crypto-asset services in the EU equivalent to the investment services and activities for which it is specifically authorised under MiFID II if it notifies the competent authority of the home Member State, at least 40 working days before providing those services;

(iv) An e-money institution authorised under the EMD2 may only provide the crypto-asset services of "custody and administration of crypto-assets on behalf of third parties" and "providing transfer services for crypto-assets on behalf of third parties" with regard to the e-money token it issues, if it notifies the respective competent authority, at least 40 working days before providing those services for the first time[54];

(v) A management company of a UCITS or an AIFM may provide crypto-asset services in the EU equivalent to the management of portfolios of investments and non-core services for which it is authorised under Directive 2009/65/EC or Directive 2011/61/EU and if it notifies the competent authority of the home Member State, at least 40 working days before providing those services for the first time; and

(vi) A market operator authorised under MiFID II may operate a trading platform for crypto-assets defined in Article 3(1)(11) if it notifies the competent authority of the home Member State, at least 40 working days before providing that service for the first time.

Competent authorities receiving notification from the regulated entities wishing to provide crypto-asset services must, within 20 working days of receipt of such information, assess whether all the required information has been provided. If the information is complete, they may start providing the intended crypto-asset services.

4.3 Crypto-asset services and financial services: the presumption of equivalence.

When regulating authorisations for entities to provide CASPs in Article 53a, the Regulation establishes a comprehensive presumption of equivalence between certain MiCA services and those listed in the MiFID II, CSDR, UCITS[55] and AIFMD[56] frameworks; this presumption entails (or is intend-

54 Recital 63c MiCA contains an important clarification with respect to the activity of traditional e-money distributors that distribute e-money on behalf of issuers, which would fall under MiCA by virtue of the activity of placing of crypto-assets. In the words of this recital, "(…) any natural or legal persons registered to distribute e-money under Directive 2009/110/EC, should also be able to distribute e-money tokens on behalf of issuers of e-money tokens without prior authorization to provide crypto-asset services. Such distributors are therefore exempted from the requirement to seek authorization as a crypto-asset service provider for the activity of placing of crypto-assets".

55 Directive 2009/65/EC of the European Parliament and of the Council of 13 July 2009 on the coordination of laws, regulations and administrative provisions relating to undertakings for collective investment in transferable securities (UCITS) [2009] OJ L 302/32.

56 Directive 2011/61/EU of the European Parliament and of the Council of 8 June 2011 on Alternative Investment Fund Managers and amending Directives 2003/41/EC and 2009/65/EC and Regulations (EC) No 1060/2009 and (EU) No 1095/2010 [2011] OJ L 174/1

ed to entail) a direct correspondence between crypto-asset services and services under other areas of financial regulation. The equivalences established by the Regulation may be set out as follows:

MiCA	CSDR
Custody and administration of crypto-assets on behalf of third-parties (Article 3(1)(10) MiCA)	Providing, maintaining or operating securities accounts in relation to the settlement service, collateral management, other ancillary services (Section B, point (3), of Annex to CSDR)
MiCA	**MiFID II**
Custody and administration of crypto-assets on behalf of third-parties (Article 3(1)(10) MiCA)	Safekeeping and administration of financial instruments for the account of clients, including custodianship and related services such as cash/collateral management and excluding maintaining securities accounts at the top tier level (Section B, point (1), Annex I to MiFID II)
Operation of a trading platform for crypto-assets (Article 3(1)(11) MiCA)	- Operation of an MTF - Operation of an OTF (Section A, points (8) and (9), Annex I to MiFID II)
- Exchange of crypto-assets for funds (Article 3(1)(12) MiCA) - Exchange of crypto-assets for other crypto-assets (Article 3(1)(13) MiCA)	Dealing on own account (Section A, point (3), Annex I to MiFID II)
Execution of orders for crypto-assets on behalf of third parties (Article 3(1), point (14) MiCA)	Execution of orders on behalf of clients (Section A, point (2), Annex I to MiFID II)
Placing of crypto-assets (Article 3(1)(15) MiCA)	- Underwriting of financial instruments and/or placing of financial instruments on a firm commitment basis - Placing of financial instruments without a firm commitment basis (Section A, points (6) and (7), Annex I to MiFID II)
Reception and transmission of orders for crypto-assets on behalf of third parties (Article 3(1)(16) MiCA)	Reception and transmission of orders in relation to one or more financial instruments (Section A, point (1), Annex I to MiFID II)
Providing advice on crypto-assets (Article 3(1)(17) MiCA)	Investment advice (Section A, point (5), Annex I to MiFID II)
Providing portfolio management on crypto-assets (Article 3(1)(17a) MiCA)	Portfolio management (Section A, point (4), Annex I to MiFID II)

MiCA	UCITS Directive / AIFMD
Reception and transmission of orders for crypto-assets on behalf of third parties (Article 3(1)(16) MiCA)	Reception and transmission of orders in relation to financial instruments (Article 6(4)(b), sub-point (iii) AIFMD)
Providing advice on crypto-assets (Article 3(1)(17) MiCA)	- Investment advice (Article 6(4)(b), sub-point (i) AIFMD) - Investment advice concerning one or more of the instruments listed in Annex I, Section C to Directive 2004/39/EC (Article 6(3)(b), sub-point (i) UCITS Directive)
Providing portfolio management on crypto-assets (Article 3(1)(17a) MiCA)	- Management of portfolios of investments, including those owned by pension funds and institutions for occupational retirement provision in accordance with Article 19(1) of Directive 2003/41/EC, in accordance with mandates given by investors on a discretionary, client-by-client basis (Article 6(4)(a) AIFMD) - Management of portfolios of investments, including those owned by pension funds, in accordance with mandates given by investors on a discretionary, client-by-client basis, where such portfolios include one or more of the instruments listed in Annex I, Section C to Directive 2004/39/EC (Article 6(4)(a) UCITS Directive)

4.4 Significant CASPs.

Like ARTs and EMTs, CASPs that meet certain thresholds and criteria are also to be identified as "significant", and thereby subject to more stringent prudential and/or operational requirements. Article 75a MiCA establishes, to this effect, that a CASP will be considered significant if it has at least, on average, 15 million active users in the EU, in one calendar year. Once that threshold is met, it is the CASP's obligation to notify its competent authority within two months and provide it with the relevant information.

Unlike SARTs and SEMTs, however, significant CASPs are not subject to direct and centralised supervision by an EU authority. Indeed, when the competent authority establishes that the criteria for significance are met, it must merely notify ESMA and continue to exercise its regular day-to-day supervision over the significant CASP, undertaking to update the ESMA Board of Supervisors[57] once

57 Regarding the Board of Supervisors, see Recital 52 of Regulation (EU) No. 1095/2010 of the European Parliament and of the Council of 24 November 2010 establishing a European Supervisory Authority (European Securities and Markets Authority), amending Decision No 716/2009/EC and repealing Commission Decision 2009/77/EC: "A Board of Supervisors composed of the heads of the relevant competent authorities in each Member State, and chaired by the Chairperson of the Authority, should be the principal decision-making organ of the Authority. Representatives of the Commission, the ESRB, the European Supervisory Authority (European Insurance and Occupational Pensions Authority) and the European Supervisory Authority (European Banking Authority) should participate as observers. Members of the Board of Supervisors should act independently and only in the Union's interest".

a year about key supervisory developments, in particular: (i) regarding ongoing or concluded authorisations; (ii) regarding ongoing or concluded processes of withdrawal of an authorisation; and (iii) regarding implemented supervisory measures.

ESMA therefore continues to exercise distant oversight of all significant CASPs, and is allowed by Article 73a(5) to make use of certain powers where applicable to promote supervisory convergence and coordination[58].

5. Final remarks

MiCA is bound to become one of the most important and ground-breaking pieces of (broadly speaking) EU financial legislation. It will stand alongside, and rival, other cornerstones of EU financial law, such as MiFID, CRD, and Solvency II. It will introduce uniform regulations on crypto-assets for the entire Union, which will thereby become the first global jurisdiction for this purpose, well ahead of other world regions.

To a large extent, MiCA mirrors the regulation of services and activities under traditional financial law, replicating most of its paradigms, even though most of the assets falling under MiCA are not financial in nature. This is, in particular, true for licensing rules, which follow criteria well-grounded in existing legislation, especially MiFID (for CASPs), CRD and EMD (for ARTs, and EMTs).

The EU legislators decided to introduce a bespoke regime for markets in crypto-assets, but seem to have, ultimately, resorted to traditional concepts of existing financial legislation, trying to adapt them, and transplant them, to the new technological environment. A different option might have been to have adapted the existing frameworks, in order to include crypto-assets and their issuers and service providers within their existing scope (possibly with a proportionate approach).

The result is a rather a mixed approach, which will leave room for interpretation, and possibly adaptation of the new regulatory framework in the future. However, this is not to deny the extremely great relevance and importance of MiCA for the EU market and, more broadly, even at a global level.

58 To this effect, see Recital 78b MiCA: "Given that EBA should be mandated with the direct supervision of issuers of significant asset referenced tokens and significant e-money tokens, and ESMA should be mandated to make use of its powers in relation to significant crypto-asset service providers, it is necessary to ensure that EBA and ESMA may exercise all their powers and tasks in order to fulfil their objectives to protect the public interest by contributing to the short-, medium- and long-term stability and effectiveness of the financial system (…)".

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Challenges in Imposing Requirements on Offerors of Crypto-assets

by João Vieira dos Santos [1]

Abstract

This paper provides a general overview of the main challenges of imposing requirements on offerors of crypto-assets. After a period (2016-2019) in which there were a large number of public offerings of crypto-assets, amounting to a total of approximately USD 29 billion, jurisdictions have taken varying approaches. In addition to analysing the approaches of some of those jurisdictions, and especially the proposal for a Regulation on Markets in Crypto-assets (MiCA) that may enter into application on 2024, we seek to understand why there is a need to regulate offers of crypto-assets. We also seek solutions for the main challenges that we have identified. To this end, we focus our analysis on the innovative and specific features of public offerings of crypto-assets, as well as on the importance of the licensing principle in financial regulation and of other aspects that ensure proportionality and celerity in the exercise of regulatory powers.

Keywords: Crypto-assets, Offerings of Crypto-assets, public offerings, MiCA, Licensing principle.

1. Introduction

Between 2016 and 2019, 1676 public offerings of crypto-assets were successfully concluded, amounting to a total of approximately USD 29 billion[2]. This phenomenon has attracted increasing interest from investors, regulators and others keen to learn more about crypto-assets, the under-

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2 José Campino, Ana Brochado and Álvaro Rosa (2022) 'Initial coin offerings (ICOs): Why do they succeed?' 8 Financial Innovation 17 (https://doi.org/10.1186/s40854-021-00317-2.

lying ventures and their financial risks[3]. Since then, the number of offerings has fallen drastically[4], most likely because the surge in interest triggered closer intervention from the regulators and more careful analysis by investors, after the initial frenzy.

Despite this, the debate on regulatory responses to public offerings of crypto-assets has continued and even intensified in view of different experiences from around the world. While, early on, China's institutional position was to prohibit trading in crypto-assets and that of the United States to regulate public offerings of crypto-assets by using securities regulations - through the investigative work of the Securities and Exchange Commission (SEC) -, in Europe the institutional positions on the subject consisted first of mere warnings of the risks associated with crypto-assets, in particular from the European Securities and Markets Authority (ESMA). From 2019 onwards, the positions in Europe multiplied and some European countries have already moved forward with bespoke regimes on public offerings of crypto-assets, such as in France, Malta and Liechtenstein.

The new and specific features of public offerings of crypto-assets, as well as the different approaches taken in different jurisdictions, present many challenges. Against this background, the aim of this paper is to analyse the challenges that arise for jurisdictions that decide to impose requirements on offerors of crypto-assets, without forgetting the relationship between those challenges and the licensing principle.

2. Scope

This paper will focus on crypto-assets not qualified as financial instruments, as the rules on offerings of transferable securities are already well established in most jurisdictions. What concerns us is the mostly unregulated domain of crypto-assets not qualified as other instruments under financial services regulations, mainly those in force in Europe. The reason for that is the proposal for a Regulation on Markets in Crypto-assets (MiCA), published by the European Commission on 24 September 2020.

This proposal of a bespoke regime for all crypto-assets not covered elsewhere in European Union financial services legislation has the purpose of providing legal certainty and instilling appropriate levels of consumer and investor protection, financial stability, and market integrity to a growing, innovative, and previously unregulated market without posing obstacles to the application of new technologies. It accordingly covers public offerings of crypto-assets.

The vast majority of jurisdictions, most notably the United States of America, are not planning a legal framework of the same breadth for crypto-asset offerings. The Lummis-Gillibrand bill, a proposal for a regulatory framework for crypto-assets in the United States, is only intended to apply to offerings of ancillary assets of securities, without covering the unregulated space we are interested in.

3 Jonathan Rohr and Aaron Wright (2019) '*Blockchain-Based Token Sales, Initial Coin Offerings, and the Democratization of Public Capital Markets*' 70 Hastings Law Journal 463 https://repository.uchastings.edu/hastings_law_journal/vol70/iss2/5.

4 Lars Haffke and Mathias Fromberger, 'ICO Market Report 2019/2020 – Performance Analysis of 2019's Initial Coin Offerings' (December 30, 2020). https://ssrn.com/abstract=3770793 or http://dx.doi.org/10.2139/ssrn.3770793

3. Why regulate offerings of crypto-assets?

One of the reasons is information asymmetry because one side, the offeror, has much more information than the other, the investor. The main source of information for potential investors is a "white paper", describing, in varying levels of detail, the venture's technological and financial projections[5] There is a lack of consensus about the information to be presented to investors in the white paper, and this can lead to investors being poorly informed.

Investors also incur the risk of dilution or lack of price transparency, as the offeror may carry out a pre-sale or private sale without informing investors, or make new offers after the public sale, which reduces the individual value of the crypto-assets[6].

In this context, the information that is relevant for the effective functioning of the crypto-assets market is not equally available to all market participants. Offerors are mostly small and opaque emerging growth businesses[7] and can take advantage of this situation of information asymmetry, which seriously undermines investor protection and leads to adverse selection or anti-selection, i.e. market instability[8].

Also, there will be no investment if investors do not feel they are in a safe space, where they can enjoy protection if there is misleading information or if they are victims of fraud. To have that safety, the solution cannot be to eliminate all investor risks, but rather to establish a fair space for them. So it is paramount to ensure transparency, quality of information and not to interfere with acceptable crypto-asset market risks. Investment entails risk-taking.

Another important factor is investor confidence in the transparency and integrity of the workings of the crypto-asset market. Without that confidence, capital markets cease to function and fail to achieve their fundamental objectives. In other words, it is investor confidence that is the key to market efficiency: if investors lack confidence, the market will not function properly.

It is therefore necessary to safeguard this valuable asset, the trust placed by investors in the efficient operation of the market, which must be safeguarded through careful and effective public protection of investors' interests that can be divided into three specific interests: the existence of market liquidity, the profitability of investments and the safety and credibility of the market.

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5 Jiri Chod and Evgeny Lyandres (2021) 'Theory of ICOs: Diversification, Agency, and Information Asymmetry' 67 Management Science 5969-5989 https://doi.org/10.1287/mnsc.2020.3754

6 Caroline le Moign (2018) 'French ICOs- A New Method Of Financing?' 20 https://www.amf-france.org/en_US/Publications/Lettres-et-cahiers/Risques-et-tendances/Archives?docId=workspace%3A%2F%2FSpacesStore%2F27604d2f-6f2b-4877-98d4-6b1cf0a1914b.

7 David Florysiak and Alexander Schandlbauer (2021) 'Experts or Charlatans? ICO Analysts and White Paper Informativeness' 139 Journal of Banking and Finance 10 | https://doi.org/10.1016/j.jbankfin.2022.106476

8 Avtar Sehra (2017) 'Economics of Initial Coin Offerings' 16 | https://www.researchgate.net/publication/351626829_Economics_of_Initial_Coin_Offerings.

Regulation of the crypto-assets' market is thus necessary since it balances the need for investor protection with the maintenance or enhancement of market efficiency and competitiveness, by ensuring the robustness and competitiveness of institutions and the stability and efficiency of the system.

It follows that the public interest is served by markets that are efficient and fair, , so we can infer that the same is true of the financial markets[9], and it makes sense to take inspiration from their regulation, although there are some specific challenges to be considered when to regulating offerors of crypto-assets.

4. The main challenges in imposing requirements on offerors of crypto-assets

One of main challenges in imposing requirements on offerors of crypto-assets that quickly come to mind is the fast-moving nature of the crypto-asset market. Technology moves at a dizzying pace, making it difficult for regulators to understand the new business models emerging on the market before being able to decide on the most appropriate action.

Also, the vast geographical diversity of users and the lack of centralised entities responsible for providing services in the crypto-asset market make it extremely difficult to identify a point of access and supervisory control, which makes it difficult to bring it within the scope of the rules of financial law, which currently focuses on the implementation of prudential and behavioural standards for financial institutions and is based on jurisdictional powers. In addition, the global nature of the market in crypto-assets encourages regulatory arbitrage, in which firms move or set up operations in less-regulated sectors and regions or in jurisdictions offering predictability and reasonable paths to compliance[10].

The use of blockchain technology also presents a number of challenges, such as its inherent immutability. This might make it harder to enforce investor protection, and smart contract programming errors can have devastating consequences[11]. Another common concern is that crypto-assets can be used by individuals seeking to avoid records and monitoring, due to the pseudonymity associated with blockchain networks[12].

Yet another major challenge is how to classify crypto-assets for legal purposes. Since crypto-assets are merely the digital representation of value or rights which may be transferred and stored

9 From the outset, crypto-assets have been associated with the concept of 'currency'. However, relatively little use is made of them as a means of payment. According to data from December 2020, only 15,174 companies worldwide accept bitcoin as a means of payment, *vd*. https://www.fundera.com/resources/how-many-businesses-accept-bitcoin. One of the main factors hindering the monetary function of crypto-assets is their associated volatility. On 28 October 2020, the value of a bitcoin was around EUR 11,500 and on 28 October 2021, around EUR 52,500, *vd*: https://coinmarketcap.com/currencies/bitcoin/. What we may observe is that crypto-assets are mainly used as investment assets and even if there are crypto-assets that do not qualify as financial instruments, investor behaviour in relation crypto-assets is similar, or very close, to investor behaviour in relation to financial instruments.

10 Antonio Garcia Pascual and Fabio Natalucci (2022) 'Fast-Moving FinTech Poses Challenge for Regulators' IMF Blog https://blogs.imf.org/2022/04/13/fast-moving-fintech-poses-challenge-for-regulators/. Rohr and Wright (2019).

11 Fabian Schär (2022) 'Decentralized finance could support a new financial infrastructure if challenges are overcome, Finance and Development' 35 https://www.imf.org/en/Publications/fandd/issues/2022/09/Defi-promise-and-pitfalls-Fabian-Schar.

12 Fabian Schär (2021) 'Decentralized Finance: On Blockchain- and Smart Contract-Based Financial Markets' 103 Federal Reserve Bank of St. Louis Review 153–74 https://doi.org/10.20955/r.103.153-74.

electronically via blockchain networks, their qualification can vary enormously. Every venture underlying a crypto-asset has its very own specific features, its own economic structure (so-called "tokenomics") and typically offerors are very creative.

What is more, each jurisdiction has its own definition of what securities are and regulators assess each crypto-asset as part of a case-by-case approach. Many assess which crypto-assets can qualify as securities based on the consumer or financial objectives of whoever purchases them, which turns out to be quite a difficult task. It is likewise not straightforward to determine the jurisdiction to which an offering is subject.

A further consideration arises from the risks of transition from this economic system to a more sustainable one, in particular from the environmental impact of energy intensive consensus mechanisms. This means many crypto-assets have a significant ecological footprint and estimated annualised energy consumption, and this should be take into account when regulating public offerings of crypto-assets, for instance by establishing a reporting obligation on such matters.

We will gauge how the European Union's solution for regulating the market in crypto-assets, known as MiCA, addresses these challenges and incorporates the licensing principle, drawing on relevant experience within Europe.

5. MiCA and the licensing principle

MiCA is currently going through the ordinary legislative procedure of the European Union, and the aim is to have a Regulation in full effect by 2024. This proposal is an element of the Digital Finance Package, adopted at the same date and also including a Digital Finance Strategy[13], a renewed Retail Payments Strategy[14] and legislative proposals on market infrastructures based on distributed ledger technology[15] and digital resilience.

This Digital Finance Package aims to support the European Union's ambition for a recovery that embraces the digital transition. By making rules more digital-friendly and safe for consumers, the European Commission aims to leverage synergies between highly innovative start-ups and incumbents in the financial sector while addressing associated risks.

MiCA has resulted from extensive and long-standing market monitoring and participation in international policy work, since the rise of Initial Coin Offerings in 2017 and 2018, from the advice

13 European Commission, 2020, Communication on a Digital Finance Strategy for the EU (Communication) COM 591 final. Available at: https://ec.europa.eu/transparency/regdoc/rep/1/2020/EN/COM-2020-591-F1-EN-MAIN-PART-1.PDF.

14 European Commission, 2020, Communication on a Retail Payments Strategy for the EU (Communication) COM 592 final. Available at: https://ec.europa.eu/transparency/regdoc/rep/1/2020/EN/COM-2020-592-F1-EN-MAIN-PART-1.PDF.

15 The European Commission has presented a proposal for a regulation on a pilot regime for market infrastructures based on distributed ledger technology. The negotiations on this proposal have ended and led to publication, on 2 June 2022, of Regulation (EU) 2022/858 of the European Parliament and the Council (hereinafter referred to as DLT Pilot Regime) on a pilot regime for market infrastructures based on distributed registry technology and amending Regulations (EU) No 600/2014 and (EU) No 909/2014 and Directive 2014/65/EU. Concerning the proposal, see Dirk Zetzsche and Jannik Woxholth (2021) 'The DLT Sandbox under the EU Pilot Regulation' University of Luxembourg Law Research Paper No. 2021-001 | https://ssrn.com/abstract=3833766 or http://dx.doi.org/10.2139/ssrn.3833766.

received from the EBA (European Banking Authority) and ESMA, on 9 January 2019, and from the European Commission's public consultation process on an EU framework for markets in crypto-assets, which ran from 5 December 2019 to 19 March 2020. It also appears to respond to the policy debate about global stablecoins occasioned by Facebook's Libra proposal in June 2019[16].

MiCA has the purpose of providing legal certainty and instilling appropriate consumer and investor protection levels, financial stability, and market integrity in a growing, innovative and previously unregulated market without posing obstacles to the application of new technologies.

MiCA is a bespoke regime for all crypto-assets not covered elsewhere in European Union financial services legislation, for their issuers and their service providers, providing a single licensing regime across all European Union member states. The categories of crypto-assets covered by European Union financial services legislation and taxonomy of crypto-assets covered by MiCA may be summarised as follows:

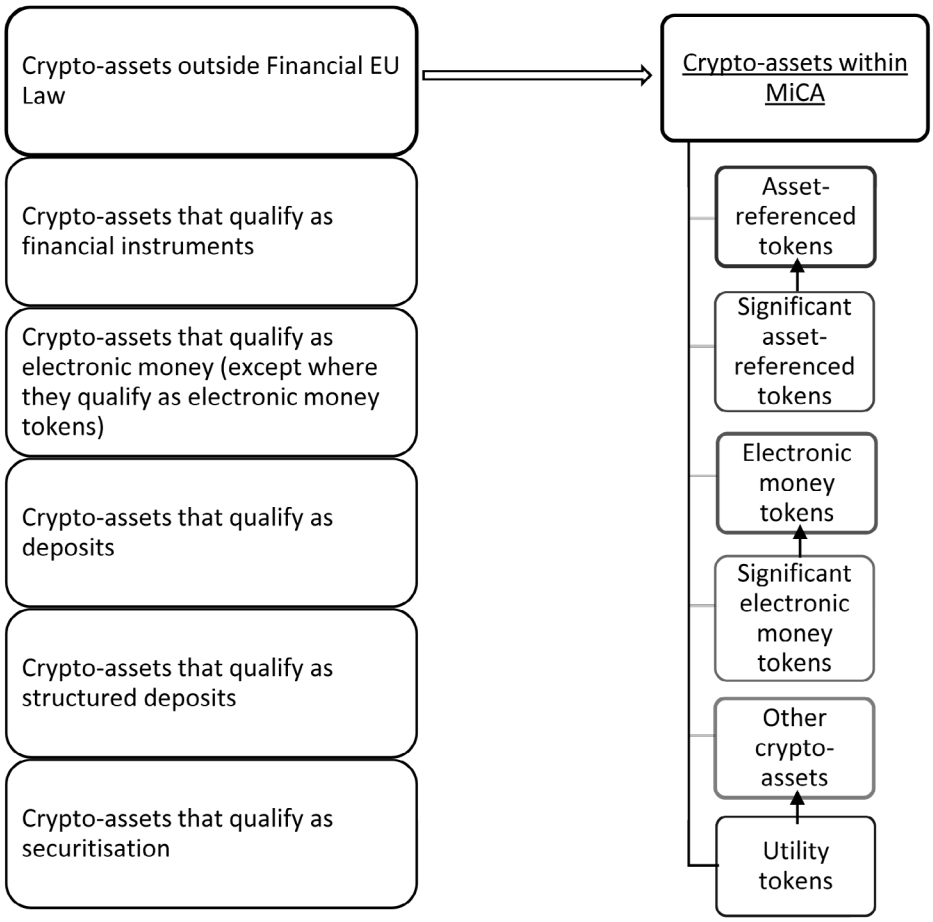

Figure a - Taxonomy of crypto-assets in MiCA

16 Dirk Zetzsche, Filippo Annunziata, Douglas Arner and Ross Buckley (2021) 'The Markets in Crypto-Assets regulation (MiCA) and the EU digital finance strategy' 16 Capital Markets Law Journal 207 https://doi.org/10.1093/cmlj/kmab005.

The draft regulation sets its scope broadly by adopting a correspondingly broad definition of the term "crypto-asset": "a digital representation of value or rights which may be transferred and stored electronically, using distributed ledger technology or similar technology".

However, as well as excluding crypto-assets covered in financial services legislation of the European Union, MiCA establishes other exemptions, mainly in public offerings of crypto-assets. A taxonomy is established, insofar as each type of crypto-assets presents distinct features and they can be designed in a variety of ways, entailing the ownership of a variety of rights, financial and non-financial.[17]

Two categories of crypto-assets were created for what are known as stablecoins: asset-referenced tokens and electronic money tokens. This creation of two categories of stablecoins was made due to their widespread adoption and potential for use as a payment method and as a store of value.[18]

'Asset-referenced tokens' means a type of crypto-asset that purports to maintain a stable value by referencing several currencies that are legal tender, one or several commodities, one or several crypto-assets, or a basket of such assets. In turn, 'electronic money tokens' means a type of crypto-asset the primary purpose of which is to be used as a means of exchange and that purports to maintain a stable value by referring to the value of a fiat currency that is legal tender. This latter category will be deemed to be electronic money as defined in Article 2(2) of Directive 2009/110/EC, with the specific feature that electronic money tokens are issued, transferred and stored using a distributed ledger technology, justifying the specific rules provided for them in MiCA.

To respond to the risks to financial stability potentially posed by an asset-referenced token or electronic money token if they attain a high level of market capitalisation, number and value of transactions and other factors, two sub-categories have been created in MiCA: significant asset-referenced tokens and electronic money tokens. The rules envisaged in the draft regulation for these sub-categories of crypto-assets, regarded as significant, consist of additional obligations, such as remuneration policies, governance arrangements and participation in a college of issuers chaired by EBA (European Banking Authority), designed to facilitate the exercise of the supervisory tasks of this authority.

The last category of crypto-assets is negatively defined as it comprises all crypto-assets covered by MiCA that are not asset-referenced tokens nor e-money tokens. Inside this catch-all category is the sub-category of utility tokens, a type of crypto-assets intended to provide digital access to a good or service, available on a distributed ledger technology, and only accepted by the issuer.

This taxonomy defines how MiCA is structured. However, the subject matter of this draft regulation relates mainly to the disclosure requirements for the offering and admission to trading of crypto-assets and the authorisation and supervision of crypto-asset service providers and issuers of asset-referenced tokens and issuers of electronic money tokens.

17 Zetzsche, Annunziata, Arner and Buckley (2021).

18 "(...) stablecoins have the potential to reach globally systemic dimensions from a financial stability perspective", Zetzsche, Annunziata, Arner and Buckley (2021).

For this reason and because of the quasi-financial nature of crypto-assets, posing many of the same risks of financial instruments, MiCA is inspired by MiFID II (Directive 2014/65/EU), the Prospectus Regulation [Regulation (EU) 2017/1129], Market Abuse Regulation [Regulation (EU) No 596/2014], the Payment Services Directive II [Directive (EU) 2015/2366] and the Electronic Money Directive (Directive 2009/110/EC). Nevertheless, the framework established in MiCA seeks to be proportionate and to support innovation by adopting a softer touch than the financial legislation mentioned.

That MiCA draws inspiration from financial legislation may easily be established from the observation that most of the crypto-assets services addressed coincide in the main with MiFID II services, namely, custody and administration, placing, reception and transmission of orders, execution of orders, providing advice and operation of a trading platform[19].

MiCA requires offerors of crypto-assets other than asset-referenced tokens and e-money tokens to draw up a crypto-asset white paper, although some exemptions are allowed, including for small offerings of crypto-assets (below EUR 1 million within a twelve-month period). Once a white paper has been published, the offeror of crypto-assets can offer its crypto-assets in the European Union.

Offerors of asset-referenced tokens and electronic money tokens will need to be authorised and their crypto-asset white paper will need to be approved by the respective competent national authority. The licensing principle is therefore followed for offerings of stable coins, probably because of the risks they pose to financial stability, but it was understood that, in offerings of crypto-assets other than asset-referenced tokens and e-money tokens, there should be more flexibility.

This increased flexibility is based on the identification of minor risks and the need to ensure appropriate balance between the protection of investors and support for innovation. This quest for greater flexibility is paralleled in the French regime for offerings of crypto-assets. Under these rules, there is a system of optional approval where offerors may request a visa from the Autorité des marchés financiers (AMF), and there are no consequences for offerors that opt out, other than being blacklisted on the AMF's website.

However, there seems to have been no interest in the French optional regime, as only three offerings have been approved by AMF and several dozen have been blacklisted. We see this as further evidence that companies prefer to avoid heavy-handed financial regulation whenever possible.

In the case of MiCA, flexibility may prove even more problematic due to the need for legal qualification of crypto-assets. Firstly, it should be noted that MiCA requires the offerors of crypto-assets to explain, in the information provided in a public offering, on what grounds the crypto-asset does not fall under European Union financial services legislation.

19 "(…) portfolio management of cryptoassets – an activity undertaken by many emerging crypto-asset funds – is missing", Zetzsche, Annunziata, Arner and Buckley (2021). About the connection of MiCA and DeFi *vd*. Guilherme Maia and João Vieira dos Santos (2022) 'MiCA and DeFi ("Proposal for a Regulation on Market in Crypto-assets" and "Decentralised Finance")' 28 Revista Electrónica de Direito 58-82 https://cije.up.pt/pt/red/ultima-edicao/mica-e-defi-ldquoproposta-de-regulamento-sobre-mercados-de-criptoativosrdquo-e-financas-descentralizadasrdquo/.

In some cases, this obligation can be very challenging. It may create harmonisation difficulties, mainly due to the open-ended concept of transferable securities in MiFID II and the different ways in which this was transposed by Member State; this will require significant coordination efforts from the competent national authorities and ESMA.

Moreover, crypto-assets can be offered to the public without any assessment of the legal qualification of the crypto-assets, due to non-adoption of the licensing principle, i.e. the prior authorisation of all compliant offers.

This entails the risk of subsequent requalification of crypto-assets, for example as financial instruments under MiFID II or in another category of crypto-assets under MiCA, which seriously undermines legal certainty. In financial regulation, the legal certainty guaranteed by the licensing principle is especially important to the abovementioned challenges in imposing requirements on offerors of crypto-assets, to investor confidence, which we also addressed earlier, and to financial stability.

In order to achieve these ends, regulators ensure that the different agents in the financial sector adjust to the legal system, thereby increasing the confidence in the system and institutions felt by all market agents. Preserving financial stability depends on all participants in the financial system adopting prudent and ethical behaviour, with a view to preserving it, hence the overriding importance of the licensing principle.

In view of all this, we may conclude that the challenges of imposing requirements on offerors of crypto-assets can best be addressed by upholding the licensing principle[20], but without disregarding certain aspects to ensure proportionality and celerity in the regulatory action of regulators, in order not to create an insufficiently flexible regime for public offerings of crypto-assets.

Firstly, exemptions such as those established in MiCA are essential to ensure proportionality, ensuring that offerings with minor risks are not subject to heavy requirements. And lastly, international cooperation – through forums and agreements (suptech tools and regtech tools[21], which can be encouraged by regulators and aligned with suptech tools[22]) – are essential to ensure fast-track authorisations and enforcement.

20 Taking the opposite view, Paolo Giudici and Guido Ferrarini argue against a mandatory prospectus-like regime, because, among other reasons, information acquisition is an expensive task and information overload has economic effects, see Paolo Giudici and Guido Ferrarini (2021) 'Digital Offerings and Mandatory Disclosure: A Market-Based Critique of MiCA', European Corporate Governance Institute - Law Working Paper No. 605/2021 https://ssrn.com/abstract=3914768 or http://dx.doi.org/10.2139/ssrn.3914768

21 There are already several tools on the market (including the ones used by law firms) for automating prospectus writing that can be easily transposed to white papers. Their current absence from the crypto-assets' market is only due to the lack of standardisation, which will come with MiCA.

22 Other regulatory tool available for regulators that can ensure some proportionality in relation to products, services, business models and distribution mechanisms that are innovative in the relevant sector and need to undergo an authorisation process to access the market is the regulatory sandbox, *vd*. Dirk Zetzsche, Ross Buckley, Douglas Arner and Janos Barberis (2017) 'Regulating a Revolution: From Regulatory Sandboxes to Smart Regulation' 23 Fordham Journal of Corporate and Financial Law 31-103, European Banking Institute Working Paper Series 2017- No. 11, University of Luxembourg Law Working Paper No. 006/2017, University of Hong Kong Faculty of Law Research Paper No. 2017/019, UNSW Law Research Paper No. 17-71, Center for Business and Corporate Law (CBC) Working Paper Series 001/2017 https://ssrn.com/abstract=3018534 or http://dx.doi.org/10.2139/ssrn.3018534; Lev Bromberg, Andrew Godwin and Ian Ramsay (2017) 'Fintech Sandboxes: Achieving a Balance between Regulation and Innovation' 28 Journal of Banking and Finance Law and Practice 314-336, University of Melbourne Legal Studies Research Paper No. 767 https://ssrn.com/abstract=3090844.

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Smart Contracts: From a Legal Perspective

by Roger Brownsword [1]

Abstract

This article sketches three co-existing legal perspectives, each of which offers its own distinctive way of engaging with emerging technologies, each of which has its own framing and agenda of concerns, and each of which offers a particular view of smart contracts.

The first perspective, Law 1.0, reflects traditional—principle-based and coherentist—legal thinking. Here, the headline question is whether, and how, the general principles and concepts of contract law can be applied to novel factual situations in which smart contracts feature.

The second perspective, Law 2.0, reflects a regulatory approach where the central questions are about whether legal rules are fit for purpose relative to specified policy objectives in relation to the use of smart contracts; and, if not, how the rules should be changed so that they serve policy objectives.

The third perspective, Law 3.0, is also regulatory, However, the focus is not on whether the rules of law are fit for purpose but whether emerging technologies, including smart contracts, might themselves be deployed to discharge legal and regulatory functions and to deliver regulatory policies.

Whereas the first two perspectives are typically prompted as reactions to technological innovation (such as smart contracts) that contractors are interested in using for their transactional and business purposes, the third perspective is prompted by the thought that these technologies might serve, directly or indirectly, as tools for governance and regulatory purposes.

Keywords: legal perspectives; Law 1.0; Law 2.0; Law 3.0; smart contracts.

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1. Introduction

From a legal perspective, what should we make of smart contracts? The cautious response to this question is that this rather depends on what we mean, first, by 'smart contracts' and then by 'a legal perspective'. For, clearly, there is more than one kind of smart contract and many possible legal perspectives.

In this article, I will not spend any time at all in trying to capture either the full range of transactional technologies that might be termed 'smart contracts' and nor will I try to define the term narrowly and precisely in a way that captures the essence of a smart contract. As a working specification, let me simply say that we are talking about the encoding of a transaction or some part of it with a view to automating the making of a deal, its performance (particularly performance of payment obligations), or the transfer of compensatory payments in the event of breach. Potentially, there are many applications of such transactional technologies—for example, in supply chain contracts, smart energy grid networks, insurance, consumer transactions, stage payment contracts, investments and so on.

Rather, in this article, my focus will be on three legal perspectives that offer a view of smart contracts. When I say that I will focus on particular legal perspectives, I do not mean that I will review smart contracts by reference to the law of various legal systems, Portuguese, Swiss, British, Chinese, or whatever. What I mean is that I will identify three distinct ways in which we find lawyers engaging with new technologies generally, not just smart contract technologies. In other words, these three modes of engagement can be found whether we are talking about artificial intelligence, biotechnologies, neuroimaging, nanotechnologies, additive manufacturing technologies, AR and VR technologies, surveillance, locating and identifying technologies, and so on. These three legal perspectives are, respectively, coherentist Law 1.0, regulatory Law 2.0, and regulatory-technological Law 3.0.

By way of a roadmap, the article is in two principal parts, one general and the other specifically concerned with smart contracts. In the first (general) part, there is an overview of three legal perspectives that might shape the way in which lawyers engage with emerging technologies, such as smart contracts. In the perspective of Law 1.0, the focus is on the principles of law, especially the principles, concepts, and classifications of the law of contract; in Law 2.0, the focus is on regulatory policy (such as supporting innovative and efficient business practices, protecting investors and consumers, and so on) and whether, relative to the specified policies, the rules of law are fit for purpose or need some amendment; and, in Law 3.0, the focus shifts from the fitness of rules of law to the potential use of technologies, such as smart contracts, for legal and regulatory purposes including the delivery of the specified policy objectives. In the second (specific) part of the article, these perspectives are elaborated in relation to smart contracts. From a Law 1.0 perspective, there will be questions about whether contract law is flexible enough to cover smart contracts (about whether smart contracts will be recognised as equivalent to fiat contracts), about the significance of traditional contracts in the background, about the responses available to contract law when smart contracts 'go wrong', and about tensions and uncertainty in the background law which might

impact on its application to smart contracts. From a Law 2.0 perspective, the questions will mainly concern the bearing of policy on the regulation of smart contracts: on the one hand, policy might indicate that the regulatory environment should be more supportive of the development and use of smart contracts but, on the other hand, policy might also indicate some limits on the application of smart contracts. Finally, from a Law 3.0 perspective, smart regulators will consider whether smart contracts can be deployed directly or indirectly to serve given policy objectives; and, although the thinking in Law 3.0 is not constrained in the way that is characteristic of Law 1.0, and neither is it limited to the use of rules as in Law 2.0, there might still be some resistance to this kind of regulatory approach.

2. Three Legal Perspectives

Currently, three perspectives—Law 1.0, Law 2.0, and Law 3.0—can be detected in the landscape of law and emerging technologies. These perspectives co-exist and interact with one another but each one has its own distinctive way of engaging with new technologies, each has its own conception of what it is to think like a lawyer, each has its own critical reference points, and each has its own distinctive headline questions.[2]

The distinctive headline question in Law 1.0 is the traditional one of how legal precedents, principles, and concepts apply to a situation in which some technology or its application is implicated. In Law 2.0, the question, as first formulated, is whether the law, represented by historic principles and concepts as well as by legislative schemes, is fit for purpose—the purpose being supplied by some particular policy and its objectives. This question then becomes whether the regulatory environment in relation to some technology or its application is fit for purpose—and, if not, then how the rules, the regulatory institutions and regulatory practices might be changed to render them fit relative to particular policy objectives. In Law 3.0, the question is whether technological or technical measures might prove more fit for regulatory purpose than whatever rules are currently relied on. In other words, the question is whether technology or technical measures might be part of the solution to a regulatory problem—which then generates the question of whether emerging technologies might be employed in ways that improve the performance of legal and regulatory tasks.

2.1 Law 1.0

In what we can term a Law 1.0 conversation, the focal question is the one that lawyers traditionally ask when confronted by new technologies or by novel situations. In common law jurisdictions, that question is how the precedents and the historic principles of the law apply to, or fit with, the technology or situation. For example, we might ask how the general principles of tort law

2 As elaborated in Roger Brownsword, *Law 3.0: Rules, Regulation and Technology* (Abingdon: Routledge, 2020), and *Reimagining Law, Regulation and Technology* (Edward Elgar 2022).

apply to defamatory content that is hosted online; or how the principles of contract law might be applied to those platforms in which the relationship between, the roles, and the responsibilities of the parties are not clear; or we might ask how copyright law maps onto creative works generated by AI or by those who engage in remixing; or we might ask how traditional concepts of property, assignment, and novation map onto transfers of tokenised assets.[3] The list of potential questions is not endless, but it is long and it gets longer with each new technology and its applications.

Often, this kind of question will be asked (and answered) by lawyers who are advising clients on their best reading of the legal position. However, where such questions are referred to courts, the flexibility of the law notwithstanding, there is a tendency towards conservative rulings coupled with no more than incremental development of the law. So, for example, although patent offices were able to adjust their understanding of patentability and disclosure to accommodate new products and processes in biotechnology,[4] the courts were not so quick to recognise body parts, embryos, and gametes as property in order to ground tort claims.[5]

This is not to say that practitioners of Law 1.0 are uncritical of the state of the law. To the contrary, the 'coherence' of the body of legal doctrine is a matter of intense and enduring concern.[6] Contradictions and inconsistencies in the body of doctrine are not to be tolerated; precedents and principles should not simply be ignored; legal doctrine should not be distorted; law should be applied in a way that respects its integrity—all of this being regarded as desirable in itself. Given this culture, there is a good deal of nervousness about stretching legal principles, or about creating ad hoc exceptions in order to accommodate a hard case, or about correcting the law where it is plainly not fair, just, or reasonable.[7] Similarly, at times of rapid economic, social and technological development, the

3 For just a handful of examples, see Law Commission of Ontario, 'Defamation Law in the Internet Age' (Final Report, March 2020); Christian Twigg-Flesner (2018) 'The EU's Proposals for Regulating B2B Relationships on Online Platforms—Transparency, Fairness and Beyond' 7 Journal of European Consumer and Market Law 222; Primavera De Filippi and Aaron Wright, *Blockchain and the Law* (Harvard University Press 2018); Saleh Al-Sharieh (2021) 'The intellectual property road to the knowledge economy: remarks on the readiness of the UAE Copyright Act to drive AI innovation' 13 Law, Innovation and Technology 141; Yahong Li (2020) 'The age of remix and copyright law reform' 12 *Law, Innovation and Technology* 113; David Fox, 'Tokenised Assets in Private Law' paper given at the conference on 'Law, Technology, and Disruption' held at City University Hong Kong, March 19-21, 2021.

4 Alain Pottage and Brad Sherman, *Figures of Invention: A History of Modern Patent Law* (Oxford University Press, 2010).

5 Leading examples of the reluctance to recognise detached body parts as either a property object or as the property of the source, include *Moore v Regents of University of California* 51 Cal. 3d 120, 793 P.2d 479, 271 Cal. Rptr. 146 (Cal. 1990), and *Greenberg v Miami Children's Hospital Research Institute* 264 F. Supp. 2d 1064 (S.D. Fla. 2003). For general critique of judicial conservatism in the context of claims arising from the reproductive applications of modern biotechnologies, see Dov Fox, *Birth Rights and Wrongs* (Oxford University Press 2019). On the other hand, compare Joshua A.T. Fairfield, *Runaway Technology* (Cambridge University Press 2021) at 54-59, where Fairfield's presentation of judicial development of the old idea of 'trespass' to apply in cyberspaces suggests that traditional legal concepts are flexible enough if only the members of the judiciary are imaginative enough.

6 For discussion of coherentist thinking (as per Law 1.0), see Roger Brownsword, *Law, Technology and Society: Re-imagining the Regulatory Environment* (Routledge, 2019) 192-194, and *Law 3.0* (Routledge 2020) Ch 8.

7 For classic studies in the last century, see Benjamin N. Cardozo, *The Nature of the Judicial Process* (Yale University Press 1921) and Karl N. Llewellyn, *The Common Law Tradition* (Little, Brown and Co. 1960). For commentary linking both books, see C.E. Clark and D.M. Trubek (1961) 'The Creative Role of the Judge: Restraint and Freedom in the Common Law Tradition' 71 *Yale Law Journal* 255.

concern for doctrinal coherence can inhibit major development of the law. While critics will say that the law should move with the times, judges will tend to exercise restraint and be mindful of being accused of assuming an unauthorised legislative role. Accordingly, while the courts will give an answer to the Law 1.0 question that is put to them, they do not have either the resources or the mandate for expansive lawmaking or for setting new policies. This means that the burden of responding to questions that invite a serious overhaul of the regulatory environment moves elsewhere.

2.2 Law 2.0

The paradigmatic question in a Law 2.0 conversation, the kind of question that regulatory scholars and various kinds of regulatory agencies typically ask, is whether existing rules are fit for purpose, whether the rules are effective and appropriate in serving regulatory policies, and whether perhaps new rules are required. In short, the question is whether the regulatory environment is fit for purpose. This is an exercise in setting and serving policy and the reasoning (with its focus on effectiveness) is predominantly one of instrumental rationality. In practice, the engagement with this question will be in the political arena.

The answers given to the headline questions in Law 2.0 are not constrained in the way that we find in the courts. It is not a matter of finding an answer from within a limited set of materials; there is no pressure for consistency with the jurisdictional history and nor for doctrinal coherence. Regulation can make a fresh start and regulators can develop bespoke responses to particular questions in a way that would offend doctrinal coherentism. So, for example, regulators can adopt any number of absolute or strict liability offences (relating to health and safety, the environment, and so on) that would offend the classical code of criminal law in which it is axiomatic that proof of mens rea is required.[8] Or, if the protection of the investment in databases does not fit well with standard IPRs, a bespoke regulatory regime can be put in place;[9] and, if innovation policy is not well served by limiting patents to human inventors (thereby excluding AI invention), the limitation should be removed.[10] In Law 2.0 circles, there is no need to justify a departure from an historic legal principle or classificatory scheme; in Law 2.0, regulators operate with a new brush which, if they so wish, they can use to sweep the law clean.

Although much regulatory discourse is focused on finding what works, modern scholarship in law, regulation, and technology undertakes a much broader critique. In this articulation of Law 2.0, it is not simply a matter of regulation being effective in serving its purposes; those purposes and the means employed must be legitimate, and there needs to be a sustainable connection between

8 Seminally, see Francis Sayre (1933) 'Public Welfare Offences' 33 *Columbia Law Review* 55.

9 As in Directive 96/9/EC (on the legal protection of databases).

10 Compare the discussion in Ryan Abbott, *The Reasonable Robot* (Cambridge University Press 2020) Chs 4 and 5.

regulatory interventions and rapidly changing technologies and their applications.[11] It follows that this invites a much more complex critical appraisal of the fitness of the regulatory environment.[12] So, the law needs to make its regulatory moves at the right time (neither too early nor too late); and, even if regulation seems 'to work', there might be questions about the acceptability of the position that has been taken up in relation to a new technology.

With regard to the acceptability of the legal position, a key question is whether the regulatory environment strikes the optimal balance between providing support for beneficial innovation and providing adequate protection against the risks of harm that might be caused by an emerging technology. Accordingly, much of the regulatory theory and practice in Law 2.0 circles, is focused on avoiding both over-regulation (and stifling innovation) and under-regulation (and exposing consumers and others to unacceptable risks).[13] Getting regulation right in an age of rapid technological innovation is a considerable challenge; and, moreover, keeping it right is a case of constant regulatory work in progress.

2.3 Law 3.0

With the emergence of a Law 3.0 conversation, the questions are whether technical measures might be used in support of the rules relied on to serve particular regulatory policies, whether technologies might be used to assist those who are undertaking legal and regulatory functions, and whether the technologies and technical measures might actually supplant the rules and the humans who make, administer, and enforce them.[14]

Sometimes, where the technologies at issue have already been developed, the question is whether and how they might be given useful regulatory application. For example, blockchain technology might be considered as a way of supporting the registration of various kinds of proprietary interests,[15] and technologies such as facial recognition and AI might be considered as tools to support policies of crime prevention and reduction, security, or immigration control, and the like. At other times, the technologies have not yet been developed but we already have an idea about how they might be given regulatory application. For example, as Jack Stilgoe says of geoengineering:

11 See, e.g., Roger Brownsword, *Rights, Regulation and the Technological Revolution* (Oxford University Press, 2008); Roger Brownsword, Eloise Scotford, and Karen Yeung (eds.), *The Oxford Handbook of Law, Regulation and Technology* (Oxford University Press 2017); Tony Prosser, *The Regulatory Enterprise* (Oxford University Press 2010).

12 Compare, Anne S.Y. Cheung and Rolf H. Weber, 'Introduction: A Walk in the Clouds' in Anne S.Y. Cheung and Rolf H. Weber (eds.), *Privacy and Legal Issues in Cloud Computing* (Edward Elgar 2015) 1, at 2:
Containing the forces of technology within the existing legal landscape has long constituted an uphill battle. Computer scientists are always one step ahead of the barely imaginable and thinking ahead to the next generation of tools and gadgets that will change the world….Whilst the law does not wish to act so quickly that it stifles innovation, it also does not want to lag so far behind as to be useless.

13 See, e.g., Roger Brownsword, 'Legal Regulation of Technology: Supporting Innovation, Managing Risk and Respecting Values' in Todd Pittinsky (ed.), *Handbook of Science, Technology and Society* (Cambridge University Press 2019) 109.

14 See, e.g., Simon Deakin and Christopher Markou (eds.), *Is Law Computable?* (Hart 2020).

15 See, e.g., John Quinn and Barry Connolly (2021) 'Distributed ledger technology and property registers: displacement or status quo' 13 Law, Innovation and Technology 377.

'The technological sublime of the geoengineering imaginary has had almost no connection with the technological mundanity of everyday engineering. Nevertheless, geoengineering has risen rapidly up scientific and policy agendas, driven by the potency of its promise.'[16] As in all human thinking, our thinking in Law 3.0 can get ahead of itself.

Beyond such technological support and assistance for governance by rules there is a vision of governance by machines in which rules are no longer directed at citizens, humans are out of the loop, expert systems do the work, and environments are fully managed by the technology. Typically, in such environments, the intent and effect of 'technological management' is either to design in one or more acceptable actions or to design out those actions that are treated as unacceptable. That said, technological management might also be employed in a less restrictive way to remove the cause of conflict (for example, overcoming scarcity of resources by digitising materials or by using nanotechnologies).

It is not altogether clear who should respond to the questions that are on the agenda in Law 3.0, nor who should be parties to the conversation. Because the technological solutions will often be developed in the private sector, there seems to be a need for a public/private partnership or some form of co-regulation where public bodies set the desired regulatory objectives but leave it to industry to develop the best technological means. However, there also needs to be urgent and intensive public engagement when proposals are made that contemplate humans being taken out of the loops of law and regulation (as with governance by machines) or rules being replaced by technological management. For humans at least, where they interface with such technologies, the displacement of humans needs to be socially acceptable.[17]

Scholars who take an interest in governance by technology will, of course, ask whether it works, whether it is robust and resilient, whether it has unintended negative effects, and the like. However, they will also ask whether it is legitimate.[18] For example, if digital rights management technologies over-reach on their protection of IP rights, this is clearly incompatible with the Rule of Law[19]; and, similarly, where the criminal justice agencies rely on AI tools to make decisions about where to police or whom to bail or remand in custody, and so on, this needs to be compatible with due process and human rights.[20] Moreover, there are also recurring deeper questions about whether technological measures (that do the regulatory work) change the complexion of the regulatory environment in ways that crowd out human autonomy, human dignity, and moral development.[21]

16 Jack Stilgoe, 'Shared Space and Slow Science in Geoengineering Research' in René von Schomberg and Jonathan Hankins (eds.), *International Handbook on Responsible Innovation* (Edward Elgar 2019) 259, 260.

17 See, e.g., Legal Services Board and Solicitors' Regulation Authority (2022) *Social acceptability of technology in legal services*.

18 See, e.g., Alain Supiot, *Governance By Numbers* (trans by Saskia Brown) (Hart 2017).

19 Seminally, see Lawrence Lessig, *Code and Other Laws of Cyberspace* (Basic Books, 1999).

20 See Roger Brownsword and Alon Harel (2019) 'Law, Liberty and Technology—Criminal Justice in the Context of Smart Machines' 15 *International Journal of Law in Context* 107.

21 See, e.g., Roger Brownsword (2011) 'Lost in Translation: Legality, Regulatory Margins, and Technological Management' 26 Berkeley Technology Law Journal 1321.

In short, Law 3.0 offers a wide spectrum of regulatory deployment—with technologies being deployed both in support of rules and in place of rules, to assist human decision-makers and to replace human decision-makers, to interface with both regulatees and with regulators, to support legal officials and to supplant them, and to supervise both regulatees and legal officials, and so on—as a result of which, in various ways, the needle shifts from governance by rules to governance by machines and technological management.[22]

2.4 Co-existing legal perspectives

In the new legal landscape, we find three conversations, three modes of engagement. These conversations are discrete and different but it needs to be emphasised that, at any rate at this stage of the evolution of the regulatory environment, they are co-existent. Law 2.0 might have overtaken Law 1.0, and Law 3.0 might overtake both Law 1.0 and Law 2.0, but neither Law 1.0 nor Law 2.0 has been fully eclipsed. Indeed, far from it: Law 1.0 remains the default conversation for lawyers; and, Law 2.0 is probably the default conversation still in law and technology circles. Moreover, it is in the co-existence of Law 1.0 and Law 2.0 that we can begin to unlock long-standing puzzles about both principles and policies and law and politics. Quite simply, while Law 1.0 sustains the idea that legal reasoning is based on principle rather than policy, and that there is a clear distinction between law and politics, Law 2.0 challenges these notions by highlighting the role of policy in regulatory reasoning (which often is articulated in a legislative form) and by changing the setting to the conspicuously political arenas in which regulation is conducted.

While there might be instances where there is a constructive synergy or complementarity between the three legal conversations, there is no guarantee that they will always be in a state of smooth, unproblematic and peaceful co-existence.[23] For, the conversations reflect different inputs into the regulatory environment and different modes of governance. Consider, for example, the conversations that might be underway about the governance of new unmanned and autonomous transport technologies, whether vehicles, vessels, or drones.

First, in the Law 1.0 conversation, the questions will be about the application of precedents and legal principles to these new forms of transportation. In some cases, the application might be unproblematic. For example, the cornerstone principles of freedom and sanctity of contract will be applicable to much commercial dealing around these technologies. The allocation of risks and responsibilities will, as usual, be governed by the terms and conditions on which the parties have agreed for the supply, repair, or servicing, of such vehicles, vessels, or drones. However, there

22 For interesting case studies, see Alexandra Molitorisova and Pavel Šístek (2021) 'Reimagining Electronic Communications Regulatory Environment with AI: Self-Regulation Embedded in "Techno-Regulation"' 12 European Journal of Law and Technology http://ejlt.org/index.php/ejlt/article/view/819/1031 (understanding radio spectrum management as a precursor of technologically managed environments more generally); and Lachlan Robb, Felicity Deane, and Kieran Tranter (2021) 'The Blockchain Conundrum: Humans, Community, Regulation and Chains' 13 *Law, Innovation and Technology* 355 (analysing blockchain applications in securing trust and confidence in cross-border supplies of beef).

23 See. e.g., Karen Yeung (2019) 'Regulation by Blockchain: The Emerging Battle for Supremacy Between the Code of Law and Code as Law' 82 *Modern Law Review* 207.

will be more difficult cases such as the application of the principle of fault-based liability where accidents involving these technologies cause death or personal injury, or damage to property. Famously, in the Nineteenth Century, it was the shortcomings of the traditional legal principles in relation to railway accidents that led to a more regulatory approach being taken.[24] Accordingly, in such cases, it might already be accepted that we have reached the limits of Law 1.0.

Secondly, in a Law 2.0 conversation, the central questions are about the fitness of the regulatory environment. Given that much of the law on transportation will have been written on the assumption that human operators will be in control of vehicles and vessels, and will have been explicitly addressed to drivers and masters, and the like, there will be questions about how best to reconnect the law to those forms of transport where humans are no longer in control or, in the case of remotely-controlled vessels, on board.[25] There will also be questions about the arrangements for compensation where there are accidents involving these new modalities. If fault-based liability has not already been replaced by strict liability or by no-fault compensation schemes, this will surely be an item on the Law 2.0 agenda.[26]

That said, as Mark Chinen has argued, we should not under-estimate the influence of 'the paradigm of the blameworthy individual', where responsibility is fixed by reference to culpable individuals.[27] If a Law 2.0 conversation is to avoid being constrained by the predicates of Law 1.0 thinking, we need 'to change the way we understand responsibility or the way we understand the responsible agent.'[28] The problem is that the former is impeded by the thinking that underlies Law 1.0 and the latter involves a quantum change in our thinking even though, as Chinen remarks, autonomous machines might develop to a point at which 'it becomes just as plausible to say that the machine itself is responsible for a harm as it is to say that the responsibility lies with its human owners and users.'[29]

Thirdly, there might also be a Law 3.0 conversation in which the questions are again about the fitness of the regulatory environment but now asking whether there might be any technical measures that might act in support of the rules or even supplant them—that is, questions that ask whether, as Chinen puts it, it might be possible 'to reduce harm by designing autonomous technologies that "obey" the law.'[30] Recall, for example, the conversations at the time of the disruption at London Gat-

24 See, Roger Brownsword (2019a).

25 On autonomous road vehicles, see Nynke E. Vellinga (2019) 'Automated driving and its challenges to international traffic law: which way to go?' 11 *Law Innovation and Technology* 257; and, on autonomous vessels, see Robert Veal, Michael Tsimplis and Andrew Serdy (2019) 'The Legal Status and Operation of Unmanned Maritime Vehicles' 50 *Ocean Development and International Law* 23.

26 Compare Maurice Schellekens (2018) 'No-fault compensation schemes for self-driving cars' 10 *Law Innovation and Technology* 314; and Abbott (2020).

27 Mark Chinen, *Law and Autonomous Machines* (Edward Elgar, 2019) 127.

28 ibid 103.

29 ibid 224.

30 ibid 147.

wick airport shortly before Christmas 2018, when an unauthorised drone was sighted in the vicinity of the airfield. Much of the focus then was on the possibility of finding a technological solution, ideally one that rendered it impossible in practice for a drone to be flown near an airport (or, failing that, a technology for disabling and safely bringing down unauthorised drones). In other words, rather than relying on rules to manage the risks associated with air travel, the conversation was about finding a solution by improving the design and safety-specification of drones and/or airfields.

In principle, each of these conversations could find its own place and make its own contribution to the governance regime. For example, if a regulatory body with a Law 2.0 mind-set coordinates the conversations, a particular question might be referred for Law 1.0 inquiry;[31] and, a group, including technical experts, might be set up to explore the Law 3.0 options. However, if it is not clear who is coordinating the conversations, it could lead to some confusion, some inefficiency, and possibly some friction.

2.5 Summing up

Summing up, we can detect three distinct modes of legal engagement with emerging technologies. Each mode has its own particular framing, its own range of focal concerns, and each relates to a particular input into the regulatory environment as we should now conceive of it. Whereas the principle-based thinking in Law 1.0 and the policy-focused thinking in Law 2.0 are both articulations of governance by rules, in Law 3.0 we are contemplating more technical and technological forms of governance. This represents a sea-change in how societies are to be ordered. Arguably, code is not just Law by another name, it is a radically different regulatory modality and form of governance. If governance is no longer based on rules, and if humans are to be taken out the legal and regulatory loop, this prompts questions about the adequacy of our rule-based notions of legality and the Rule of Law as well as our ideas about legitimacy.

Important though these questions are, they are not ones that I can pursue in this article.[32] Having sketched the legal landscape, we can now turn to the way in which each of the three legal perspectives that we have outlined would shape our thinking about smart contracts.

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31 Compare, e.g., the Law Commission's consultation on smart contracts (available at https://www.lawcom.gov.uk/project/smart-contracts/). At para 1.5 of the Call for Evidence, we read the following:

> To ensure that the jurisdiction of England and Wales remains a competitive choice for business, there is a compelling case for reviewing the current legal framework…to ensure that it supports and facilitates the use of smart contracts. While the technology and use cases are still developing, it may not be appropriate to suggest legal reforms which could stifle innovation or risk becoming outdated almost immediately….[W]e are therefore starting with a scoping study to identify the current law and any potential issues.

In other words, the background conversation and thinking are Law 2.0, but the foreground inquiry (as the document confirms) is largely of a Law 1.0 nature.

32 See, further, Roger Brownsword, *Rethinking Law, Regulation and Technology* (Edward Elgar 2022) Chs 4-6.

3. Legal Perspectives on Smart Contracts

In this part of the article, our opening question, 'What do we make of smart contracts?', now becomes 'What do we make of smart contracts relative to traditional legal principles (Law 1.0), or relative to regulatory policies (Law 2.0), or relative to those policies but viewing smart contracts as tools to be employed for legal and regulatory purposes (Law 3.0)?'

3.1 From a Law 1.0 perspective

A lawyer employing a coherentist Law 1.0 perspective will ask how the traditional principles, concepts, and classifications of contract law apply to smart contracts.[33] In what follows, we can highlight how this might look relative to questions of doctrinal flexibility, foreground and background contracts, how the law might respond when smart contracts 'go wrong', tensions in the background law, and congruence.

3.1.1 Doctrinal flexibility

Legal coherentists will have many questions about how the law of contract might engage with smart contracts. For example, they will ask whether and how a piece of software can be characterised as the kind of bilateral exchange that we associate with fiat contracts or how we can determine the parties' intentions when humans are not in the transactional loop; they will ask whether and how smart contracts might be treated as voidable for, say, misrepresentation or duress; and, if the execution of the transaction cannot be stopped, then they will ask how erroneous payments are to be reversed.

One way of responding to these questions is to recall the flexibility of the general concepts and principles of contract law. As Eliza Mik reminds us, contract law is 'not only form agnostic but also technology neutral.'[34] The cornerstone ideas of intention, exchange, reasonableness, and so on, are flexible enough for contract lawyers to recognise a deal when they see one and to accommodate new technologies.

While we certainly should not underestimate the flexibility of these principles and concepts, we have to recognise that some judges will be more willing than others to make use of the affordances within contract law. For judges who are traditional in their thinking and whose approach is of the

33 Compare, e.g., Kevin Werbach and Nicolas Cornell (2017) 'Contracts *Ex Machina*' 67 *Duke Law Journal* 313; De Filippi and Wright (2018); Larry A. di Matteo, Michel Cannarsa and Cristina Poncibò, 'Smart Contracts and Contract Law' in Larry A. di Matteo, Michel Cannarsa, and Cristina Poncibò (eds.), *The Cambridge Handbook of Smart Contracts, Blockchain Technology and Digital Platforms* (Cambridge University Press 2019) 3; Mateja Durovic and André Janssen, 'Formation of Smart Contracts under Contract Law' in di Matteo, Cannarsa, and Poncibò (eds.) (above) 61; Roger Brownsword, 'Smart Contracts: Coding the Transaction, Decoding the Legal Debates' in Philipp Hacker, Ioannis Lianos Georgios Dimitropoulos, and Stefan Eich (eds.) *Regulating Blockchain: Techno-Social and Legal Challenges* (Oxford University Press 2019) 311; and (2019a) 287-293.

34 Eliza Mik, 'The Resilience of Contract Law in Light of Technological Change' in Furmston (ed), *The Future of the Law of Contract* (Routledge 2020) 112 at 112.

static market-individualist kind, the affordances within these concepts might not be exploited; but, for judges who subscribe to dynamic market-individualist thinking, there should not be too many cases where transactional technologies cannot be subsumed under the formation rules.[35]

Looking back some twenty years or so, to the development of e-commerce technologies, there might have been some interesting domestic case law on whether digital messages and exchanges could satisfy traditional formation requirements but, because the UK was, at that time, a member of the EU, it was the EU institutions that laid out the basic legal framework. Not surprisingly, given the Commission's conspicuously regulatory approach to the building of a pan-European consumer marketplace, the legal engagement with these new technologies for transactions was policy-sensitive. In other words, a stream of (Law 2.0) Directives staked out the legal position on the enforceability of e-contracts together with the responsibilities of both internet service providers and those who would supply goods and services in the online consumer marketplace; and the UK, along with other member states, was left to implement the framework.

3.1.2 Foreground and background contracts

While we should consider how far doctrinal flexibility and its affordances can take us with new transactional technologies, this is not the only way of responding. Rather than fiddling with, or forcing, or fictionalising, the facts so that we can characterise new transactional technologies as fiat contracts, we should place these new technologies in the wider transactional context. To be sure, what we do and do not see in the foreground might not fit the description of a fiat contract but in the background there might be a standard fiat contract to which the foreground technologies relate.

Consider, for example, the kind of automated foreground picture imagined by Michal Gal and Niva Elkin-Koren, who foresee a world in which

> [y]our automated car makes independent decisions on where to purchase fuel, when to drive itself to a service station, from which garage to order a spare part, or whether to rent itself out to other passengers, all without even once consulting with you.[36]

In such a scenario, human contractors are apparently replaced by machines and human observers will be excluded from observing the transactional communications. Here, coherentists might quickly conclude that they simply do not recognise 'conversations' between smart machines as contracts.

Nevertheless, there might be a simple answer; but the answer is in the background not in the foreground. If, in the background, there is a standard fiat contract that relates specifically on a one-off basis to the use of the foreground technologies, or if there is a master background agreement

35 See, e.g., Roger Brownsword, 'Contract Law, Co-operation, and Good Faith: the Movement from Static to Dynamic Market-Individualism' in Simon Deakin and Jonathan Michie (eds.) *Contracts, Co-operation and Competition* (Oxford University Press 1997) 255.

36 Michal Gal and Niva Elkin-Koren (2017) 'Algorithmic Contracts' 30 Harvard Journal of Law and Technology 309, at 309-310.

that sets out the terms and conditions for using the technologies in question, then we are back on familiar ground. We can anchor the technologies and their automated dealings to a fiat contract; and, the terms and conditions of this contract will bind parties who employ the covered technologies, and it will be legally enforceable like any other contract. To be sure, if the terms and conditions do not clearly allocate the risks associated with the technologies, then we might have a problem; but, if any difficulty of this kind arises, then it is not because the foreground transactions do not fit the traditional template or conception of a contract but because the particular fiat contract or the master agreement underspecifies on the matter in question.

It is worth emphasising the significance of fiat contracts in the background. Quite simply, if there are such contracts in play, foreground transactions are governed by these contracts which, in turn, are governed by the general law of contract. It follows that there can be many different transactional technologies that are used to form and to perform transactions without this being difficult for the law of contract. Of course, if the use of a particular technology raises policy issues, there will need to be a regulatory response; but, where the matter can be left to the self-governance of the background fiat contracts and agreements, there is no problem or puzzle.

Helpfully, in its report on smart contracts, the Law Commission differentiates between three forms of transaction in which there are varying degrees of coded expression and automated performance. First, we have a 'natural language contract' where (i) all obligations are expressed in natural language but (ii) 'in which some or all of the contractual obligations are performed automatically by the code of a computer program'; then, there are hybrid contracts where (i) 'some contractual obligations are defined in natural language, and others are defined in the code of a computer program' and (ii) performance of some or all of the obligations is automated; and, thirdly, there are fully coded contracts where (i) none of the contractual obligations are expressed in natural language and (ii) performance is fully automated.[37] Broadly speaking, the Commission sees little or no difficulty in applying current legal principles to smart contracts 'in much the same way as they do to traditional contracts….'[38] To the extent that we are dealing with scenarios where the characteristics of the transaction, whether a particular transaction in the foreground or a master agreement in the background, are predominantly 'traditional' (as they are in the first two forms of smart contract identified by the Commission) then, indeed, there should be no great difficulty. However, where the particular transaction in the foreground is fully coded and automated—and, let us set aside the prior question of how far it might be possible to convert the texts of typically lengthy commercial contracts into code[39]—it surely will be more difficult to apply current legal principles unless there is a traditional contract in the background that makes provision for whatever issues arise from the expression and execution of the smart contract.

37 Law Commission (n 30), at para 2.51.

38 At para 1.26. Similarly, see Roger Brownsword (2019) 'Regulatory Fitness: Fintech, Funny Money, and Smart Contracts' 20 European Business Organization Law Review 5.

39 See, Eliza Mik (2017) 'Smart *contracts:* Terminology, technical limitations and real world complexity' 9 *Law*, *Innovation and Technology* 269, and (2021) 'Contracts in code?' 13 *Law*, *Innovation and Technology 478.*

3.1.3 The law's response when things go wrong

Picking up a common concern, how might the law of contract engage with smart contracts if something 'goes wrong'? Of course, there is more than one thing that could go wrong. Even if we isolate an apparently simple instance of automated performance, the payment of an agreed sum from A's account to B's account on a particular day, this could go wrong in several respects; and, this applies a fortiori as the scenario becomes more complex, for example, if the payment is to be made, not on a specified day, but on the occurrence of a specified event. Thus, in the simple scenario, the sum transferred might be an under-payment or an over-payment; the payment might be delayed; and the payment might be made into another account; and, in the more complex scenario, the payment might be made too early or too late relative to the occurrence of the event, and where the system is 'misinformed' about whether or not the event has occurred, payments that should not have been made might be made or payments that should have been made might not be made.

How are the risks of technological error to be handled? In the background, we might find that they have been covered by a master agreement that clearly allocates the risks and specifies the responsibilities in the event of technological error, or the contracting parties might have entered into a covering agreement that provides for the risk. Where the parties know where they stand in relation to such risks, they can make appropriate insurance arrangements. However, if the matter has not been anticipated and dealt with in this explicitly contractual way, the parties will be left to clutch at contractual straws (such as the doctrine of mistake) or to plead claims in restitution or tort in an attempt to reverse the errors and to recover their losses. If this results in an uncertain legal position, there might then be pressure for a regulatory clean-up to maintain confidence in the use of the technology and to assuage concerns about the risks of error, malfunction, hacking, and the like.[40]

3.1.4 Background law

Most disputes between commercial contractors hinge on the interpretation of the contract (on how we read the various terms and conditions). If questions about the interpretation of encoded smart contracts lead back to the interpretation of natural language contracts, then this takes us to the background law on the interpretation of contracts. In some legal systems, this part of the law might be settled; but, in English law, it is a matter of intense controversy.

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40 *For an early indication of how things might 'go wrong', how the party who is negatively affected might plead their claim, and how the courts might respond, see the Singapore Court of Appeal's decision in Quoine Pte Ltd v B2C2 Ltd [2020] SGCA(I) 02 (discussed in Law Commission (n 30 above) at paras 5.57-5.62). See, too, Green v Petfre (Gibraltar) Ltd (t/a Betfred)* [2021] EWHC 842 (QB), where a glitch occurred during an online blackjack game (the game not resetting as it should have done), with neither party being aware of it at the time, and resulting in a 'mistaken' win of some £1.7 million for the claimant. When the defendants refused to pay out, the claimant applied for summary judgment. Before ruling against the defendants, the court spent some considerable time assessing whether they might rely on their exclusionary terms and conditions (including a term that purported to treat all plays and pays as void in the event of a 'malfunction') but, by contrast, the argument that the contract was void for common mistake (the parties mistakenly believing that the game was functioning as intended) was given short shrift. Following the principles of *Great Peace Shipping*, it was ruled (at para 187) that 'the doctrine of mistake has no role to play in this case…the mistake did not render the contract incapable of performance, just less advantageous to one party.'

Briefly, at the turn of the century, starting fairly modestly, the seeds of a modern contextualist approach in English contract law were sown.[41] Initially, contextualism was limited to correcting errors that had clearly been made in the drafting of contracts, but it soon established itself as the standard approach to the interpretation of commercial contracts, before then being proposed as the appropriate approach to the implication of terms[42], and (in the important Yam Seng case) as a vehicle for introducing a (contextually indicated) requirement of good faith in contracts.[43] In this way, contextualism challenged long-standing doctrines concerning the literal interpretation of contracts, a restrictive approach to implied terms based on necessity, and of course the adversarial ethic that underwrites such features of contract law.[44]

For a while, it seemed that contextualism, sweeping all before it, and signalling a wide-ranging form of commercial realism, would become the default approach for all commercial contract disputes. However, in a series of landmark cases—notably Marks and Spencer plc v BNP Paribas Services Trust Company (Jersey) Limited[45] (on implied terms); and, Arnold v Britton[46] and Wood v Capita Insurance Services Ltd[47] (on interpretation)—the Supreme Court pushed back against what was becoming the new orthodoxy. In this most recent case-law, we find a reaction against expansive implication and interpretation of terms, particularly in carefully drafted (natural language) commercial contracts.[48]

At all events, let us imagine that, as in one of the leading cases,[49] the dispute hinged on the interpretation of some complex agreements that were designed to protect the financial interests of clients who were parties to shipbuilding contracts and who were paying, stage by stage, in advance of the work actually being carried out. From the clients' point of view, this was a risky arrangement and the commercial purpose of the agreements was to hedge against the risk of the shipbuilders failing to carry out work for which they had been paid. Now, let us suppose that smart contracts were employed to return the most recent stage payment to the clients in the event that that the shipbuilders found themselves in financial difficulty. If the shipbuilders were to challenge the operation of the smart contract when a payment was returned, they might argue that, relative to the natural language agreement, there was manifestly an error in the coding of the smart contract or, more likely, that the encoded smart contract

41 See, *Mannai Investments Co Ltd v Eagle Star Life Assurance Co Ltd* [1997] 3 All ER 352, and *Investors Compensation Scheme Ltd v West Bromwich Building Society* [1998] 1 All ER 98.

42 *Attorney General of Belize v Belize Telecom Limited* [2009] UKPC 11.

43 See, *Yam Seng Pte Limited v International Trade Corporation* [2013] EWHC 111 (QB); and, more recently, *Sheikh Tahnoon Bin Saeed Bin Shakboot Al Nehayan v Kent* [2018] EWHC 333 (Comm).

44 For discussion of this direction of doctrinal travel, see Roger Brownsword (2014) 'The Law of Contract: Doctrinal Impulses, External Pressures, Future Directions' 31 Journal of Contract Law 73.

45 [2015] UKSC 72; confirmed in *Wells v Devani* [2019] UKSC 4, para 28 (Lord Kitchin).

46 [2015] UKSC 36.

47 [2017] UKSC 24.

48 Compare, Jonathan Sumption, *Law in a Time of Crisis* (Profile Books, 2021) Ch 8 (approving of the 'retreat' from the extreme contextualism of *Rainy Sky*).

49 *Rainy Sky v Kookmin Bank* [2011] UKSC 50.

did not accurately reflect the spirit and intent of the natural language agreement (particularly in its treatment of what constituted a sufficient financial difficulty to trigger the repayment).

While the manifest error argument should be reasonably straightforward, the spirit and intent argument would take us right to the heart of the 'text versus context' controversy in English law. In the case as litigated, the UK Supreme Court took the view that context and commercial realism should prevail over natural language text and literalism—and, quite possibly, a similar approach would be taken in relation to the coding of the transaction. Whatever the response, though, it would not be the coding or the smart contract that would be the problem; the problem would be the uncertainties inscribed in the background law itself.

3.1.5 Congruence

From a Law 1.0 perspective, it will matter that smart contracts are 'congruent' with the principles of contract law. Thus, for example, from a coherentist legal perspective, it will matter that automated compensatory payments or the exercise of withdrawal are congruent with the remedial principles of contract law.[50]

It is commonly said that the rules on compensatory awards are defaults such that the contracting parties are permitted (in accordance with freedom of contract) to agree their own remedies. For example, there are settled rules about the recovery of damages for consequential losses but the parties may specify different rules (or even, according to the thinking in the Transfield Shipping case, rely implicitly on different custom and practice in their particular market).[51] However, the position is not quite as straightforward as this. First, there is at least one red line, namely the rule against penalty clauses although, after the Cavendish Square case,[52] it is not so easy to be sure where this is; and, secondly, in some cases, such as the right to withdraw, there is a tilt against the exercise of the remedy (that is to say, the remedial default here is 'sticky')—if the court judges that a compensatory award would suffice, it will be reluctant to interpret a clause that gives the inno-

50 See Roger Brownsword 'Smart Transactional Technologies, Legal Disruption, and the Case of Network Contracts' in Larry A. di Matteo, Michel Cannarsa, and Cristina Poncibò (eds), *The Cambridge Handbook of Smart Contracts, Blockchain Technology and Digital Platforms* (Cambridge University Press 2019) 313, and 'Automated Transactions and the Law of Contract: When Codes are not Congruent' in Michael Furmston (ed), *The Future of the Law of Contract* (Routledge 2020) 94.

51 *Transfield Shipping Inc of Panama v Mercator Shipping Inc of Monrovia, The Achilleas [2008] UKHL 48, [2009] AC 61, [2008] 4 All ER 159.*

52 *Makdesi v Cavendish Square Holdings BV [2015] UKSC 67.* For examples of the application of the new approach, see *Permavent Ltd & Anor v Makin [2021] EWHC 467 (Ch)* (at para 78, the question was said to be 'not whether the Detriment is harsh or even extremely harsh, but whether it is extravagant, exorbitant or unconscionable, as being out of all proportion to the Protected Interest'; and *De Havilland Aircraft of Canada Ltd v Spicejet Ltd [2021] EWHC 362 (paras 27-34).* By contrast, in Singapore, in *Denka Advantech Private Limited & another v Seraya Energy Pte Ltd & another [2020] SGCA 119,* the Court of Appeal declined to follow Cavendish Square, preferring to retain the traditional approach in *Dunlop Pneumatic Tyre Co Ltd v New Garage and Motor Co Ltd [1915] 79.* The court in Singapore was concerned that the approach in Cavendish Square, aside from its unpredictable application, replaced the question of whether the agreed clause was intended to be compensatory with the question of whether it was commercially justifiable.

cent party a right to withdraw as a general licence to withdraw for breach.[53] Still, provided that the remedies secured by the technology are broadly in line with the legal defaults and stay on the right side of any red lines, some minor deviation should not trouble coherentists.

Once again, if there is a question mark about the congruence of smart contract operations with legal principles, the source of any doubt is likely to lie with the latter rather than the former.

3.2 From a Law 2.0 perspective

Famously, Ronald Dworkin opened a major chapter in the common law jurisprudence when he put forward the thesis that judicial decisions in civil cases 'are and should be generated by principle not policy.'[54] Reconstructing this thesis, we can see two strands to it. First, there is a distinction between legal reasoning that is generated by principle (Law 1.0) and legal reasoning that is generated by policy (Law 2.0). Secondly, there is the proposition that judges in civil cases are (and should be) mandated to employ only legal reasoning generated by principle (Law 1.0). If we accept the general thrust of Dworkin's thesis (albeit that there is a good deal of devil in the detail), then we will be looking for the Law 2.0 legal perspective on smart contracts in places other than the courts, notably, in legislative and executive bodies. That said, although legislative and executive bodies are mandated to operate in a thoroughly regulatory manner, by initiating policy, by setting policy priorities, and by adjusting policy balances and so on, and although these bodies are not subject to the same constraints as we find in the courts, it does not follow that there are no constraints.

We can take stock of a Law 2.0 perspective on smart contracts by focusing, first, on policy (the driver of the Law 2.0 perspective) and then on the constraints that might apply to regulatory thinking.

3.2.1 Policy

From a Law 2.0 perspective, the question is whether the regulatory environment in relation to smart contracts is fit for purpose, that is to say, whether the rules of contract law (and other relevant rules of law) serve the particular regulatory policy or policies. Most obviously, if the guiding regulatory policy is to support efficient business practice and to encourage commercial innovation, and if smart contracts promise beneficial and efficient innovation, then the central question will be whether smart contracts are sufficiently supported by the rules of law.

In this context, the Law Commission's report on electronic trade documents is of interest.[55] Unlike its report on smart contracts, in which the Commission sees no need to resort to legislation (no need, for example, to record in legislative form that smart contracts, like e-contracts, are in principle capable of being legally enforced), it includes a draft Bill with its report on documents.

53 See, e.g., the approach in *Hong Kong Fir Shipping Co Ltd v Kawasaki Kisen Kaisha Ltd [1962] 2 QB 26* and the majority's interpretation in *Wickman Machine Tool Sales Ltd v L Schuler AG [1974] AC 235.*

54 Ronald Dworkin, *Taking Rights Seriously* (Duckworth 1978) at 84.

55 Law Commission, *Electronic trade documents: Report and Bill* (Law Com No 405) (2022).

Not only that, the tenor of the Commission's thinking is distinctly regulatory. Thus, speaking of the market in international trade, the Commission notes that:

> Despite the size and sophistication of this market, many of its processes, and the laws underlying them, are based on practices developed by merchants hundreds of years ago. In particular, international trade still relies to a large extent on a special category of document that entitles the holder to claim performance of the obligation recorded in the document, and to transfer the right to claim performance of that obligation by transferring (physical) possession of the document….
>
> This is clearly archaic, inefficient, and wholly unsuited to a world in which processes and transactions are increasingly in digital form. Allowing for electronic versions of certain trade documents could lead to significant cost savings and efficiencies, together with improvements in information management and security.[56]

In other words, the old merchant practices and their governance are no longer fit for purpose and a new regulatory framework—admittedly one that causes the minimal disturbance to existing law—needs to be put in place.

On the other hand, we should not assume that, wherever business sees some commercial advantage in the use of smart contracts, then regulatory thinking will do everything to facilitate their use. In some cases, particularly where consumer or investor protection is the relevant policy, it might be perfectly clear that smart contract applications cut against that protective policy. So, for example, if a supplier of digital services could immediately suspend or withdraw the services in the event of a minor breach by the consumer, this would be seen as disproportionate and contrary to policy.

3.2.2 Constraints

The constraints that are characteristic of Law 1.0 thinking are simply not applicable to a Law 2.0 perspective. There is no need to be concerned about how flexible legal principles are or about the kind of doctrinal tensions or contradictions that worry coherentists. If more flexibility is needed, it can be supplied; if there are some contradictions or tensions with other pieces of regulatory law, they can be disregarded unless it means that some parts of the law are pulling in favour of a policy while others are pushing back against it—as might be the case, for example, at the interface of IP and competition law, or if data protection law interferes with the beneficial use of smart contracts.[57]

Nevertheless, regulators might find that they are legally constrained by constitutional or public law principles (such as compatibility with human rights);[58] and, because regulatory interventions will typically originate in the political arena, they will have to reckon with the usual political pressures whether stemming from industry or commercial stakeholders or from the public at large.

56 At paras 1.3-1.5.

57 On the latter, see Michèle Finck. *Blockchain Regulation and Governance in Europe* (Cambridge University Press, 2018) Ch 4.

58 See, e.g., *S and Marper v United Kingdom* [2008] ECHR 1581 (on DNA profiling for criminal justice purposes).

3.3. From a Law 3.0 Perspective

An influential Law 2.0 view advocates 'smart regulation', meaning that regulators should not rely on just one kind of regulatory instrument but should seek out the optimal mix of incentives and disincentives, of rules and principles, of hard and soft law, and so on.[59] From a Law 3.0 perspective, a modified version of smart regulation advocates the optimal mix of instruments but those instruments are now rules and tools.

The headline question from a Law 3.0 perspective is whether particular regulatory policies might be better served by, or regulatory functions might be better performed by, smart contracts. To the extent that governance and public functions operate in a transactional way (as they can in procurement, penal correction, welfare provision, and so on), then there might be a role for smart contracts. Just as business people will be asking whether the use of smart contracts makes business sense, those involved with governance will be asking whether smart contracts (alongside rules and other codes) make regulatory sense. Where the use of smart contracts does make regulatory sense their use will be authorised or even required.

For example, where the regulatory policy is to support a green energy policy, it might lay out a bespoke regulatory framework for smart local grids and the supply of surplus household energy to the local grid. As part of the technological array that constitutes this smart grid, smart contracts might be deployed to transfer payments to household suppliers.

Regulators might also look beyond their own regulatory functions to consider whether the use of smart contracts by regulatees will assist with regulatory objectives. So, while those who supply consumers with goods or services might decide for their own business reasons to make use of smart contracts, regulators might also decide that consumer protection policies might be better served if smart contracts were used (for example, in relation to the transfer of compensatory payments in the event of flights being delayed or cancelled).

That said, the constraints that apply to Law 2.0 regulatory measures also apply to Law 3.0 regulatory measures. For example, in the USA, a proposal to design vehicles so that cars were simply immobilised if seat belts were not worn was eventually rejected. Although the (US) Department of Transportation estimated that the so-called interlock system would save 7,000 lives per annum and prevent 340,000 injuries, there was a popular push-back against this technological fix. Taking stock of the legislative debates of the time, Jerry Mashaw and David Harfst remark:

> Safety was important, but it did not always trump liberty. [In the safety lobby's appeal to vaccines and guards on machines] the freedom fighters saw precisely the dangerous, progressive logic of regulation that they abhorred. The private pas-

59 Neil Gunningham and Peter Grabosky, *Smart Regulation* (Oxford University Press, 1998).

> senger car was not a disease or a workplace, nor was it a common carrier. For Congress in 1974, it was a private space.[60]

In the same way, there might be a push-back in some trading communities where the imposition of smart contracts would undermine the trust basis on which business has traditionally been done.[61]

4. Concluding remarks

From a legal perspective, there are three conversations that we can have about smart contracts. First, there is a traditional Law 1.0 conversation in which we ask whether we can fit the general principles of contract law to novel factual situations in which smart contracts feature. Secondly, there is a regulatory Law 2.0 conversation where the question is whether our legal rules are fit for purpose relative to our policy objectives in relation to the use of smart contracts. Thirdly, there is a vanguard Law 3.0 conversation in which we ask whether smart contracts might be deployed (with rules) to discharge legal and regulatory functions. Whereas the first two conversations are typically reactions to technological innovation that contractors are interested in using for their transactional and business purposes, the third conversation is prompted by the thought that these technologies might serve as tools for governance and regulatory purposes.

Looking ahead, while smart contracts might not be the future, they are surely some part of our transactional futures. In those futures, the traditional principles of contract law and, concomitantly, the perspective of Law 1.0, are likely to be of diminishing importance; and, at the same time, it will be the perspectives of Law 2.0 and Law 3.0 that become more significant for the governance of transactions. In parallel with these changes, humans become less salient in the foreground of transactions and, even in the background, it is the relations between machines (possibly with AI-enabled machines being recognised, for regulatory purposes, as having the status of legal persons) that become dominant. Arguably, despite the resistance of the thinking that is characteristic of both Law 1.0 and Law 2.0, the direction of travel is towards a fully automated and technologically managed regulatory environment (and, concomitantly, towards the evolution of a Law 4.0 perspective). If humans are to remain in control, if they are not to be de-centred, some smart thinking—not least, smart thinking by lawyers[62]—is urgently needed.

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60 Jerry L. Mashaw and David L. Harfst, *The Struggle for Auto Safety* (Harvard University Press, 1990) at 140.

61 Karen E.C. Levy (2017) 'Book-Smart, Not Street-Smart: Blockchain-Based Smart Contracts and the Social Workings of Law' 3 Engaging Science, Technology, and Society 1. Compare, too, Yeung (n 23). And, for a sophisticated analysis of smart contracts and trust, see Christoph Kletzer, 'Law, Disintermediation and the Future of Trust' in Larry A. DiMatteo, André Janssen, Pietro Ortolani, Francisco de Elizalde, Michel Cannarsa and Mateja Durovic (eds), *The Cambridge Handbook of Lawyering in the Digital Age* (Cambridge University Press 2021) 312.

62 Compare Frank Pasquale, *New Laws of Robotics* (The Belknap Press, 2020).

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Is Blockchain the key to empowering Local Energy Communities?

by Tiago Tavares, Mário Amorim Lopes [1]

Abstract

As the urgency to decarbonise the energy grid increases, with the Covid-19 pandemic and Russia's war in Ukraine working as acceleration factors, countries are progressively incentivising Distributed Energy Resources (DER) deployment through regulation at the local level. Energy Communities (EC) enable active participation by domestic and non-domestic entities to establish local structures to generate, consume, share, and sell energy and to provide flexibility services in the wholesale market. It also presents a solution to increase monetisation from Renewable Energy Sources (RES) compared with the current incentive schemes from retailers. One of the critical factors for developing an EC is the level of trust among the community members. In this environment, energy could be transacted as a commodity. Presentation of the respective information on energy online is accordingly of intrinsic value. Thus, its digital representation is of intrinsic value. A democratic decision-making process also depends on the security of the information involved. Distributed Ledger Technologies (DLTs), in particular blockchain, provide a technological infrastructure that enables the secure functioning of a decentralised digital database, eliminating the need for a central authority to control a system against manipulation. As the concept of ECs is scaled up allowing inter-community cooperation, blockchain could guarantee a verifiable virtual system for governance, DER management, and energy trading among multiple entities.

Keywords: Energy Communities; Renewable Energy; Blockchain; Decentralised Autonomous Organisations; DER management; Decentralised Energy Trading.

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1. Introduction

The European Parliament declared a climate and environmental emergency in November 2019, reinforcing the shared goal of achieving zero greenhouse gas emissions by 2050. The energy sector is the most polluting sector of human activity, accounting for about 33% emissions of carbon gases in the atmosphere (Friedlingstein et al., 2019). Renewable energy technologies are critical to reducing electricity-related emissions. Global generation from renewables is estimated to triple by 2030 and grow eightfold by 2050 (International Energy Agency, 2050). This assessment increases the share of renewable energy in total output from 29% in 2020 to around 60% in 2030 and nearly 90% in 2050.

A second factor pushing the increase towards clean energy relates to the impact of the Russian invasion of Ukraine. Fisher (2022) reports that 40% and 27% of the European Union's (EU) imported natural gas and oil, respectively, are supplied by Russia. While sustaining a postCOVID-19 recovery, this conflict exposed the EU's dependence on Russian resources showing that diversification of energy supplies towards renewables is critical to establishing energy security (CNBC, 2022).

The primary renewable sources of electricity generation are solar and wind. In 2020, they provided around 9% of global electricity generation (International Energy Agency, 2021). By 2030 and 2050, they are expected to provide 40% and 68%, respectively. This expansion comes down to increased decentralisation of production in two ways: self-consumption or similar legal regimes and local participation in the Wholesale (WS) electricity market. Both scenarios require a response from the grid infrastructures to accommodate this capacity and all the challenges that the new energy supply and demand paradigm will bring to worldwide electricity systems.

In this context, the Energy Community (EC) concept is emerging. The EU introduced it through the Clean Energy for all Europeans Package (CEP) (Commission, 2019). This package introduces new rules that promote consumer participation at the local level in all markets, whether by generating, consuming, sharing, or selling electricity or by contributing to the balance between production and consumption (flexibility services). The directives address ECs, particularly as Citizen Energy Communities (CEC) and Renewable Energy Communities (REC). CECs and RECs constitute legal entities effectively controlled by their shareholders or members. The CEP specifies that the ECs' primary purpose is to "provide environmental, economic or social community benefits for its shareholders or members of the local areas where it operates, rather than financial profits". The main differences between the two types lie in governance and the spectrum of activities. REC's participating members must be located near the energy sources, and the activities are limited to generation (electricity and heat), consumption, storage, aggregation, and selling of energy. Roberts et al. (2019) further details this distinction.

Furthermore, the REC legal framework allows renewable energy consumers and producers within geographical proximity to participate directly in the wholesale electricity market or self-consume and sell the surplus to retailers, aggregators, market facilitators, or other third parties. At the environmental level, one evident benefit is linked to the increased deployment of distributed renewable generation, which directly contributes to participation in the energy transition. This is further encouraged by economic incentives. REC members benefit from lower break-even time on Distributed Energy Resources

(DER) investments and risk-sharing in the investment phase, leading to a significant added value in local acceptance of renewable energy and access to additional private capital. It leads to a greener economy at the community level. A survey conducted by European Commission (2019) of 18 EU member states identifies local investment in renewables, reduction of the energy bill for end-consumers, and guaranteed use of green energy as the central values of energy communities in order of importance.

The shift from a relatively small number of centralised bulk producers and single-direction energy flow to decentralised multi-actor energy communities with a multi-way flow of energy and information requires new digital solutions. These should allow participants and control systems to exchange information securely, as data represents a new asset in the current age. This is particularly important when it comes to information that possesses an inherent value, such as private data (e.g. personal information, energy measurements), or that can be used in transactions of assets, such as money, goods or even a title to a piece of property. In today's legacy systems, data is verified and stored by a central third party - an energy government agency or company and a bank in the case of financial transactions. This fact raises several concerns, especially at the security level. What is more, this data can be sold or used for economic benefit - which is the case with big tech companies. Every time we use a device connected to the internet, we produce data that is being monetised as an encapsulated service or platform that no one else can interoperate or access. This has encouraged the building of non-privileged, trustless, decentralised, open, and transparent platforms. The goal is to create digital services that allow the individual to own the data, whether it represents an entity's private information or intrinsic value that can be transacted. The success of the sustainable expansion of energy communities could therefore rely on innovative digital systems that connect new entities, business models, and technologies.

The existing literature barely addresses the conceptualisation of ECs as regards the use of Blockchain in energy-related services and the organisational structures needed to create sustainable entities. To address this gap, we conduct an integrative study and analysis of the operationalisation of ECs with this technology. The goal is to describe viable use cases and how they create value and tackle existing wants and needs.

The remainder of this paper is structured as follows: Section 2 explores the underlying legal framework that allows local communities to be established within the macro scope of the energy market. Section 3 addresses how Blockchain tackles the trust issue in the digital medium. Section 4 reveals three prominent use cases: self-governance, DER management and system operation and decentralised energy trading. Section 5 builds on the previous sections to present final remarks.

2. The Existing Legal Framework

Self-consumption (SC) and ECs are considered crucial tools for the energy transition and decarbonisation. Their impact ranges from lower energy costs and CO2 emissions to improved balance in the system, resilience, and energy autonomy. Frieden et al. (2020); Roberts et al. (2019)

focus on explaining regulation regarding these concepts. The authors address the legal framework for self-consumption, energy communities and similar concepts in all 27 EU member states and Switzerland. As an example, this section presents the Portuguese case, in particular in relation to RECs, which is similar to that of other European countries.

Self-consumption is defined in Decree-Law 162/2019 as the consumption of electricity from renewable sources produced through Self-Consumption Production Units (SCPUs). One or a group of self-consumers can benefit individually or collectively from an SCPU, thereby introducing the concepts of individual and collective self-consumption. The legislation lays down that each self-consumer must have a retailer who can provide energy from the grid when needed. That is identical to any supply contract between a final consumer and a retailer.

Individual self-consumption was already contemplated in the previous Portuguese legislative framework (Decree-Law No. 153/2014, 20 October). In this situation, a final consumer produces renewable electric energy for consumption. The production unit is within the utilisation installations, which may be a home (domestic case) or a commercial enterprise (non-domestic case). The legal framework provides the possibility of the final consumer storing or selling electricity from renewable sources. In the non-domestic case, these activities must not be the enterprise's principal business.

Collective Self-Consumption (CSC) extends the concept of self-consumption to the possibility of two or more self-consumers using the same SCPU when there is geographical and electrical proximity. The Directorate-General for Energy and Geology (DGEG) - the Portuguese public body responsible for inspecting electrical installations - defines the parameters for this proximity. Examples are self-consumers located in the same building, flat areas with houses, commercial, industrial, or agriculture units/complexes, and other infrastructures as long as they are located in a particular area with access to the production unit. This model includes several consumption infrastructures connected to the same SCPU through the building's internal network or the public electricity grid. The latter requires payment for its use, represented by the grid access tariffs. The advantage of this model is that the various consumers share the costs of investment and maintenance. For this purpose, the Portuguese regulation for CSC requires the creation of a Self-consumption Management Entity (SCME). The SCME acts as intermediary in the self-consumers' relationship with regulatory agencies and the Distribution System Operator (DSO). Its role involves asset registration, communication of the allocation coefficients, and selling the surplus energy to an aggregator or directly to organised markets. It therefore plays a decisive role in defining energy distribution among members.

Decree-Law 162/2019 also introduces the concept of Energy Community (Conselho de Ministros, 2019). This decree-law stems from European Directive (EU) 2018/2001 and introduces a legal regime that allows self-consumers of renewable energy to produce, consume, store, share, and participate in the market without financial overcharges, facilitating private investment in DER.

The concept of REC is defined "as a legal person established under the terms of this decree-law, with or without profit-making purposes, based on open and voluntary association between its members, partners or shareholders, which may be natural or legal entities, of public or private na-

ture, including small and medium-sized enterprises or local authorities, which is autonomous from its members or partners and controlled by them" (Conselho de Ministros, 2019). An important detail also included is that members or participants must be located near the renewable energy projects or where the activities related to renewable energy projects are carried on.

The CSC model and the EC are very similar concepts. In both, several self-consumers are electrically connected to the same SCPUs. The differences lie in how the models are organised. While in Collective Self-Consumption, management is assumed by the group of self-consumers, governed by internal regulations, in ECs, a collective entity performs this management function and is made up of the members of the community and other participants not owning a share in the SCPU (Ramires, 2020). In other words, CSC only brings together entities that consume and produce energy by owning a share in the SCPU. In addition to self-consumers, an EC allows for the involvement of consumers not owning a percentage of the production units. Nevertheless, we can establish energy exchanges among peers in the two scenarios.

At the moment, there are over 1900 energy cooperatives across the EU (REScoop, 2022). However, the European directives are still being transposed into national law. Hence the projects are generally limited to pilot experiments of potential scientific interest but without a significant impact on the expectations of the community members.

The regulatory framework for SC and ECs is already well established. Even though there are still subjective restrictions (i.e. geographical proximity), the energy situation in the EU calls for increased flexibility and direct support to businesses and projects (Abnett, 2022). The most critical task is therefore to build the technological infrastructure for communities to operate independently and seamlessly.

3. Blockchain as the Trust Layer for Digital Infrastructure

Distributed ledgers are immutable databases replicated and synchronised across a decentralised network of participants. They therefore consist of information systems that allow the recording and sharing of data in a secure, transparent, and traceable manner (Hrga et al., 2020). This technology uses access, validation, and storage protocols through bilateral communication networks of computers distributed across several locations. The decentralised nature of DLTs solves the problem of dependency on third parties in information processing and use of a centralised database (Douglis and Stavrou, 2020). The key difference between centralised and decentralised ledgers is that the latter are maintained by a network of computers. From the user perspective, systems that implement this technology allow individuals to securely record and retrieve data without relying on a middleman. DLT is currently being applied in many areas such as finance (Chang et al., 2020), supply chains (Roeck et al., 2020), healthcare (Brogan et al., 2018), the public sector (Alketbi et al., 2018) and real estate (Ullah and Al-Turjman, 2021). The common goal is to disintermediate digital services by creating cryptographically secured information on a distributed ledger.

Depending on the ledger data structure, there are several types of DLTs for developing decentralised digital infrastructures. Blockchain and Directed Acyclic Graph (DAG) are the most common. Besides these two, Hashgraph, Tempo, and Holochain are also emerging as viable alternatives. Different data structures have evolved to solve the vulnerabilities and limitations of blockchain as regards scalability, security and decentralisation.

In a blockchain, a transaction contains the data to be stored in the ledger. Currently, fourth generation platforms are being developed, focusing on scalability, the energy efficiency of consensus mechanisms, flexibility, and usability with a view to mass adoption. According to Javaid et al. (2021), Blockchain 4.0 includes Artificial Intelligence (AI) as part of the platform, reducing human management by allowing functions to make decisions and act on systems, improving the technology's adaptation to real, contemporary and future environments.

A Smart Contract is code that runs on a blockchain. No individual or entity controls the application once it is deployed on the network. It allows programs to run precisely as programmed with no possibility of downtime (Buterin, 2014). According to Andoni et al. (2019), in 2019, the Ethereum platform was being used by 50% of all blockchain-based energy-related projects solutions, followed by Hyperledger Fabric, an enterprise-grade permissioned DLT.

The Energy Web Chain (EWC), the world's first enterprise-grade, open-source blockchain platform customised for the energy sector's regulatory, operational, and market demands, was released by Energy Web Foundation (EWF) in 2019 (Hartnett et al., 2019). EWC is a public permissioned blockchain tailor-made for the energy sector. EWF decided to rely on the Ethereum platform in the design of EW-Chain, replacing the Proof-of-Work (PoW) consensus algorithm, which consumes a significant amount of energy to operate, with the Proof-of-Authority (PoA) consensus mechanism. A set of N trusted nodes called authorities execute the PoA algorithms. Lashkari and Musilek (2021) further detail this consensus method. In this case, the EWC network comprises a consortium of more than 100 companies, such as the Australian Energy Market Operator, Elia Group, Engie, Vodafone, Volkswagen, and Iberdrola. This setting is best suited to the energy supply chain, which involves large intermediaries, particularly in the distribution and transmission layers.

One novel feature that EWC has introduced in the decentralised application landscape is the integration of self-sovereign identities (SSIs). SSI is a new model for digital identity on the internet. It constitutes a decentralised version of the public key infrastructure. SSI and Blockchain combined provide a decentralised solution for securing connections between any two peers. By using public blockchains to store public keys and verifying the signatures on digital identity credentials, peers can exchange proofs of real-world identity. In essence, SSI turns "physical identity credentials in our physical wallets into digital credentials in digital wallets" (Preukschat et al., 2021). Digital identities could play a crucial role as ECs scale up to incorporate domestic or corporate entities and multiple assets from several suppliers. Each identity is easily verifiable through a transparent and highly accessible data layer.

Another innovative tool introduced by EW is Decentralised Logic Execution (DLE), allowing multiple stakeholders to verify business-critical processes on a blockchain. The data flow must be

privately shared and processed in several energy use cases with strict performance requirements. For example, DLE's advantages could match the requirements described in Oriano et al. (2018) for a decentralised flexibility market. In the context of ECs, a community member could verify the result of a particular business process (i.e. energy trading) as it impacts its operation.

Avelino et al. (2014) highlight the importance of trust in an energy community. The need for trust in this environment is present in every aspect of an EC business model, from the decision-making on asset management to energy distribution resulting from a sharing mechanism. At present, the energy landscape possesses strict conditions for the information to flow between grid participants. It is often limited by geographical allocation, multiple stakeholders or varying layers of privacy and verifiability prerequisites. In some situations, sensitive input data cannot be shared publicly (i.e. private energy consumption and generation); in others, business results require public verification (i.e. local energy markets). Leveraging SSI, DLE and other tools as part of a blockchain infrastructure could provide energy communities with the necessary sophistication to operate securely and sustainably.

4. Use Cases in Energy Communities

Blockchain is expected to emerge in the next generation of applications in energy systems. This section focuses on and extends the 3 clusters of use case categories identified in Hrga et al. (2020); Teufel et al. (2019); Andoni et al. (2019); EUBlockchain (2022), which are most relevant. Figure 1 shows the building blocks that allow the multiple use cases of blockchain to provide value to an EC.

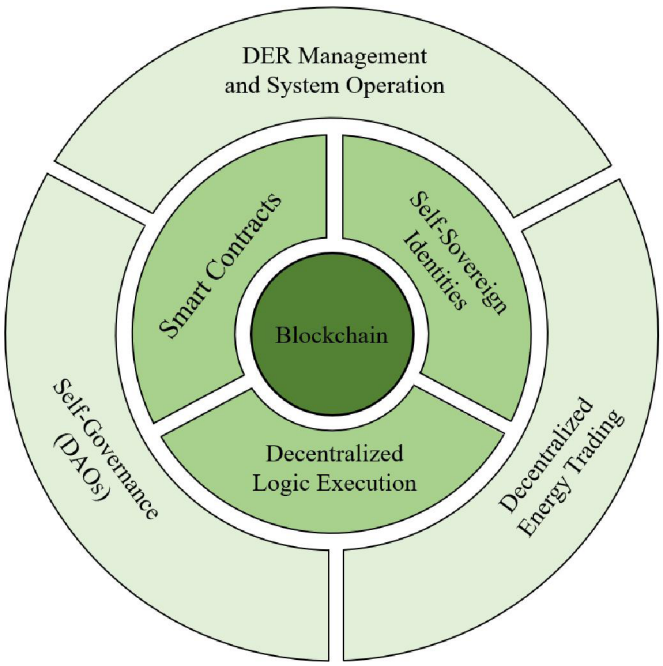

Fig. 1. Blockchain use cases and core building blocks for Energy Communities operation.

4.1 Self-Governance

The paradigm shift towards local energy supply and demand brings new challenges at the societal level, where collective decision-making is fundamental. F.G. Reis et al. (2021) analyse 36 EC business models. Most are characterised as energy cooperatives created by end-consumers, mainly companies, which voluntarily raise funds for acquiring energy generation systems. In most cases, governance is distributed among shareholders, who receive part of the revenues reinvested in the community. Tounquet (2019) notes the applicability of Elinor Ostrom's (winner of the Nobel Memorial Prize in Economic Sciences) design principles of common-pool resources in this societal context. In most organisations, the governance process is usually highly centralised within a group of administrators representative of a small minority of the community. The lack of technological tools for governance has led to opaque decision-making and concentration of power among a few entities (World Economic Forum, 2022). Moreover, centralised organisations may overemphasise narrow goals at the expense of broader global optimal outcomes. In an EC, the overheads of centralised management can therefore be significant.

Decentralised Autonomous Organisation (DAO) has emerged as a viable alternative to conventional centralised institutional structures. DAOs rely on decentralised infrastructure to democratise the management of organisations. Blockchain creates an accessible and transparent digital medium for voting, automating and enforcing business processes based on governance decisions. The Moloch DAO (Soleimani et al., 2019) is an example of a public DAO for funding and developing projects in Ethereum. Contributors are given voting rights proportional to their contribution relative to the total pool. The project also introduced other core mechanisms to provide strong financial incentives for members to increase pool ownership and disincentivise collusion.

There are no examples of DAOs in the context of ECs at the moment, despite their potential to manage shared resources locally. We have only recently observed digital identity advances, which are crucial to ensure a verifiable and private environment. Further research on this use case is expected as the adoption rate of this organisational structure increases globally.

4.2 DER management and system operation

A large amount of money is invested in physical infrastructure to provide energy services. However, with robust cyber security, the current virtual infrastructure lacks interoperability and accessibility. The cryptographic nature of Blockchain could provide the missing layer for energy services to be provided locally without third-party dependencies. This subsection details how grid and asset management, energy origin tracking and electric mobility could be achieved.

4.2.1 In the virtual layer, DER management and system operation Blockchain could ensure that power and storage energy will be used to balance supply and demand in the electricity market. Through smart contracts, the flows of renewable energy surplus could be automatically managed in line with the grid's needs. Distributors and transmission operators could also benefit from tracking energy trans-

actions. Facilitating this communication between all the layers of the wholesale energy market could provide greater reliability in integrating DER and optimising the grid's energy efficiency locally.

Gridchain is an innovative pilot software that models real-time grid management (Gridchain, 2019). The tool seeks to improve cooperation between TSOs, DSOs, and aggregators to control congestion in the grid. Gridchain also contributes to the standardisation of European communication technology for future smart grids.

4.2.2 Asset management security and resilience are crucial factors to consider in asset management. Blockchain enables cryptographically signed information and control signals and commands from an operator to be sent to and from an asset, enabling a decentralised managed system. It ensures that each asset operates as an independent point of encrypted security using digital identities. ECs should therefore be able to manage smart meters, water heaters, and solar panels efficiently, among other devices. DLE could be used for verifiable machine algorithms to obtain, for example, optimal charging and discharging points for storage system installations.

Dutch DSO Stendin is currently implementing a nationwide decentralised asset management system (Jones, 2022). A digital identity is assigned to each distribution asset, anchored in an existing SIM card. The same concept could be applied locally, plugging independent Supervisory Control and Data Acquisition Systems into a blockchain.

4.2.3 Renewable Energy Certificates. The third subcategory involves the issuing of Renewable Energy Certificates (RECs). RECs prove that a given unit of energy is generated from clean energy sources and acts as a market-based instrument to promote clean energy rollout. Using DLT, it is possible to certify producers immediately when the electricity is generated. This functionality makes it possible to log network events in real-time and make the information available to consumers looking to buy at a given moment. As a result, public bodies' costs in issuing certificates are reduced by automating the data verification process.

D-REC is a pilot platform for tracking, issuing, transferring, and redeeming RECs from thousands of small-scale DERs in developing economies such as in Sub-Saharan Africa (D-REC initiative, 2021). The platform uses EW's open-source tools, such as EWC. One of its uses is the tokenisation of certificates. Each token contains the proof that a specific amount (1MWh) of renewable energy (solar home system) was generated at a unique location, determined via GPS at a given time (timestamp). Further details are explored in Climate Ledger Initiative (2021).

4.2.4 Electric Mobility. At present, several e-mobility projects take advantage of Blockchain. DLTs enable the vehicle charging process and consequent payment through decentralised IDs and cryptocurrencies without the involvement of third parties. Disintermediation of this process reduces overall costs for consumers. In addition, decentralised networks possess an inherent ability to scale up to the volumes required for a DER-rich landscape. This characteristic is not viable with centralised digital hubs, with a single governance model, a single point of failure, and multiple sources of truth.

EUBlockchain (2022) presents a case study for a blockchain-based payment and validity check system in EV services sponsored by BMW. The solution was developed on EWC with the implementation of SSI. This approach showcases a solution for autonomous cars, which are required to pay for services without user interactions. It demonstrates a halving of the number of involved parties, given that many intermediaries, such as charge point aggregators or payment providers, are not required in this system.

4.3 Decentralised Energy Trading

A primary use case of Blockchain is to allow market agents to buy and sell excess energy in a B2B environment. As mentioned, a blockchain-based platform does not depend on third parties to store supply and demand requests.

At the moment, surplus energy is injected directly into the grid. The asset owners receive a relatively small fixed feed-in tariff based on multiple-year contracts with a single energy retailer. Additionally, switching electricity providers requires significant time and effort for the user compared to the possible cost savings. As a result, the environment created does not incentivise DER deployment at local level. This fact is fundamental as the trend is to empower consumers by moving towards user-centric energy markets. In addition, pure consumers cannot take advantage of the surplus produced by self-consumers in the same geographical location. A significant cost opportunity exists for the self-consumer who could supply the energy at an increased price relative to the feed-in tariff and the consumer who can buy energy at a lower price than the supply contract with the retailer.

Four main objectives are identified for using a distributed ledger for this use case. The first is secure and transparent validation and verification of transactions. The second is reduction of transaction costs, since there is no intermediary entity, and third is increased market competition, allowing small producers to deal directly with consumers. The final and most crucial goal, flowing from the previous three, is a reduction of energy costs, especially in the B2B segment.

As for the projects associated with this use case, Power ledger is the most referenced. This Australian startup has developed a residential P2P marketplace for energy exchange between prosumers and local consumers, offering three different decentralised services: Virtual Power Plant (VPP) 2.0, in which households can sell their energy stored in batteries during demand periods; xGrid, used to sell energy generated from solar panels to other households on the electricity grid; and uGrid, aimed at large buildings, such as shopping centres and flats, which allow solar energy to be sold to tenants and neighbours. Power Ledger's platform provides a framework that allows it to easily interact with energy markets across the globe, using two cryptocurrencies: POWR and Sparkz. The purchase of sufficient POWR allows peers to access the ecosystem. They can then convert POWR to Sparkz to access the P2P trade features. The latter is limited to representing the unit value of electricity in various global markets. A user then converts POWR into Sparkz through Smarts Contracts on Ethereum to buy electricity. This escrow mechanism puts POWR into "collateral" until the amount in Sparks is received (PowerLedger, 2019). Moreover, Power Ledger was

also included in the report prepared by the EU Blockchain Observatory and Forum (EUBlockchain, 2022). The team used its xGrid application in a proof-of-concept project in India to incentivise the uptake of DERs. The platform connected smart meters installed in 12 buildings through GPRS communication, including nine prosumers and three consumers. During the experiment, the P2P energy market buying price was 43% lower than the retail tariff. As a result, the Uttar Pradesh Electricity Regulatory Committee created a specific tariff order that allows all the utilities in the city where the project was conducted, home to 90 million people, to implement P2P energy trading.

5. Conclusion

As it exists today, the wholesale energy market was designed for energy to flow in a single direction, from large producers to final consumers. This architecture allowed for building and maintaining a nationwide fossil-based power grid, which required significant initial investment. However, this design is not sustainable, as the current climate and energy crisis prove. Moreover, new technologies are needed to create enough resilience to accommodate an increasing number of DER. This growth is impacted by the falling cost of PV panels and wind turbines. Renewable energy resources have become attractive for industrial and domestic usage, bringing energy sources closer to energy consumption.

Energy Communities (ECs) are emerging as a legal structure to organise the energy system at the local level, taking advantage of the geographical location of active prosumers. Its collective nature raises development challenges as regards self-governance and management that can be tackled using Blockchain.

Within this global environmental and energy crisis, ECs present a solution for expanding DER deployment and increasing renewable energy generation. The maturing of this concept has attracted the attention of research institutions and businesses that want to leverage new regulatory frameworks to develop means to disentangle energy consumption from the main grid. This goal is achieved by creating closed local structures with innovative energy management and governance models. In parallel, blockchain technology is coming forward as a disruptive technology for digital infrastructures involving multiple stakeholders where information security and transparency are fundamental requirements.

Although nationwide energy distribution is heavily regulated, local communities are not. For this reason, the former allows multiple agents to interact and inherently trust a traditional centralised system. However, the same digital infrastructure does not fit local structures with multiple untrusted parties operating without legal supervision. Blockchain technology could provide a trusting, non-regulated environment where multiple prosumers communicate through a decentralised system. Two fundamental building blocks that provide the necessary tools for developing use cases are highlighted: Self-Sovereign Identity and Decentralised Logic Executing.

This work is motivated by a need to build a bridge between the activities of ECs and blockchain technology. Three clusters of use cases are described. The first encompasses self-governance through Decentralised Autonomous Organisations. A DAO is a new form of organisation that attempts to decentralise the operation of firms and other collective entities. It makes practical and financial information transparent and empowers stakeholders to propose, vote, and enact changes. EC members could use this concept to collectively manage community resources and internal services without relying on a central entity. The second use case involves energy resources management, particularly asset and grid management, renewable energy certificates and electric mobility. A decentralised ledger could work with the local physical infrastructure to achieve optimal benefits for all stakeholders. The last concerns decentralised energy markets enabling P2P energy exchanges at the local level. This service tackles the existing opportunity cost of selling excess energy to retailers instead of consumers in the proximity of the production sources.

If we consider inter-community interactions, the need for a trusting environment is significantly greater. This gives rise to the challenge of creating transparent, modular, secured, and extensible platforms, using different designs, governance models, asset management strategies and even local trading price mechanisms. Thanks to their decentralised nature and cryptographic capabilities, the platforms could provide accurate and verifiable tracking of every energy unit throughout a community lifecycle. This advance could represent the first step towards self-governed, self-managed and self-sufficient decentralised communities.

"It is with pleasure that I write a foreword to this very interesting and well-structured collective work, which is the by-product of an international academic conference held in Lisbon in mid-2022. This work deals with the legal challenges related to the application of FinTech technology in the provision of financial services, as well as the interplay with the licensing principle as applicable to traditional financial service providers."

Professor Christos V. Gortsos

President of the Academic Board
of the European Banking Institute

Fintech Regulation and the Licensing Principle

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