Insights & Analyses

Cryptocurrencies as 'Fungible Digital Assets' Within the Italian Legal System: Regulatory and Private Law Issues

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Abstract

The essay provides a comprehensive overview of cryptocurrencies within the Italian legal framework and, taking its cue from the current regulatory landscape, deepens their most salient regulatory and private law aspects.

More specifically, the first part offers a description of the evolution of AML regulation relating to cryptocurrencies, in which the notion of 'digital currency' first appeared in Italian law.

Additionally, the essay considers issues related to cryptocurrencies' legal qualification – among financial instruments, products or means of payments – also in the light of the roles and functions of providers of custody and exchange services.

Having analyzed those topics, the core of this paper deals with the main private law problems and questions, involving cryptocurrencies as digital assets originated through distributed ledger technologies (DLTs). The main areas of focus are: the acquisition and transfer (*inter vivos* and *mortis causa*) of cryptocurrencies, liens over cryptocurrencies and liabilities of cryptocurrency-related service providers.

I. Definition and Legal Qualification

Until the forthcoming entry into force of a Regulation setting licensing and compliance requirements for platforms providing custody and/or trading services relating to cryptocurrencies, which was issued in February 2022 by the Ministry of Finance (decreto 17 January 2022, on which, see below, para III), individuals based in Italy can freely access virtually all on-line exchange platforms operating transaction on cryptocurrencies, provided that no specific shut-down injunctions have been issued against a specific platform by competent administrative or judicial bodies. In the last few years, quite a number of those orders were issued by the Italian market authority (Commissione Nazionale per le Società e la Borsa: from now on, Consob) *vis-à-vis* platforms that, without

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being licensed as investment firms under MiFID, would offer, alongside cryptocurrencies, actual investment services (as defined under MiFID and decreto legislativo 24 February 1998 no 58, Testo Unico della Finanza from now on), including derivatives, certificates or contracts for difference having cryptocurrencies as their underpinning. This depends on the Consob's view of cryptocurrencies not qualifying as financial instruments (see below, para II).

Provided that this general capacity of Italian-based users to trade in cryptocurrencies, the Italian market for cryptocurrencies (on the demand side) appears to be in line with the European average, both in terms of transaction volume per capita and its distribution among different kinds of cryptocurrencies (Bitcoin and Ethereum covering approximately sixty percent of the market), including so-called stablecoins, ie cryptocurrencies whose exchange value is – or at least aims at being – correlated to one or more fiat currencies. Apparently, also Italian-based users resort to actual cryptocurrencies moved into them for speculative reasons (in fact, cryptos have increased their market value over time), whereas investment in stablecoins is driven by a less speculative investment objective, being those transactions to which the functional subrogate of the purchase of the fiat currency the stablecoin is referenced. Use of cryptocurrencies and stablecoins as a means of payment seems to be, presently, not significantly developed among consumers; however, no official or accurate data are available in this respect.

In the Italian regulatory landscape, the first legal notion that would include – but is not necessarily limited to –[1] cryptocurrencies, can be traced back to 2017, when decreto legislativo 21 November 2007 no 231, implementing EU-level legislation on the prevention of the use of the financial system for the purposes of money laundering or terrorist financing (AML/CFT), was amended by decreto legislativo 25 May 2017 no 90. *Inter alia*, decreto legislativo no 90/2017, amended Art 1 of decreto legislativo no 231/2007 by adding – under para 2, letter qq – a definition of *virtual currency*. According to this provision, a virtual currency is 'the digital representation of value, not issued from a central bank or other public authority, not necessarily linked to a currency which is

[1] Merely referring to a 'digital representation of value … that can be transferred , stored and traded electronically', the legal definition does not take a specific stance on the nature of the underlying technology. Therefore, from a theoretical standpoint, also electronic digital values not based on a distributed ledger technology (DLT) and/or a blockchain would fall into this definition.

In this regard, it is useful to point out that the Italian legal system also has a definition of 'distributed ledger technology' as the IT infrastructure for so-called 'smart contracts'. Legge 11 February 2019 no 12, converting into law decreto legislativo 14 December 2018 no 135, at Art 8-*ter*, para 1, defines 'technologies based on distributed ledgers' as those 'technologies and informatic protocols which use a shared, distributed, replicable and simultaneously accessible ledger, which is architecturally decentralized on cryptographic basis and allows to record, validate, update and store data both readable and protected by cryptography and verifiable by each participant, nor changeable neither modifiable'. The subsequent paragraph, indeed, defines a smart contract as a 'processor program which operates thanks to technologies based on distributed ledger and whose execution binds two or more parties on the basis of effects previously defined by their self'.

legal tender, used as a means of exchange in order to purchase goods and services and which can be electronically transferred, recorded and traded'. This notion is instrumental in subjecting to AML duties, as set out by decreto legislativo no 231/2007,[2] any provider of services relating to the utilization of virtual currency (that is,

> 'every natural or legal person who provides to third parties, on a professional basis, and also online, services functional to use, exchange and store virtual currencies and to their converting from or in currencies which are legal tender or digital representation of value, included those convertible in other virtual currencies, as well as services relating to issuing, offering, transfer and compensation services and any others aimed at acquisition, trading and intermediation in the case of exchange of the same currencies').

This stated, it also must be pointed out that the extension of the AML framework to transactions in cryptocurrencies originated spontaneously by the Italian legislator, and later included, in the same terms, in the European Parliament and Council Directive (EU) 2018/843 of 30 May 2018 amending Directive (EU) 2015/849 on the prevention of the use of the financial system for purposes of money laundering or terrorist financing, which introduced a common definition of 'virtual currency' at the European level.[3] In parallel, European Parliament and Council Directive (EU) 2018/843 expanded the subjective scope of AML duties relating to activity in cryptocurrencies, also including a

[2] Consisting of so-called 'customer due diligence', comprising: (a) identifying the customer and verifying the customer's identity on the basis of documents, data or information obtained from a reliable and independent source; (b) identifying the beneficial owner and taking reasonable measures to verify that person's identity, so that the obliged entity is satisfied that it knows who the beneficial owner is, including, as regards legal persons, trusts, companies, foundations and similar legal arrangements, taking reasonable measures to understand the ownership and control structure of the customer; (c) assessing and, as appropriate, obtaining information on the purpose and intended nature of the business relationship; (d) conducting ongoing monitoring of the business relationship, including scrutiny of transactions undertaken throughout the course of that relationship to ensure that the transactions being conducted are consistent with the obliged entity's knowledge of the customer, the business and risk profile, including, where necessary, the source of funds, and ensuring that the documents, data or information held are kept up-to-date (Art 18 of decreto legislativo no 231/2007), and reporting of suspicious transactions (Art 35 para 1 of decreto legislativo no 231/2007). Breach of those duties triggers sanctions, depending on the type of infringement. Art 55 para 1, of decreto legislativo no 231/2007 punishes, with imprisonment from six months to three years and a fine from 10.000 to 30.000 Euros, the lack of adequate due diligence or the communication of false information from the obliged entity.

[3] In Art 1, para (2), letter (d), point 18, 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 L56/43, virtual currencies are defined as '[...] means 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 electronically transferred, stored and traded'.

further category of service providers, namely *custodian wallet providers*, ie, entities 'that provide services to safeguard private cryptographic keys on behalf of its customers, to hold, store and transfer virtual currencies'. This provision has been transposed into Italian legislation (Art 2, para 5, letter I, decreto legislativo no 231/2007) through decreto legislativo 4 October 2019 no 125.

Based on the argument of *sedes materiae*, it might be asserted that such a legal definition was not enacted with a general view of how comprehensively to regulate cryptocurrencies; instead, the only relevant regulatory angle is AML/CFT. However, this definition is now also embedded in Art 1, para 2, letter *f)*[4] of the above-mentioned decreto del Ministero dell'economia e delle finanze 17 January 2022, which, instead, sets a supervision framework regarding the provision of services relating to cryptocurrencies, focusing on custody and/or trading service providers relating to cryptocurrencies (see below, para III).

Against this backdrop, it is suggested that the Italian legislator's attention does not focus on defining and regulating the whole cryptocurrency value chain, including its infrastructural aspects and the mutual relationships between participants to a blockchain; no specific provisions are dedicated to the regulation of so-called mining activity (ie, processes that would lead to the issuance of further cryptocurrencies), and to a lesser extent. any requirement is laid with reference to the actual content of consensus protocols based on which cryptocurrency ledgers work and are maintained.

Rather, that regulation only insists on the relationships between final users (purchasers and holders of cryptocurrencies) and providers of custody and/or exchange services, the former referring to the keeping of cryptocurrencies deposit accounts, the latter referring to the performing of transactions relating to cryptocurrencies on behalf of clients. In this respect, relevant provisions of decreto del Ministero dell'economia e delle finanze 17 January 2022, will be described below, para III.

II. Regulation

Approaching the issue of cryptocurrency regulation under the Italian legal system, one preliminary distinction has to be drawn. From a regulatory perspective, it is, in fact, necessary to distinguish between financial instruments (as defined under MiFID) involving cryptocurrencies as underlying assets, from actual purchase of cryptocurrencies (either as legal or beneficial owners).

The former category encompasses derivatives, contracts for difference,

[4] For the sake of completeness, Art 1, para 2, letter *f)* states that virtual currencies consist of 'the digital representation of value nor issued neither guaranteed by a central bank or a public authority, not necessarily linked to a currency which is legal tender, used as a means of exchange in order to purchase goods and services or for investment aims and electronically transferred, stored and negotiated'.

units of collective investment undertakings, ETFs and ETPs, provided that their underlying is cryptocurrency.[5] Qualifying as transactions relating to financial instruments, those investment products undoubtedly fall within the objective scope of MiFID and can be offered to the public, provided that compliance with the regulatory framework for investment services in ensured. Thus far, no product intervention or other supervisory powers were exercised by Consob with respect to those instruments.

The latter category appears to be less straightforward. In fact, the question arises about whether or not cryptocurrencies qualify *per se* as financial instruments, namely, as 'transferable securities' under Art 4, para 1, no 44 (bearing the definition: 'those classes of securities which are negotiable on the capital market, with the exception of instruments of payment, such as: (a) shares in companies and other securities equivalent to shares in companies, partnerships or other entities, and depositary receipts in respect of shares; (b) bonds or other forms of securitised debt, including depositary receipts in respect of such securities; (c) any other securities giving the right to acquire or sell any such transferable securities or giving rise to a cash settlement determined by reference to transferable securities, currencies, interest rates or yields, commodities or other indices or measures').

It would be accurate to claim that, among Italian scholars,[6] the prevailing opinion denies that cryptocurrencies would qualify as financial instruments. This seems to be Consob's stance, too; in fact, so far, no sanctions have been imposed against providers of services relating to cryptocurrency under Art 166 of Testo Unico della Finanza (that is, abusive provision of investment services due to the lack of licensing as a bank or investment firm), when online platforms *would only receive and execute orders* relating to the purchase or sale of crypto. On the contrary, Supreme Court caselaw offers one diverging decision,[7] dismissing an appeal against a preventive seizure adopted within a criminal investigation, where the offer of cryptocurrencies was part of a more articulated fraud. In this decision, the Italian Supreme Court (Corte di

[5] On the topic see ESMA, Statement on preparatory work of the European Securities and Markets Authority in relation to CFDs and binary options offered to retail clients, ESMA71-99-910, 15 December 2017.

[6] See, among others, N. Vardi, ' "Criptovalute" e dintorni: alcune considerazioni sulla natura giuridica dei bitcoin' *Il diritto dell'informazione e dell'informatica*, III, 448-449 (2015); F. Carrière, 'Le "criptovalute" sotto la luce delle nostrane categorie giuridiche di "strumenti finanziari", "valori mobiliari" e "prodotti finanziari": tra tradizione e innovazione' *Rivista di diritto bancario*, I, 135-136, (2019); M. Mancini, 'Valute virtuali e Bitcoin' *Analisi giuridica dell'economia*, 125 (2015); A. Caloni, '"Bitcoin": profili civilistici e tutela dell'investitore' *Rivista di diritto civile*, 169 (2019); M. Cian, 'La criptovaluta – alle radici dell'idea giuridica di denaro attraverso la tecnologia: spunti preliminari' *Banca, borsa e titoli di credito*, I, 331-332 (2019); E. Girino, 'Criptovalute: un problema di legalità funzionale' *Rivista di diritto bancario*, I, 760, (2019).

[7] Corte di Cassazione 25 September 2020 no 26807, *Cassazione penale*, 638 (2021); Corte di Cassazione 30 November 2021 no 44337, available at *www.dejure.it*.

Cassazione) stated – but did not sufficiently argue –[8] that all activities carried out by the owner of the website within which the offer was carried out would constitute abusive/illegal financial activity, provided that the offeror was not licensed as a bank or an investment firm.

Indeed, it would be correct to claim that cryptocurrencies would not qualify under Italian law (and perhaps under any other jurisdiction subject to MiFID), as financial instruments. More than one argument supports such a conclusion.

First, the only existing legal definition of cryptocurrency (see above, para I) explicitly makes reference to their payment/settlement nature ('used as a means of exchange in order to purchase goods and services'), which arguably excludes its qualification in terms of transferable security; Art 1, para 2, of Testo Unico della Finanza expressly states that 'means of payment do not qualify as financial instruments'.

Second, the origination of transferable securities implies the reception of funds by an issuer, thus entailing some form of liability (even if conditional, contingent and/or residual, as in equity or quasi-equity stakes) of the recipient towards the subscriber, whereas cryptocurrencies lack an identifiable issuer.

Finally, proceeds received by issuers of transferable securities are normally financing and undertaking/entrepreneurial activity, on whose outcomes the fair value of the instrument would depend; besides, the entrepreneur's assets (all or part of them) are the guarantee of the underlying liability. However, neither cryptocurrencies refer to any underlying assets, nor do they express or reflect an intrinsic value.

In the spectrum of virtual currencies' tentative legal qualification, it has been suggested[9] that cryptocurrencies could be led back to 'financial products', as per in Art 1, para 1, letter u) of Testo Unico della Finanza, whose definition includes 'financial instruments and any other investment form of financial nature'. In the Italian legal system, the existence of such a legal notion, that is

[8] In stating grounds for its decision, the Court underlined that 'suitable information was provided in order to make investors capable to evaluate whether adhere or not to the investment'; this was mainly based on the following sentence being on the website of the offeror: 'who has betted on bitcoin within two years has earned more than 97%'.

[9] A. Caloni, ' "Bitcoin": profili civilistici e tutela dell'investitore' *Rivista di diritto civile*, 169 (2019). On this topic, see also Tribunale di Verona, 24 January 2017, unpublished. Ruling on a contract between an online platform and a client whose object was an exchange between legal tender and cryptocurrencies (namely, Bitcoin), the Tribunale di Verona has qualified bitcoins as financial instruments and the exchange's activity as a provision of financial services to consumers. Such qualification led to the application of consumer protection regulations (Consumer Code, decreto legislativo 6 September 2005 no 206), which entitles the consumer of a good or service with the right to be informed in a clear and understandable way of the identity of the provider, the main features of the service offered, the risks associated with the characteristics of the product purchased and that do not depend on the professional, as well as remedies provided to the consumer by the law. All information must be provided in written form, the lack of which gives rise to the nullity of the contract with relative legitimation in favor of the consumer. Since the contract was not complying with those provisions, it was declared null and void.

not in the MiFID framework, aims at enlarging – beyond activities relating to financial instruments – the perimeter of 'financial activities', which Italian law reserves for licensed banks and investment firms. At the same time, under Italian law (Art 96-*bis* of Testo Unico della Finanza), the offering of a financial product to the public is subject to the duty to publish a prospectus, as well as to all other obligations set out in the European Parliament and Council Regulation (EU) 2017/1129 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 2003/17/EC. Finally, distance marketing and promotion of financial products are subject to conduct rules for the provision of investment services, set out by MiFID (Art 32 of Testo Unico della Finanza; Art 125-127 of risoluzione Consob 15 February 2018 no 20307, so-called 'Regolamento Intermediari').

Due to the generic nature of this principle, Corte di Cassazione[10] and Consob[11] tried to draw some more accurate criteria that would guide legal operators in assessing if a certain transaction would fall into the category of financial products. Specifically, a financial product requires three elements to be met: a) a capital contribution from one party to another; b) the expectation of a financial performance; c) the taking of a risk which is directly linked to the capital outlay.

In this regard, however, it is submitted that, if one should not rule out that articulated/complex transactions involving the offering cryptocurrencies can be qualified as financial products when all three of the above requirements concur,[12] it should now be taken into account that the newly-adopted decreto of Ministero dell'economia e della finanza (below, para III) tips the 'qualification' scale in favor of cryptocurrencies not being regulated and supervised as financial products, but rather as currencies.[13] This implies that exchanges which would only receive and execute orders relating to the purchase or sale of crypto, as well

[10] Corte di Cassazione 5 February 2013 no 2736, available at *www.dejure.it*.

[11] Consob deliberations on this matter are several; see, particularly, comunicazioni Consob 30 November 1995 no DAL/RM/95010201; 10 July 1997 no DAL97006082; 22 October 1998 no DIS/98082979; 28 January 1999 no DIS/99006197; 12 May 2000 no DIS/36167; 1 June 2001 no DEM/1043775; 4 October 2012 no DIN/12079227; 6 May 2013 no DTC/13038246. All available at *www.consob.it*. In the same terms have expressed the last communications by Consob that had as object such operations in cryptocurrencies and these are deliberation no 19866/2017 and no 20660/2018.

[12] In fact, Consob has stepped in and exercised its supervisory and sanctioning powers when structured products or investment plans involving – but not limited to – cryptocurrencies were being offered (for instance, so-called 'mining packages'), and also when the offeror of cryptocurrencies would also commit to purchase them back over a period of time. In those cases, Consob has qualified the whole product or service as a 'financial product' (other than a financial instrument), and issued orders of temporary suspension of the offer due to the lack of a prospectus (Art 99, para 1, letter *b)* of Testo Unico della Finanza: deliberations 20901/2019 and 20878/2019, available at www.consob.it), or definitively shut the offering down (Art 99, para 1, letter c of Testo Unico della Finanza: deliberations 20845/2019; 20858/2019, available at www.consob.it).

[13] Despite that, *in practice,* they are purchased and traded due to a speculative intent, much more than they are purchased in order for them to be used as means of payment.

as other intermediaries receiving those orders and transmitting them to exchanges, would neither qualify as offerors of financial products, nor as subjects carrying out the activities of distance marketing and promotion of financial products.[14] This being so, one may wonder if activities relating to cryptocurrencies storage and transfer should then be considered, and to what extent, as provision of payment services under PSD2 (European Parliament and Council Directive (EU) 2015/2366 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). This begs the question as to whether or not cryptocurrencies, when conceived as means of payments, fall into the category of 'funds', for purposes of qualifying cryptocurrency-related service providers as providers of payment services under no 2 of Annex I of PSD2 ('execution of payment transactions, including transfers of funds on a payment account with the user's payment service provider or with another payment service provider', wherein 'payment account' means – according to Art 4(12) of PSD2 – 'an account held in the name of one or more payment service users which is used for the execution of payment transactions').[15]

III. Supervision

As anticipated, the bulk of the Italian supervision framework on cryptocurrencies is currently provided by decreto of Ministero dell'economia e delle finanze 13 January 2022. This Regulation inscribes supervision on exchanges and e-wallet (custody) service providers within the existing framework on professional currency-exchangers, whose activity is reserved for registered firms, provided that abusive currency-exchanger activity carries a pecuniary fine. In particular, according to Art 17-*bis*, para 1, of decreto legislativo 13 August 2010 no 141, 'professional currency-exchange activity, consisting of the negotiation of currency means of payments with immediate settlement, is reserved for subjects registered in a specific book held by the Body referred to in Art 128-*undecies* of the Italian Banking Act (ie, the Institution of Financial Agents and Credit Brokers, Organismo degli agenti in attività finanziaria e dei mediatori creditizi: from now on, OAM)'. Registration is subject to requirements set out in para 3 of the same article and triggers the obligation to report all transactions to the OAM which, in turn, is subject to supervision by the Ministry of Finance.

Implementing provisions of Art 17-*bis*, paras 8-*bis* and 8-*ter* of decreto legislativo no 141/2010, decreto of Ministero dell'economia e delle finanze 13

[14] It is indeed controversial whether or not a contract according to which an intermediary would purchase crpytos on behalf of clients but maintain legal ownership over those assets would qualify as a derivative contract having cryptos as its underlying asset (ie, a financial instrument).

[15] It is noted that Recital 10 to European Parliament and Council Directive (EU) 2018/843 rules out that hypotesis.

January 2022 establishes a further section of the above-cited book, dedicated to 'providers of services relating to the utilization of virtual currency' ('every natural or legal person who provides to third parties, on a professional basis, online or not, services functional to use, exchange and store virtual currencies and to their conversion from or in currencies which are legal tender or digital representations of value, including those convertible in other virtual currencies, as well as services relating to issuing, offering, transferring and offsetting and any other service aiming at acquiring, trading and intermediating of exchanges of the same currencies') and 'digital portfolio service providers' ('every natural or legal person provides to third parties, on a professional basis, online or not, services consisting of the safeguard of private cryptographic keys on behalf of its customers, in order to hold, store and transfer virtual currencies').

Registration enables firms to provide services relating to the utilization of virtual currency and digital portfolio services in favor of Italian-based users (whereas provision of those services without being registered constitutes an administrative offense) and is conditional upon particular requirements which also include the location of both the legal and real seat in Italy or, in the sole case of service providers incorporated in the UE, a stable organization in Italy. Registration requests must also carry the information about which services are provided, as well as about how those services are provided (Arts 3 and 4).

Reporting obligations imposed on cryptocurrency-related service providers must be complied with through standards which include (a) identity of clients using services and (b) aggregate data – to be transmitted to OAM on a quarterly basis – relating to the overall activity of each service provider *vis-à-vis* each client (Art 5).

Finally, the decree expressly entrusts the Tax Inspectorate with inquiry and control powers (Art 6).

IV. Private Law Issues

1. Cryptocurrencies as 'Goods' Under Art 810 of the Italian Civil Code

The issue as to whether holders of cryptocurrencies are entitled to real (ie, proprietary) rights or, rather, credit/obligation rights *vis-à-vis* specific subjects (namely, transferor and transferees, custodians and other service providers) naturally raises the question on the nature of cryptocurrencies, under a strict private-law perspective.

The current state of the debate among Italian scholars shows that it is commonly considered that cryptocurrencies would fall into the notion of 'good' under Art 810 of the Italian Civil Code, according to which 'goods are all those things that can be the subject of rights'. In fact, the qualification of cryptocurrencies as goods is the *necessary and sufficient* prerequisite in order

to qualify them as ownership.

The main obstacle to such conclusion would lie in their incorporeal nature. According to traditional doctrines, in fact, the concept of 'thing' would, *per se,* imply the asset's physical existence, save specific exceptions provided for by the law (ie, energy, according to Art 814 of Civil Code), which would form an exhaustive list.[16]

However, a counter argument has put forward,[17] based on the observation that technological and social evolution has made such principle obsolete, provided that it would leave without *erga omnes* enforcement all those immaterial entitlements which – according to the characteristics of its subject – would require such protection.[18]

Such a guiding principle supports the qualification of cryptocurrencies in terms of goods. It goes without saying that the *spending power* which is inherent to cryptocurrencies needs to be protected through enforcement means, characterized by 'exclusivity' and 'absoluteness' (*ius alios excludendi*).

In light of the above, it seems fair to agree that cryptocurrencies are to be qualified as digital ownership – namely, immaterial and fungible goods protected by a proprietary right.[19]

2. Ownership of Cryptocurrencies Stored in a 'Cold Wallet' or in a 'Hot Wallet'

Having regard to the above, the question arises as to who is the actual *legal owner* of cryptocurrencies, when token keys are stored in electronic wallets,[20] as happens in the vast majority of cases.

In this regard, some opinions[21] suggest that a distinction should be drawn

[16] M. Comporti, 'Diritti reali in generale', in A. Cicu et al eds, *Trattato di diritto civile e commerciale* (Milano: Giuffrè, 2011), 125; V. Zeno Zencovich, '*Cosa*', in R. Sacco ed, *Digesto delle discipline privatistiche/Sezione civile* (Torino: UTET giuridica, 1988), IV, 438.

[17] C. Camardi, 'Cose, beni e nuovi beni, tra diritto europeo e diritto interno' *Europa e diritto privato*, 955 (2018); M. Giuliano, 'Le risorse digitali nel paradigma dell'art. 810 cod. civ. ai tempi della blockchain' *Nuova giurisprudenza civile commentata*, II, 1214 (2021).

[18] O.T. Scozzafava, 'Dei beni', in P. Schlesinger ed, *Il codice civile. Commentario* (Milano: Giuffrè, 1999), 28; see also Id, *Goods and legal forms of property* (Milan, 1982), 39.

[19] D. Masi, 'Le criptoattività: proposte di qualificazione giuridica e primi approcci regolatori' *Banca, impresa, società*, 247 (2021); G.M. Nori, 'Bitcoin, tra moneta e investimento' *Banca, impresa, società*, 173 (2021); E. Calzolaio, 'La qualificazione del bitcoin: appunti di comparazione giuridica' *Danno e responsabilità*, 188 (2021); D. Fauceglia, 'La moneta privata, le situazioni giuridiche di appartenenza e i fenomeni contrattuali' *Contratto e impresa*, 1253 (2020).

[20] Indeed, it seems clear that no such doubts can arise when private keys are kept in a physical hardware device or printed on paper.

[21] See the decision by Tribunale di Firenze 21 January 2019 no 18, *Giurisprudenza commerciale*, 1073 (2020), and, among academics, the opinion of V. De Stasio, 'Prestazione di servizi di portafoglio digitale relativi alla valuta virtuale "Nanocoin" e qualificazione del rapporto tra prestatore e utente' *Banca, borsa e titoli di credito*, II, 399 (2021). In the above-cited decision, the Court of Florence has opined on how depositors of cryptocurrencies (in that case, Nanocoin) should be treated within the bankruptcy procedure of a defaulted wallet service provider, which was performing custodian activity

between software-based wallets which are *not connected to the web* (so-called 'cold wallets'), and wallets where private keys are stored in the custodian's servers so that crypto holders, in order to spend their tokens, need to access an account via an internet connection (so-called 'hot wallets').

With reference to the first case, it is argued that cryptocurrency holders maintain ownership over cryptos, insofar as the custodian does not apprehend or control private keys, so that it would be technically impossible for the custodian to spend a token without the owner's consent, which maintains exclusive control over private keys.

The case of 'hot wallets' is more complex. Since in this case, private keys are actually controlled by the custody service provider, owners of cryptocurrencies stored in a 'hot wallet' can only spend their tokens by accessing their wallet through the internet and instructing the custodian to perform a certain transaction. Thus, an agency relationship is in place between crypto-holders and custodians.

In this context, the question arises as to whether or not transmission of private keys to the custodian automatically triggers the transfer of cryptocurrencies' ownership to the depositary, so that the depositor's entitlement would change into a mere restitution credit of the same quantity and quality of cryptocurrencies (*tantundem eiusdem generis*) *vis-à-vis* the depositary; assuming this perspective, such contractual structure would fall into the notion of 'irregular deposit contract' on the basis of Art 1782 of the Civil Code, according to which

> 'when the object of the deposit contract is money or other fungible assets, and the depositary is entitled to freely use them, then the depositary becomes owner of those goods and is obliged to restitute to the depositor the same quantity and quality of those goods'.

It is apparent that this qualification issue is crucial in determining the legal treatment of several aspects, including those relating to regulation of insolvency and seizure/foreclosure of those assets.

In this regard, it is submitted that a further distinction should be made, when assessing whether or not custodians (through a 'hot wallet') become the owners of deposited cryptocurrencies. Indeed, according to the Italian legal system, the mere *traditio* of a fungible thing to the custodian does not itself convey ownership over the asset, provided that such an effect depends exclusively on the fact that the parties have agreed to entitle the depositary with the right to use and dispose of the assets (Art 1782 of the Civil Code). If the

through a 'hot wallet'. Particularly, provided that the custodian was systematically transferring deposited cryptos to its own blockchain address, the Court stated that it had become the owner of all deposited cryptos, so that the depositor would not be able to recover them as owners (through a reivindicatio). Instead, they were to be treated as creditors and subject to *par condicio creditorum*, meaning that the judicial liquidator was required to sell all remaining cryptocurrencies and distribute the proceeds among all creditors pari passu.

existence of such a provision is not *per se* impossible, this should arguably *not be the case* with most common e-wallet contracts. Conversely, if – as it should ordinarily happen – the parties have agreed that the depositor shall not dispose of cryptos if not in execution of the depositor's instructions, no transfer of ownership rights will have occurred and, consequently, the depositor is obliged to *separate (in accounting terms)* those assets from its own assets and from assets received by other depositors. At the same time, it might be argued that if the custodian's activity is limited to storing depositors' private keys without transferring deposited cryptos to its own blockchain address, *as far at the deposit contract is concerned*, cryptocurrencies should be treated as non-fungible assets, provided that it is always possible to trace to which client any act of disposal relates (so-called de-fungibilization, 'defungibilizzazione').

Given this situation, the type of contract that best reflects the parties' underlying interests is the 'regular deposit' contract (Art 1766 of the Civil Code), whereby delivery of private keys to the depositor neither implies the transfer of ownership over cryptocurrencies, which remain the depositor's,[22] nor transfers possession of cryptocurrencies from the owner to the custodian; in fact, when a 'regular deposit' contract is in place, the depositary only has 'custody' or 'detention' ('*detenzione*') of the contract's object, while possession is still the depositor's (so-called 'indirect' possession, meaning that it is exercised *through another subject*, ie, the custodian: Art 1140, para 2, of the Civil Code).

3. Purchase, Acquisition and Transfer of Cryptocurrencies

Before considering how cryptocurrencies are transferred through *inter vivo*s deeds, as well as *mortis causa*, a few words are required about how events occurring on the blockchain would affect proprietary entitlements of holders of private keys.

In this regard, should be stressed that the existence of a ledger, keeping track of transactions relating to tokens, does not imply that cryptocurrencies qualify, under Italian law, as 'movable property entered into public registers' according to Art 815 of the Civil Code (which states that 'movable goods entered into public registers are subject to special provisions established for them or, in

[22] In the case examined by the Tribunale di Firenze 21 January 2019 no 18, it was found that the owner of the platform had full availability of the cryptocurrencies (nanocoin) contained in his wallet, provided that all deposited cryptos were immediately transferred to the wallet service provider's address. Therefore, according to the Court of Florence, the relationship had to be qualified in terms of irregular deposit (Art 1782 of the Civil Code), implying the conveyance of property in favor of the recipient.

On this topic, see also, D. Fauceglia, 'Il deposito e la restituzione delle criptovalute' *Contratti*, 669 (2019). The opinion of A. Caloni 'Deposito di criptoattività presso una piattaforma exchange: disciplina e attività riservate' *Giurisprudenza commerciale*, I, 1073 (2020), according to which, the trading function underlying the relationship would result in the lack of the power of disposal of the platform manager and the qualification of the deposit as regular pursuant to Art 1766 of the Italian Civil Code.

the absence of such provisions, to provisions relating to movable property'). In fact, it would not be possible to claim that distributed ledgers (including permissionless ones) can *ipso facto* – that is, without a domestic or foreign dedicated legal provision – qualify as 'public registers', also considering the absence of a national authority in charge of regulating and overseeing the register.

It follows from this assumption that the loss of the 'spending power' associated with the possession of certain private keys, due to events occurring on the blockchain (for instance, a hard fork which would invalidate the blocks through which a certain token was acquired) needs to be conceived as destruction or loss of movable property (*amissio vel interitus rei*), implying the extinction of the related proprietary entitlement. Conversely, the acquisition of a new 'spending power', as a result of an airdrop of cryptocurrencies or a hard fork that would make what were previously invalid blocks valid, should be considered – from a legal standpoint – as an *ex lege* purchase of a chattel without owner ('*occupazione*' according to Art 923 of Civil Code), which would stem from the mere possession (direct or indirect, ie, through a 'hot wallet') of private keys, enabling a newly-originated 'spending power'.

As to the analysis of *inter vivos* transfer of cryptocurrencies, provided that cryptocurrencies qualify as digital fungible property, it follows that owners of cryptos can dispose of them for consideration[23] (including exchanges from a cryptocurrency to another cryptocurrency) or without consideration (ie, donation, on which see below), according to Italian general rules on contracts,[24] when

[23] It is argued that legal qualification as a sale contract, rather than a barter/trade-in contract, of any contract by which cryptocurrencies are transferred as a consideration for a counterperformance, does not depend on the issue of cryptos qualifying, or not, as actual (foreign) currencies. On the issue of cryptocurrencies being, or not, 'money' from a private-law perspective, see M. Passaretta, 'Virtual currencies in a private law perspective: between payment instruments, alternative forms of investment and improper securities, in S. Cerrato, R. Morone and P. Dal Checco eds, *Cryptoactivity, currencies and bitcoin* (Milan: Giuffrè, 2021), 101; see also N. Vardi, ' "Criptovalute" e dintorni: alcune considerazioni sulla natura giuridica dei Bitcoin' *Diritto dell'informazione e dell'informatica*, 445 (2015); G.L. Greco, 'Monete complementari e valute virtuali', in M.T. Paracampo ed, *Fintech* (Torino: Giappichelli, 2017), 210; R. Bocchini, 'The development of virtual currency: first attempts at framing and discipline between economic and legal perspectives' *Diritto dell'informazione e dell'informatica*, 27 (2017); G. Lemme and S. Peluso, 'Cryptocurrency and detachment from legal money: the bitcoin case' *Rivista di diritto bancario*, I, 407 (2016); V. De Stasio, 'Verso un concetto europeo di moneta legale: valute virtuali, monete complementari e regole di adempimento' *Banca, borsa e titoli di credito,* I, 747 (2018); M. Krogh, 'Transazioni in valute virtuali e rischi riciclaggio. Ruolo e responsabilità del Notaio' *Notaries*, 157 (2018); M. Cian, 'La criptovaluta – Alle radici dell'idea giuridica di denaro attraverso la tecnologia spunti preliminari' *Banca, borsa e titoli di credito,* I, 315 (2019). In fact, when parties agree that an asset (namely, cryptocurrencies) would be accepted as a means of payment (so-called conventional money), this is sufficient to treat that contract as a sale rather than a barter. Of course, this would not imply that those assets would qualify as legal tender (either domestic or foreign). On this topic, see M. Semeraro, 'Moneta legale, moneta virtuale e rilevanza dei conflitti' *Rivista di diritto bancario*, II, 137 (2019).

[24] Including contracts relating to the subscription of corporation shares. In this respect, see Corte d'Appello di Brescia, 30 October 2018, which dealt with the issue of whether or not cryptocurrencies

Italian *lex contractus* applies according to European Parliament and Council Regulation (EC) 593/2008 of 17 June 2008 on the law applicable to contractual obligations, the so-called Rome I Regulation (which is also applicable to donations, except so far as aspects relating to family and succession law are concerned, when legge 31 May 1995 no 218 applies: see below). According to Art 1378 of the Civil Code, property over generic/fungible assets is transferred from one party to another when those assets are made 'specific' (so-called '*individuazione*'), typically by way of their delivery to the recipient.[25] Such provision is applicable to all kind of contracts involving the conveyance of property over generic goods, including donations.

With reference to cryptocurrencies, delivery consists of the purchaser being put in control of the 'spending power' associated with a certain token. This can occur via both with respect to an *on-chain* and an *off-chain* transfer. The former case implies a valid transaction taking place on the chain, through which one or more tokens are sent from the seller's address (ie, a hash identifying the public key associated with the seller's private keys) to the purchaser's address. In the latter case, actual possession over *private keys* is handed over to the purchaser, while nothing happens *on-chain* and tokens remain registered under the same *public keys*. Such a handover can occur in several forms, according to how private keys are stored. In a case in which private keys are kept in a hardware device or printed on paper, physical delivery is required (and sufficient), whereas in a case in which tokens are stored in a software-based wallet, a distinction has to be drawn between software-based 'cold wallets' and 'hot wallets'; in the case of a software-based 'cold wallet', it is required that private keys be extracted from the wallet and delivered to the recepient, or that off-line wallets' credentials are delivered to the recipient; in the case of 'hot wallets', delivery is executed when the seller's custodian transfers private keys to the recipient's custodian (when this is the same as the seller's, it is sufficient that the seller's account is charged and the recipient's account is credited).

From an Italian international private law perspective, it should be made clear that Italian courts will apply Art 1378 of the Italian Civil Code, insofar as the relevant movable property is located in Italy (*lex rei sitae*). In fact, according to Art 51 of the Italian private international law (legge no 218/1995), rules regarding the actual transfer of ownership (*modus adquirendi*) are not governed

(in that case, OneCoin) are apt to form the object of contribution for purposes of increasing the legal capital of a limited liability company. The Court denied that, based on the assumption that OneCoin does not have a liquid secondary market enabling the formation of that crypto's market valuesee: see M. Natale, 'Dal "cripto-conferimento" al "cripto-capitale" ' Banca, borsa e titoli di credito, II, 741 (2019); C. Flaim, 'Nuove frontiere del conferimento in società a responsabilità limitata: il caso delle criptovalute' Giurisprudenza commerciale, II, 900 (2020).; R. Battaglini, 'Conferimento di criptovalute in sede di aumento del capitale sociale' Giurisprudenza commerciale, II, 913 (2020).

[25] This is also the moment at which the risk of accidental loss shifts to the recipient (*res perit domino*).

by the *lex contractus*, which only governs the contract as a precondition of the property conveyance (*titulus adquirendi*). Besides, Art 52 states that 'as far as goods in transit are involved, the applicable law is the place of destination'.

One might then wonder as to when a cryptocurrency token can be deemed to be located in Italy. On this point, it is argued that the criterion of *rex lei sitae* fits the case of physical property better than 'virtual' property. However, it is submitted that the case of cryptocurrency needs to be approached commencing with the assumption that tokens cannot be 'enjoyed', as a thing, but just disposed of; therefore, tokens are nothing more than a 'spending power'. Consequently, tokens should be deemed to be located where private keys associated with a certain token (that is, private keys enabling the token's 'spending power') are stored. Of course, in case of an on-chain transfer, the relevant private keys are the recipient ones.

Based on the principle of freedom of contract, there is no reason to rule out that cryptocurrencies can be donated. According to Art 782 of the Civil Code, the solemn form of the notarial public deed is prescribed, including the presence of two witnesses at the moment at which the deed is signed before the notary (Art 48 of the notarial law, regio decreto 16 February 1913 no 89), under penalty of nullity of the deed.

If the donation concerns movable things, in addition to the formal requirements cited above, the deed of donation (or a separate note signed by the donor, the recipient and the notary) must specifically include details of the things donated, and their value (Art 782, para 1, of the Civil Code). However, if the donated property is of 'modest value', the form of the public deed is not required *ad substantiam actus* (ie, under penalty of nullity), so long as there is actual delivery of the donation's object (Art 783 of the Civil Code).

As regards applicable law, the Rome I Regulation and Italian private international law must be applied in a coordinated manner. In fact, the deed's existence and validity, as well as the content of obligations arising from donations, fall within the scope of application of Rome I, with the exception of obligations arising from family and succession law (Art 1, para 2, letter b and letter c, European Parliament and Council Regulation (EC) 593/2008). When this is the case, Art 56 of legge no 218/1995) applies, establishing that donations are governed by the national law of the donor at the time of the donation. However, the donor can opt-in (through a declaration called *professio iuris*) for the law of the State of his/her residence at the time of the donation to be applicable. Eventually, the third paragraph of Art 56 specifically deals with formal validity, establishing that the donation is valid in this respect when it complies with the relevant provisions of *either* the law applicable to the donation *or* the law of the State in which the deed of donation is made.

Having regard to inheritance law issues, it should first be noted that the Italian system is based on the principle of the general transferability *successionis*

causa of all assets, rights and relationships which belonged to the deceased person (*de cuius*). This is stated in law in order to ensure the continuity of relationships with creditors and counterparties.

Over the last few years, Italian scholars focused on the *mortis causa* succession of so-called digital assets, that is, the heterogeneous set of assets having computer-based origin, including accounts and files, which can be contained both in off-line devices and in online storage systems.[26] Cryptocurrencies certainly fall into this category.

With reference to *mortis causa* transfer of digital assets, the question arises regarding testators as to what meaning should be attributed to testamentary provisions assigning certain credentials (in case of cryptocurrencies, private keys associated to public keys which enable cryptocurrencies to be spent) to specific persons.

In this regard, learned Italian academics[27] make it clear that a difference exists between situations in which the testator aims to assign to the beneficiary the ownership of the digital asset which credentials protect (in such a case, the assignment of passwords means the assignment of the digital asset) and those in which the assignment of a password to someone is instrumental in the execution of a certain task in favour of another subject, for whose performance the assignee is appointed (in such case, a *post mortem exequendum* mandate occurs).

If the deceased person has not disposed of his/her estate through the act of making a valid will (succession *ab intestato*), so-called legitimate succession (successione legittima) will take place (Art 457 of the Civil Code), meaning that the entire inheritance will be devolved to legitimate heirs (member of the deceased subject's family, according to specific law provisions based on a proximity criterion: see Arts 565 ff of the Civil Code). Legitimate succession concerns the entire assets of the deceased (so-called *universum ius defuncti*), therefore including any cryptocurrencies possibly owned by the *de cuius*. In this

[26] C. Camardi, 'L'eredità digitale. Tra reale e virtuale' *Diritto dell'informazione e dell'informatica*, I, 65 (2018); M. Palazzo, 'La successione nei rapporti digitali' *Vita notarile*, 1309 (2019); M. Cinque, 'L'eredità digitale alla prova delle riforme' *Rivista di diritto civile*, 72 (2020); S. Delle Monache, '*Successione* mortis causa *e patrimonio digitale*' *Nuova giurisprudenza civile commentata*, II, 460 (2020).

[27] U. Bechini, 'Password, credenziali e successione mortis causa' *Studio CNN* n. 6-2007/IG, available at https://tinyurl.com/v7erejcm (last visited 30 June 2022); V.D. Greco, 'Il diritto alla trasmissione dei dati digitali post mortem: il problema della disposizione mortis causa delle credenziali di accesso a risorse digitali', in M. Bianca, A. Gambino and R. Messinetti eds, *Libertà di manifestazione del pensiero e diritti fondamentali* (Milano: Giuffrè, 2016), 195; F. Mastroberardino, *Il patrimonio digitale* (Napoli: Edizioni Scientifiche Italiane, 2019), 204; M. Palazzo, 'La successione nei rapporti digitali' *Vita notarile*, 1321, 1329 (2019); A. D'Arminio Monforte, *La successione nel patrimonio digitale* (Pisa: Pacini giuridica, 2019), 135; A. Magnani, *Il trasferimento* mortis causa *del patrimonio digitale*, *Atti e* quaestiones *notarili nell'era contemporanea e digitale* (Bari: Cacucci editore, 2020) 100; V. Putortì, 'Patrimonio digitale e successione mortis causa' *Giustizia civile,* 173 (2021); L. Di Lorenzo, 'L'eredità digitale' *Notariato*, 146 (2021).

case, heirs will become joint owners of all assets of the estate.

Finally, it should be stressed that the answer to the issue of *mortis causa* transferability of cryptocurrencies does not change depending on how private keys are stored. However, when they are stored in 'hot wallets', it is also necessary to deal with the succession in the contractual relationship between the *de cuius* and the intermediary. In principle, according to the aforementioned standard of general transmissibility of relations upon death, the contractual relationship with the intermediary should also be included in the estate.

As regards the relevant private international law issues, European Parliament and Council Regulation (EU) 650/2012 of 4 July 2012 on jurisdiction, applicable law, recognition and enforcement of decisions and acceptance and enforcement of authentic instruments in matters of succession and on creation of European Certificate of Succession, states that the succession will be subject to Italian law if the deceased subject had his habitual residence in the territory of the Italian Republic at the time of his death (Art 21) or if the testator, despite having his habitual residence in another State, possesses Italian citizenship, and opt-in the application of Italian law through a declaration (*professio iuris*) contained in the act of will.

4. Insolvency-Related Matters

Assuming, based on the arguments set out above, that cryptocurrencies can form the object of ownership (qualifying as 'goods' under Art to 810 of the Civil Code), it follows that creditors are able to seize their debtors' cryptocurrencies in cases of non-performance of an obligation (according to Art 2740, para 1, of the Civil Code, 'the debtor is liable towards its creditors with all its present and future property'). Procedural aspects of the foreclosure procedure change slightly, according to whether private keys can be recovered directly from the debtor, in which case rules on garnishment of movable goods apply ('pignoramento mobiliare', Arts 513 ff of the Code of Civil Procedure), or their recovery requires some form of cooperation from a third party currently keeping the debtor's property, in which case rules on third-party garnishment apply ('*pignoramento presso terzi*', Arts 543 ff of the Code of Civil Procedure).

Limited to situations in which the debtor is an entrepreneur, their insolvency can trigger bankruptcy, as a procedurally consolidated foreclosure of all the debtor assets, in order to satisfy creditors who have lodged their claims. Bankruptcy procedures are regulated by decreto legislativo 12 January 2019 no 14.

When private keys are digitally stored with a third party through a 'hot wallet', the question arises as to how token-holders' claims may be treated, should the custodian go bankrupt. The answer to this question very much depends on the issue, as discussed above, as to whether or not depositing cryptocurrencies in a e-wallet implies conveyance of the deposited assets' property in favor of the custodian.

As has already been argued, it is submitted that, according to Italian law (see Art 1782 of the Civil Code), delivery of fungible movables to a custodian does not, *per se,* make the recipient the owner of those assets, to the extent that the recipient is contractually bound not to dispose of cryptos if not in the execution of the depositor's instructions. Further, it may be useful to repeat (see above) that if the custodian's activity is limited to storing depositors' private keys without transferring deposited cryptos to its own blockchain address, it is argued that, *as far as the deposit contract is concerned*, cryptocurrencies should be treated as non-fungible assets, provided that it is always possible to trace to which client any act of disposal relates.

From the position of the custodian's insolvency procedure, this means that depositors will maintain a proprietary entitlement over deposited assets, which remain separated from the bankrupt's assets and cannot be seized by the custodian's general creditors, *insofar as they can be traced*. Thus, the procedure's receiver/liquidator is not entitled to liquidate those assets in order to satisfy creditors, but must restitute those assets to depositors, provided that they have lodged their proprietary claim (*rei vindicatio*) according to Art 210 of the Insolvency Code (decreto legislativo no 14/2019).

5. Liens on Cryptocurrencies (Including Trust)

According to Art 2786 of the Civil Code, a pledge is a security entitlement, originating from an agreement between the creditor and the pledged property's owner, which is effective only on condition that the owner of the pledged property is dispossessed of it. Furthermore, the law also requires a written deed with a 'certain date' under Art 2704 of the civil code, in which the pledged subject, the claim protected by the lien and its amount are specified (Art 2787, no 3 of the Civil Code).

With respect to cryptocurrencies, dispossession implies delivery of private keys to the creditor or to a custodian jointly appointed by the parties, so that the owner of the lien's subject cannot dispose of the pledged property without the consent of the creditor or the third-party custodian.

Having regard to the creation of trusts over cryptocurrencies, it should be noted that the Italian legal system does not have a legal tool featuring the same characters as a common-law trust. However, in its legal framework, Italy subscribed to and implemented the Hague Convention on the Law Applicable to Trusts and on their Recognition, of 1 July 1985 (legge 16 October 1989 no 364).

Based on this instrument, foreign trusts' effects must be recognized by Italian courts. Of course, the actual effects of a foreign-law trust will depend on the applicable law.

Traditionally, a debate had been conducted, among Italian legal academics and courts, about the recognizability of a trust in which all connecting factors

would point to Italy, and whose only international element would be the choice of a regulating foreign law (so-called 'domestic trust'). Caselaw has settled ruling in favor of it,[28] while this hypothesis is a matter around which academics remain skeptical.[29]

6. Loan of Cryptocurrencies

Pursuant to Art 1813 of the Italian Civil Code, the loan is the contract by which one party (lender) delivers to another (borrower) a certain amount of money or other fungible things and the other commits to return, at a particular future date (in one or more instalments, as the case may be), as many things of the same kind and quality (*tantuntem eiusdem generis*). Thereafter, in consequence of delivery, ownership of the borrowed things passes into the property of the borrower (Art 1813 of the Civil Code). Normally, the loan is an onerous contract; the lender's attribution is compensated by accruing interest, whose rate must necessarily be agreed in writing, otherwise the legal rate applies (Arts 1815, para 1, and 1284, para 3, of the Civil Code). As a general rule, accrued interest are paid in Euros, as legal tender (Art 1277 of the Civil Code), but parties can agree that the debtor can either perform its obligation in legal tender or with other goods. In this case, a so-called 'alternative obligation' would arise (Art 1285 of the Civil Code).

Having already pointed out that cryptocurrencies qualify as fungible movables, it is argued that a loan agreement might also have them as its object. Based on the principle of private autonomy (Art 1322, para 1, of the Civil Code), any private individual can lend or borrow cryptocurrencies. One might wonder what would happen, should a hard fork occur on the blockchain. In this case, in fact, two different types of cryptocurrencies might co-exist with reference to the same blockchain (the one based on the 'amended' version of the protocol, which would not recognize as valid any transaction based on the original version of the protocol, and the others based on the original version of the protocol, which would not recognize as valid any transaction based on the new version of the protocol). In this regard, it is submitted that the fungible nature of those assets requires an inquiry to be carried out as to whether or not there is fungibility between them (ie, whether or not it might be argued that they belong to the same *genus*, and differ only in terms of their respective quality; in this regard, Art 1178 of the Civil Code states that 'when the obligation's object is a fungible asset, the debtor has to provide things whose quality is not below average'). Moreover, it should also be ascertained as to whether or not the ante-fork cryptocurrencies still exist and are exchangeable on the market. Should it not be the case, then an alternative scenario arises. Either post-fork cryptocurrencies

[28] See, among others, Corte di Cassazione 9 May 2014 no 10105, *Banca, borsa e titoli di credito*, II, 251 (2016)

[29] P. Spolaore, *Garanzia patrimoniale e trust nella crisi d'impresa* (Milano: Giuffrè, 2018).

are deemed to belong to the same *genus* as the pre-fork cryptocurrencies, so that the debtor can perform its obligation delivering them, or they are not, in which case Art 1818 of the Civil Code would apply, according to which, if restitution of the borrowed assets becomes impossible or grossly burdensome due to a supervening cause that is not attributable to the borrower, then the debtor has to perform its obligation in domestic legal tender, based on its market value at the moment when the obligation is due. It should be stressed that this provision would only apply in a case of supervening impossibility, by which the original impossibility would make the contract invalid.

With reference to the lending party, it should be noted that entering in such contracts must not give rise to an economic activity carried out on a professional basis. In fact, moving from the assumption that, *from a regulatory and supervisory perspective*, cryptocurrencies are treated by the Italian legal system as foreign currencies (see above, paras II and III); it might be argued that the undertaking of granting cryptocurrency loans constitutes a financing activity. Consequently, such activity is subject to licensing (in Italy or in any other EU Member States), according to Arts 14 and 106 of decreto legislativo 1 September 1993 no 385, the consolidated act on banking regulations. Furthermore, authorization is required if the lender has a non-EU banking license.

Accordingly, *de facto* exercise of a professional activity of granting cryptocurrency loans gives rise to the phenomenon of 'abusive banking', which triggers both private law and criminal law consequences. With reference to the former, caselaw has consistently ruled that each single loan agreement entered into by an unauthorized credit undertaking is null and void. In some cases, general rules on nullity (Arts 1418 ff of the Civil Code) were applied. In other cases – and, it is argued, more correctly – it was ruled that so-called 'protective nullity' (Art 127, para 2, of the decreto legislativo no 385/1993) would apply, meaning that only the borrower is granted the legal standing to promote the nullity claim, and *ex officio* declaration by the judge is only possible insofar as the borrower has an actual benefit from the nullity been declared.[30] With reference to the latter, Art 132 of the consolidated act on banking regulations, decreto legislativo no 385/1993, prescribes the punishment of imprisonment for between six months to four years, as well as a fine of between € 2,065 and € 10,329.

7. Liability Due to Loss of Cryptocurrencies

As regards the consequences of the loss (eg, through hacking or fraud) of cryptocurrencies, this issue seems especially relevant where private keys are stored in a 'hot wallet'.[31]

[30] In the first sense, Corte di Cassazione 28 February 2018 no 4760, available at www.dejure.it; in the second, Corte di Cassazione 23 September 2019 no 23611, *Banca, borsa e titoli di credito*, II, 123 (2021).

[31] And perhaps also in a software-based cold wallet enabling crypto-holders to recover wallet's

Generally speaking, a custodian's liability under a deposit contract is set out by Arts 1218 and 1768 of the Civil Code, according to which the custodian is liable for loss of deposited assets if it did not diligently perform its custody activity. Provided that the custodian carries out its activity on a professional basis, the assessment as to whether or not it complied with the due standard of diligence must be based on 'the nature of the undertaking' (Art 1176, para 2, of the Civil Code, so-called professional diligence).

However, Italian caselaw has often ruled that when custody refers to money or securities received by clients, which can be disposed of through the internet (namely, in the case of an online bank account), then a stricter standard of liability would apply, by reason of the inherently hazardous nature of such activity. From a positive standpoint, this would call for an application, by analogy, of Art 2050 of the Civil Code (referring to tort liability), according to which

> 'whoever causes a damage to other when carrying out a hazardous activity, due to its nature or to the nature of the means it is carried out with, is liable unless it shows proof that it adopted all appropriate measures to avert the damage'.[32]

Moreover, to be taken into account is that the hacking of a 'hot wallet' by a fraudulent third party also implies an occurrence of a data breach; from this standpoint, it is noted that failure of the data controller (in this case, the wallet service provider) to ensure integrity and confidentiality of data makes it liable for consequential damage, other than 'if it proves that it is not in any way responsible for the event giving rise to the damage' (Art 82, para 3, of the European Parliament and Council Regulation (EU) 2016/679 on the protection of natural persons with the regard to the processing of personal data and on the free movement of such data, and repealing Directive 95/46/EC, also known as GDPR).

Of course, should the hacker be identified, the owner of stolen cryptocurrencies would be able recover its property, provided that this can be traced to the hacker hands (which would generally be possible also if stolen property has already been mixed with other goods belonging to the same *genus*: Art 939 of the Civil Code). With reference to third parties purchasing stolen cryptos from the hacker, their purchase is protected by the law according to Art 1153 of the Civil Code, that is if: (*i*) it is a *bona fide* purchaser of a movable good; (*ii*) the sale's object has been delivered to it; (*iii*) the sale contract is valid if not for its object not being the seller's.

Eventually, one may want to consider the hypothesis of the holder of the

credentials.

[32] Other authors believed that, under Italian law, a strict liability regime applies whenever breach of contract stems from the materialization of a risk which normally connected to the nature of the business activity exercised by the debtor. References in U. Malvagna, *Clausola di 'riaddebito' e servizi di pagamento. Una ricerca sul rischio d'impresa* (Milano: Giuffrè, 2018).

cryptocurrencies making the transfer in favor of a counterparty, as a consequence of being misled by the recipient. Apparently, provisions on contract annulment for fraud and deceit are going to be applied. In order for annulment of the contract to be granted by a court, it is necessary to show proof that deceptions perpetrated by the counterparty were such that, without them, the deceived subject would not have entered into that contract (Art 1439 of the Civil Code). Annulment implies that all that was given in performing the contract can be recovered from the recipient through a restitution claim (*condictio indebiti*). Conversely, if the deceptions were not so serious for it to be essential to have the deceived subject's consent, the contract remains valid, but the deceiver must pay compensatory damages (Art 1440 of the Civil Code).

V. Conclusions

In conclusion, the analysis carried out above shows the actual peculiarity of cryptocurrencies to be the impossibility of referring that asset class to traditional concepts and categories underpinning financial regulation.

At the same time, cryptocurrencies constitute the paradigm of '*tokens*', as a form of fully-digitally originated goods, whose underlying technologies (blockchain-DLT) enable the enforceability *erga omnes* of the digital asset's inherent entitlements.

One final remark should be made with reference to the issue of decentralization. As is known, the main promise of blockchain is to enable platforms, where assets can be originated and traded on a 'peer-to-peer' basis (meaning without any intermediation of institutional actors such as commercial banks, central security depositories, central banks). However, earlier analysis was able to highlight that multiple forms of intermediaries are present in this field, especially with reference to wallet-related and exchange-related services. This being so, it is submitted that we are experiencing an era of *new and more complex intermediation*, rather than of disintermediation. So, the question arises as to whether or not those new service providers can guarantee customers an adequate level of protection, and of how regulation would foster widespread trust in these new digital markets.