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ISSUES ON FINANCIAL MARKET REGULATION, BUSINESS DEVELOPMENT AND GOVERNMENT'S POLICIES ON GLOBALIZATION

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CONTENTS

TECHNOLOGICAL INNOVATION AND DIGITAL EURO. THE DILEMMA OF APPLICABLE REGULATION *

Francesco Capriglione **

ABSTRACT: *This paper analyzes some aspects of the legal issues related to the digitization of the euro in order to identify whether in subiecta materia the application of European or national regulation prevails.*

In particular, the investigation focuses on assessing the limits of this project and its consequences on different national contexts, with particular attention to the Italian context. With reference to the jurisprudential orientation of the Italian and German constitutional courts, an initial conclusion is then reached regarding the appropriateness of basing the implementation of this project on a politico-legal link between European and national authorities.

1. Technological innovation, established especially in the last decade, affects the structure of the market and, in particular, the competitive dynamics among operators engaged in the transition from analog to digital. The scenario that has long been at the attention of jurists interested in the analysis of the impact of cybernetics on the performance of negotiation relationships, whose

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* The present work is intended for a collection of studies edited by Prof. Paolo Savona.

** Editor in Chief

horizon opens up to the fruition of innovative models of knowledge[1].

Among the subjects studied by the research are relevant the modalities of the so-called decentralized finance to which it is necessary to have regard in the analysis of virtual currency concerning the innovative forms of contact between the users of the same and the procedural techniques that allow its explication. An operating context characterized by opacity and uncertainty due to the lack of transparency and reduced reliability of an activity carried out outside the scope of regulation is identified, so that insolvency situations become foreseeable, destined to expand to the entire sector where forms of contagion are not prevented.

The presence of stabilization mechanisms based on automatic rules that adjust supply to changes in demand (*algorithmic stablecoins*) - to which the Bank of Italy refers[2] - while enhancing the efficiency of how such assets are offered, through the distributed ledger technologies (DLT), do not remove users from the risk to which their involvement exposes them in such operating context. More specifically, hypothetical critical issues are found from the use of *blockchain* technology, which is known to lack a centralized data base and administrator[3] as well as by the management (carried out by the platforms) of economic transactions that are structured into interconnected 'blocks'; automated mechanism that is divided into specific processes, the function of which is considered to replace that of credit intermediaries[4].

It is clear, however, how the examination of the phenomenology in question needs, first of all, to clarify the comparison with legal money or with the innovative IT schemes in which the "digital euro" (currently subject to the

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[1] See ALPA*, L'intelligenza artificiale. Il contesto giuridico*, Modena, 2021, 115 ss; ID., *Fintech: un laboratorio per i giuristi*, Introduction to on AA.VV., *Fintech: diritti concorrenza, regole*, Bologna, 2019, p. XIII ss.

[2] See *Considerazioni finali*, 2022, p. 19.

[3] See MASERA, *Nuovi rischi e regolazione delle cryptovalute*, on *Bancaria*, 2022, n. 3, p. 5 ss.

[4] See PASTUCCI, *La natura giuridica dei bitcoin*, on *Rivista della Corte dei Conti*, 2018, p. 357 ss.

attention of the ECB intent on creating such electronic money) may find compendium. Such analysis allows, in fact, to identify the distinctive features that characterize the latter with respect to the structural elements of decentralized finance, which finds expression in an *agere* that, due to its peculiarities, seems to compete with the activity of licensed intermediaries.

Therefore, is opened to the interpreter a scope of research where the undeniable legal legitimacy, behind the possibility of issuing the aforementioned digital currency, is challenged by perplexities of a systematic order with regard the banking activity, on which the affirmation of such a monetary instrument may have considerable effects.

2. Reflection on the this matter should consider that cryptocurrencies are not considered as legal tender, since their relative purchasing power at its issuance is nonexistent, not having behind it an economic relationship of debt and credit, as in any other transaction that takes place in the market, including the creation of legal tender in which a public issuing institution is a debtor. In the latter, such debt and credit relationship result only upon the occurrence of the expectation that someone will spontaneously accept the virtual instrument created and then resell it to others at the proper time[5].

In this framework, a significant part of the doctrine, evaluating the structure and technical functionality of bitcoins - even though these bitcoins present profiles of similarity with scriptural and/or electronic money - has found it impossible to qualify them as "currency" (since they are not legal tender), nor as "money" (since they are not able to fully fulfill the functions required by economic theory[6]). Conversely, the doctrinal orientation, highlighting the social function of the currency, ascribes primary importance to the will of the parties, capable to decide the transactions modalities and, therefore, to consider bitcoin as

[5] See CAPRIGLIONE, *Le cripto attività tra innovazione tecnologica ed esigenze regolamentari*, on *Riv. trim. dir. econ.*, 2022, I, p. 225 ss.
[6] See CIACCI, *Pagamenti elettronici e moneta elettronica. La tutela dei consumatori in internet e nel commercio elettronico*, Tomo II, Milano, 2012, p. 539

"currency, albeit not legal tender"[7].

The observations in Consob's report for the year 2021 on the computer-based creation of private "fiduciary money" highlight the problematic nature of the matter examined, underlining the risk relating to the redistributive function as per the democracy, and to the productive-commutative function, as per the market[8]. Indeed, the latter functions are, in fact, disrupted by the establishment of digitized purchasing power, especially when placed in decentralized accounts. Therefore, the aforementioned authority draw the attention to the analysis of the virtual currencies' implications on social balances; attention that has received scant consideration as issues such the digital divide, privacy and the right to free private initiative have not been properly considered[9].

In light of the above considerations, it is possible to exclude the qualification of cryptocurrencies as money. Such analysis is confirmed – in line with the earliest indications of economic science (and I refer, *inter alia*, to the work of Abbot Galliani in the mid-18th century[10]) – by the function of money as a measure and store of value, as well as a means of payment, hence its role as an essential tool for the social life[11].

This explains why legal and economic doctrine has felt the need to relate

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[7] See PASTUCCI, *La natura giuridica del bitcoin*, cit., p. 360

[8] See *Relazione*, 2021, p. 18

[9] Although studies have been undertaken since the beginning of this millennium to highlight the significant gap that exists between those who have access to information technologies (see among others BENTIVEGNA, *Digital Inequalities; The New Forms of Exclusion in the Information Society*, Bari, 2009) we are still far from the realization of a 'digital literacy' that would make possible an effective ability to use information media (see BANZATO, *Digital literacy. Culture and education for a knowledge society*, Milan, 2011).

[10] See the well-known study entitled *Della Moneta*, Naples, 1780, in which a 'theory of value' is proposed by identifying the principles underlying monetary regulation.

[11] The theoretical analysis offers a varied picture of functions fulfilled by money: from the intermediation between the centers of savings formation and those of resource employment to the transformation of risks and maturities, quality control of investment projects, and the management of payments. See for the economics literature the classic works of KEYNES, *A Treatise on Money*, London 1930; ARCELLI, *The direct control of financial intermediaries: a scientific controversy in the process of being overcome*, on *The Economists' Journal*, Sept.-Oct. 1969; SAVONA, *La sovranità monetaria*, Rome, 1974; JEVONS, *money and the mechanism of exchange*, London 1978; for the legal literature see ASCARELLI, *La moneta*, Padua, 1928;; STAMMATI, *Moneta*, on *Enc. Dir*., vol. XXVI, Milan, 1976; CAPRIGLIONE, *Moneta*, on *Enc. dir*., Milan, 1999, p. 747 ff.

the interpretation of this phenomenal reality to the historical institutional context to which the issuance and governance of money belongs.

Moreover, the clarification, contained in the legislation of some States, aimed at providing - as per Article 1277 of the Italian Civil Code - that "pecuniary debts are extinguished with currency that is legal tender in the State at the time of payment and for its nominal value", a rule that establishes the principle according to which behind an economic relationship of debt and credit, as foundation of any other similar transaction that takes place on the market, there must be a public issuing institution[12]. It follows that only legal money is capable of fulfilling an unlimited solvency function in payments, which also reflected in the clarification provided by the Italian Regulator as per Article 2004 of the Italian Civil Code, which sets limits on the 'freedom of issuance' of credit instruments containing "the obligation to pay a sum of money", a provision interpreted by traditional doctrine as aimed at the control (by the State) of money and payment instruments[13].

From another point of view, in the use of cryptocurrency, there is a complete subversion of the above-mentioned criteria as the purchasing power of the same at the moment of its issuance is non-existent, whereas the debt-credit relationship is achieved only in the presence of a positive circuit between spontaneous acceptance of the virtual instrument and its subsequent transfer to

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[12] Hence the consequence, emphasized by the doctrine, that virtual currencies cannot "be configured as a means of extinguishing pecuniary debts within the meaning of Article 1277 of the Civil Code," see CAPOGNA, PERAINO, PERUGI and others, *Bitcoin: legal and comparative profiles. Analysis and future developments of an evolving phenomenon*, in *Law Market Technology*, 2015, p. 49.

[13] See, among others, ASQUINI, *Titoli di credito*, Padua, 1966, p. 112; PELLIZZI, *Principî di diritto cartolare*, Bologna, 1967, p. 67; MARTORANO, *Lineamenti generali dei titoli di credito e titoli cambiari*, Naples, 1979, p. 69 ff; SPADA, *Introduzione al diritto dei titoli di credito*, Turin, 1994, pp. 86 ff, 93 ff.; OPPO, *Titoli di credito I) In generale*, on *Enc. giur. Treccani*, XXXI, Roma, 1994, p. 13; PARTESOTTI, *Lezioni sui titoli di credito*, Bologna, 1997, p. 23 ff.

It is worth mentioning that in Italy, since the last decades of the last century in the literature the close connection between the rule of Art. 2004 Civil Code and the provision of Art.141 of T.U. No. 204 of 1910 on Institutions of Emission, recognizing in this connection the attestation of the state privilege of the issuance of currency; see CAPRIGLIONE, *L'emissione di buoni di acquisto e l'art. 141 del T.U. del 1910 sugli Istituti di emis¬sione*, on *Impresa, ambiente e pubblica amministrazione*, 1975; ID, *I surrogati della moneta nella vigente normativa del T.U. 28 aprile 1910, n. 204, sugli Istituti di emissione*, on *Banca e borsa*, 1975 others.

These considerations are reflected in Mario Draghi's position on the issue of the nature of bitcoin, which this leading figure of the financial world does not consider a currency for two reasons. The first is related to the fact that «the value of bitcoin fluctuates widely», whereas «a euro today is a euro tomorrow and its value is stable»; the second is related to the consideration that «the Euro is backed by the European Central Bank, the Dollar by the Federal Reserve, currencies are backed by their governments' central banks. Nobody does that with Bitcoin»[14].

Thus, the definition of 'virtual currencies' given by the European regulator – as per EU Directive No. 2015/849 (4th AML Directive), Art. 3(18) (as updated by EU Directive No. 2018/843 (Fifth Anti-Money Laundering Directive) – is keen to clarify that they are «a representation of digital value that is not issued or guaranteed by a central bank or public entity, is not necessarily related to a legally established currency, does not possess the legal status of currency or money, but is accepted by natural and legal persons as a means of exchange and can be transferred, stored and exchanged electronically».

That said, it cannot not be ignored that the issue of cryptocurrencies should be distinguished not only from the digital euro, if it is realized in the Union, but also from the new electronic payment instruments towards which some central banks seem to be oriented - including the Riksbank of Sweden (with the *e-krona*) and the Central Bank of the Bahamas (with the *sand dollar*) – which are experimenting with or researching on digital currencies or CBDCs (Central Bank Digital Currency)[15].

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[14] See in the same vein the editorial *Draghi: bitcoin is not currency*, viewable on *Iusletter* of February 14, 2018, in which the ECB President's clarification at the time that virtual currencies "are not money, nor will they be in the foreseeable future" is quoted.

[15] See ECB, *Speech* of PANETTA, *Building on our strengths: the role of the public and private sectors in the digital euro ecosystem*, 29/9/2022, viewable at *https://www.ecb.europa.eu/press/key/date/2022/html/ecb.sp220929~91a3775a2a.en.html*; ID., *L'euro digitale: la nostra moneta ovunque e per ogni necessità*, 23/1/2023.

3. In the light of the above, it can be explained why cryptocurrencies are at the center of a number of ECB studies aimed at assessing the proper functioning of the market; studies in which the analysis of the virtual currencies' core is aimed at assessing the opportunity for central banks to use the technology behind them[16]. Likewise, the positive reference to them recently made by the deputy director general of the Bank of Italy, Piero Cipollone, who highlighted that the issuance of a digital euro 'would be an effective tool to counter the spread of cryptocurrencies, which are instead private payment schemes'[17].

On the assumption that the digitalization of finance has broadened the payment options available as major technologies have entered the payments market, the ECB is carrying out a project on the digital euro that not only has technical relevance but - as Fabio Panetta, a member of the institution's Executive Board, emphasises - also has "a clear political dimension in view of its broad social implications"[18].

Different reasons lead to the possibility to create an electronic currency, issued by the Eurosystem, that supports and does not replace the physical nature of the monetary medium in force today, ensuring access to cash for all citizens of the euro area[19]. In this regard, the ECB's efforts to activate its own Central Bank Digital Currency in view of a necessary adjustment of the payments system according to the behaviour of market operators, who in recent years have shown a clear preference for digital methods, compared to the use of cash, which has decreased significantly. It follows that the need to create the digital euro is correlated with the intention of offering European citizens easy access to

[16] See ECB, *Publications on Central bank digital currencies (CBDC)*, viewable at *www.ecb. europa. eu/home / search/html/central_bank_digital_currencies_cbdc.en.html*.
[17] See the speech given on November 15, 2021 on "The Role of the Digital Euro as an Anchor of the Payments System" at the conference "The Digitization of Financial Instruments: Opportunities and Risks," organized by the Bank of Italy and the National Association for the Study of Credit Problems (ANSPC).
[18] See the editorial entitled PANETTA (ECB): *Digital euro project has a clear political dimension*, viewable at *https://finanza.lastampa.it/News/2023/01/23/panetta-bce-progetto-delleuro-digitale-ha-una-clear-political-dimension*.
[19] See ECB, *A digital euro*, viewable at *https://www.ecb.europa.eu/paym/digital_euro /html/ index. it.html*

particularly convenient forms of payment, without prejudice to the need to «preserve the role of public money ... in order to ensure in an orderly manner the coexistence, convertibility and complementarity of the various forms of currency »[20]. A firm anchor is needed to protect the uniqueness of money, monetary sovereignty and the integrity of the financial system, which preserve the role of central bank money.

Specifically, it notes the circumstance that the digital euro, having a use comparable to that of banknotes, fulfils an instrumental function in reducing the overall costs of payment systems; therefore, it is particularly effective in avoiding undesirable implications in the fulfilment of the ECB's institutional functions[21].

Moreover, it should be considered that the Eurosystem, in the event that such digital money is formalised, will have to continue to ensure access to cash throughout its area of competence, so that the new electronic money would only expand the range of possible choices of payment method, with a view to facilitating the conduct of economic and financial activities[22].

In addition, it should be added the synergy capacity of the digital euro with private payment solutions, whereby it is able to make the European payment system more innovative, competitive and resilient. From another point of view, then, there is the possibility of achieving a closer relationship between the European digital economies in relation to which the digital euro plays a unifying function, given the significant impetus that it is able to provide to the operational connection between them[23].

That said, despite the indicated benefits connected to the use of information technology in the creation of money, it cannot be hidden that - in the

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[20] See ECB, *The Digital Euro and the Evolution of the Financial System*, Introductory remarks by Fabio Panetta, before the Committee on Economic and Monetary Affairs of the European Parliament, Bruxeller, June 15, 2022.
[21] See CAPRIGLIONE, *Monetary Union, Banking Union, Role of the ECB*, on AA.VV., *Public Law of the Economy*, edited by Pellegrini, Milan, 2023, p. 501 ff.
[22] See *A digital euro*, cit.
[23] See ECB, *Report on a digital euro*, cit. where the issue of a Central Bank Digital Currency (CBDC) is examined from a Eurosystem perspective.

exercise of the discretionary power in which the European Central Bank will implement the said project - it may be assumed that certain drawbacks will be highlighted related to the manner in which this institutional function is carried out. The ECB itself is fully aware of this, as can be seen from the intervention of one of its representatives, who emphasised that the option in question has not only implications technical, but also political and legal[24].

Hence the cautious attitude underlying the commitment to the said project, which can be deduced from the fact that its realisation is conditional on the fulfilment of “a series of principles and requirements ... including accessibility, resilience, security, efficiency and privacy, in compliance with the relevant legislation”[25]. This explains why the ECB felt the need to use of a 'public consultation' in order to ascertain, in advance, the project's compliance with the needs of potential users of the digital euro; it also foresees the possibility of eliminating any limitations in its implementation during the technical-political assessment by the European Parliament and other Union institutions and authorities.

There is a clear awareness that we are in the presence of an innovation that affects both important monetary policy profiles and the operating structures of the financial sector, which - as will be discussed below - could be exposed to a risk of disintermediation due to a competitive effect triggered by the digital euro vis-à-vis the ordinary activities carried out by members of the credit sector.

4. Specifically, the characteristic of the digital euro as a central bank liability offered in digital form to be used by citizens and companies for their retail payments is taken into consideration; hence its implicit capacity to supplement the supply of cash and wholesale deposits falling within the the central bank’s remit. It is, therefore, evident how the introduction of such an instrument

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[24] See *Speech* di Yves Mersch, Member of the Executive Board of the ECB and Vice-Chair of the Supervisory Board of the ECB, at the Consensus 2020 virtual conference, 11 may 2020.
[25] See ECB, *Report on digital euro*, cit., p. 4.

becomes the object of evaluation by market operators, since it can meet the expectations of the latter in ways that are preferable to those offered by banks.

Indeed, if we consider it carefully, the programmatic design of digital money, while still keeping the typical connotation of cash, allows for another kind of benefits, such as the possibility of making offline payments; in other words, the new technology - being correlated to the increasing consumer demand for an immediate access to the payment system - seems likely to attract the interest of those seeking for a change in the financial *agere*. Thus, a prospect of increasing access to the digital euro is emerging, confirmed by the preferential role, recently, assigned to fast electronic payments.

Hence, we are dealing a technological innovation that brings a significant advantage to savers/custodians because - besides providing citizens with money that they can safely use for their payments - it would allow them to convert their deposits held at commercial banks into a risk-free CBDC. Given the obvious usefulness of such operational formula, however, the negative consequences that can be hypothesised with regard to cases of 'crises' of credit institutions are noteworthy, since it is foreshadowed that the holders of bank deposits intend to proceed to a timely replacement of the latter with digital money; hence the presumable run of savers to the withdrawal of their monetary holdings deposited with credit intermediaries, a phenomenon experienced several times in the past during banking crises. Conditions are identified to recognise the existence of 'weaknesses' in the current configuration/structure of the digital euro; hence, the reason why the ECB, in seeking possible remedies in this regard, suggests a re-evaluation of the offering of ‘ancillary services’ by supervised intermediaries. Such a practice could, in fact, allow the latter to improve their business model, thereby managing to retain their customers, who would be prevented from opting for forms of operation that, as mentioned above, are safer than banking.

Needless to say that, so far, it is not possible to assess with any certainty the negative impact of the digital euro on the functionality of the credit system, which for some years now has disposed the 'bank-centric' character that for so long characterized its essence[26]. As mentioned above, so far, the features of the electronic sovereign currency are still being developed, so it is to be hoped that the project under consideration on its way to the European summits will undergo modifications such as to eliminate - or, at least, reduce - the risks connected with the possibility of a significant process of banking disintermediation related to the methods that characterize the structure of the digital euro.

Certainly, the European regulator, in ruling on the matter, will have to find adequate technical measures to reconcile the introduction of this monetary type with the need not to devalue the function of the Deposit Protection Fund, which - as is well known - is aimed at ensuring the protection of investors holding claims against banks in crisis, a protection that is, moreover, contained within pre-established limits[27]. It is worth mentioning that the guarantees offered by the digital euro, at least with regard to the protection of the entire amount of deposits, are undoubtedly superior to those ordinarily in the credit sector. The need not to diminish the role of this institution is even more evident if one refers to the circumstance that in some EU countries, such as Italy, it is called upon by the financial sector's top management to perform a role that is coplanar to that of the supervisory authorities themselves, which make use of it to overcome certain critical issues that may arise in the management of banking crises[28].

From another point of view, it should be noted that the aforementioned

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[26] See URBANI, *I servizi e le attività di investimento e gli strumenti finanziari*, on AA.VVV., *Manuale di diritto bancario e finanziario*, Milan, 2018, p. 238; SABBATELLI, *Il modello bancocentrico tra disintermediazione e finanza alternativa*, on AA.VV., *Diritto pubblico dell'economia*, edited by Pellegrini, Milan, 2023, p. 411 ff.

[27] See, among others, SABBATELLI, *Tutela del risparmio e garanzia dei depositi*, Padua, 2012, passim; MACCARONE, *I Fondi di Garanzia dei depositanti come strumento di Vigilanza*, on *Dir. banc. Merc. finanz*., 3, 2013, p. 432 ff; CAPRIGLIONE and CERCONE, *Commentary on Article 96*, on *Commentary to the Consolidated Law on Banking and Credit*, Milan, 2018, tome II, p. 1347.

[28] It should be noted that in Italy the Deposit Protection Fund, according to a 'strange' interpretation of its role, in recent years has been fulfilling the function of a 'financial bridge' in keeping alive failing banks that are waiting for a buyer, as in the case of the popular banks of Veneto, bought at the price of 'nummo uno'; see ROSSANO D., *ll Fondo Interbancario di Tutela dei Depositi. Metamorfosi della funzione*, on AA.VV., *La supervisione finanziaria dopo due crisi. Quali prospettive*, in *Riv.trim. dir. econ*., 2022, suppl. to no. 1., p. 112 ff.

'weak points' - referring to the specific nature of the monetary innovation that is to be implemented - lead one to reflect on the procedural modalities with which, according to the indications of the aforementioned ECB Report, the evaluations carried out by the authorities responsible for analysing the legal profiles underlying the issuance of the digital euro must comply.

We refer in particular to the fact that, so far, this process seems likely to be under ECB's domain, supported by a decision-making correlated with the top authorities of the Union (Commission, Council and Parliament); this, despite the fact that within the Executive Board of the aforementioned banking institution there is full awareness of the regulatory significant implications (*rectius*: uncertainties) that a procedural technique of this kind may cause at financial system level[29].

5. The systemic framework underlying the digital euro suggests either on the extent of the 'sovereignty transfer' ordered with the implementation of the Maastricht Treaty, and either on the implementing the structural modification of the 'single currency' described above on the basis of a decision entrusted exclusively to the European authorities, without prior consent issued at least by the parliamentary body of the countries involved in such relevant change.

Economic-juridical literature has long theorized the sum of supreme powers, which according to Kelsen is an 'essential quality' of the State[30], although the notion of sovereignty originated with the aim of "attributing to the sovereign ... powers ... capable of governing public affairs"[31]. Likewise, the doctrine has indicated among the constitutive aspects of state sovereignty the right to issue money which, in modern financial systems, is exercised through the national

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[29] See ECB, *Speech* di YVES MERSCH, at the Consensus 2020 virtual conference, cit.

[30] See KELSEN, *Das Problem der Souveränität und die Theorie des Völkerrechts. Beitrag zu einer reinen Rechtslehre, Mohr*, Tübingen 1920 (1928), transl. it. edited by CARRINO, *Il problema della sovranità e la teoria del diritto internazionale*, Milan, 1989.

[31] Thus GIANNINI M.S., *Sovranità* (dir. vig.), on *Enc. dir.*, vol XLIII, p. 225, who traces the first theorization of sovereignty to BODIN (*Les six livres de la Republique*, Paris, 1576).

central bank[32]; indeed, this is one of the constitutive profiles of *potestas* (in which the appointed supreme public powers are identified) which, according to the indications of the constitutional and international law of all countries, identifies the essence along with the people and the territory[33].

Thus, wanting to ascertain whether there are any limits to the exercise of the body of powers assigned to the EU by the Maastricht Treaty, it is believed that the principle of self-limitation, which is absolute as per its nature, cannot be applied to exclude it, since "the powers of the State can be exercised only for what is their content"[34]. It is therefore necessary to have regard to the commitments that the member states assumed when they signed the aforementioned convention; therefore, if considering the provisions of the latter, it is clear that it was intended to establish an economic and monetary union, centered on the realization of a system with a single currency (Article 2), without prejudice to the competence of the individual countries with regard to the coordination of economic and fiscal policies.

Therefore, what is taken into consideration for the purposes of our investigation is certainly the power to issue money *tout court*, hence the possibility of not including in it any changes made to the relative structure, intended to affect the explanatory mode of this function. The circumstance that, at the time when the treaty in question was signed, it was unimaginable the technological developments in the following years leads to exclude that in its contents there was any reference to the use of digital technology in the process of money creation.

Such a consideration could legitimize a negative conclusion as to the exercise of a power of intervention (on the part of the Union's leadership) intended to innovate the European monetary sign in a particularly significant

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[32] See for all the classic works of SAVONA, *Sovranità monetaria*. *Lira schiava o padrona*, Roma, 1974; ID., *Alla ricerca della sovranità monetaria*, Milano, 2007.
[33] See for all the *Commentary on Article 1 Const*. on AA.VV., *Commentary on the Constitution*, edited by Bifulco, Celotto, Olivetti, Turin, 2006.
[34] See GIANNINI M.S., *Sovranità* (dir. vig.), cit. p. 228.

manner. However, on the basis of the well-known 'theory of implicit powers' - considered applicable by the Court of Justice of the European Communities to affirm the parallelism between internal and external competences assigned to the Community organization[35] - it becomes possible to overcome this obstacle and to proceed to an extensive interpretation of the aforementioned legislation with a view to implementing the Maastricht aims.

Given this, it cannot be omitted to observe that in such order of ideas, a logical construction is configured that appreciably broadens the disciplinary scope of EU legislation, with the consequence that problematic effects may arise at the domestic level in relation to the specificity of the regulations of the individual Member States.

In this regard, on a general level, it must be premised that the institutional set-up of the Union refers to a multi-level governmental approach, which articulates decision-making responsibility between the national States and the European supreme authorities; it follows that the integration process is not carried out according to a logic of unity, but rather in a context of necessary confrontation/coordination between the different institutions mentioned above, which are responsible, on the one hand, for the development of common policies, and on the other, for the governance of national interests.

It is evident how the adoption, within the EU, of measures that set forth operational dynamics aimed to reflect critical impact on the stability of the banking sector - as is likely to happen in the presence of the digital euro, to which, as we have said, a process of disintermediation can probably be attributed - becomes a prerequisite for asymmetries that can thwart the benefits of the transition to the single currency. Hence the need to adopt appropriate remedies in order to avoid the distorting consequences of interventions that, in terms of concreteness, alter previous balances in relations between European and national realities.

[35] See Aetr judgment, March 31, 1971, [1971] ECR p. 263 ff.

These considerations show further relevance considering the position that the EU Treaty ascribes to the ECB, giving it a wide scope to operate in line with the logic of an open market economy. Indeed, this institution, holder of autonomous and strong powers, has been assigned, since its inception, a function of primary importance in the overall structure of the Union[36]; furthermore, it performs its tasks with complete autonomy, being exempt from any form of external solicitation and not being able to accept instructions from the governments of the Member States or from other bodies (Article 108); a framework of power completed by the recognition of the power to issue regulations, as well as to make recommendations or opinions, being also empowered to impose fines or other penalties in the event of non-compliance with obligations imposed by the regulations or decisions adopted by it (Article 110).

On this matter, it should be noted that the assertion of the principle of central bank autonomy, now generally recognized, is representative of a need to defend democratic systems from attacks from within their structure; it finds its rationale in the intention to remove monetary policy decisions from the representative democratic circuit and give them to the central banks, which are characterized by their independence. Hence, it is up to the latter - and them alone - to manage monetary policy! Moreover, the European Court of Justice appears to be aware of this, and its interventions - implemented after the applying minimum forms of control over non-standard measures - are limited to the scrutiny of 'manifest violations' of the ECB; obviously not in order to endorse any decision of

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[36] See, among others, BERK J. M., *Banca centrale e innovazione finanziaria. Una rassegna della letteratura recente, on Moneta e credito*, 2002, p. 345 ff.; AMTENBRINK - DE HAAN, *The European Central Bank: an Independent Specialized Organization of community Law. A Comment*, on *Commercial Mararket Law Review*, 2002, vol. 39, p. 65 ff.; VELLA, *Banca centrale europea, banche centrali nazionali e vigilanza bancaria: verso un nuovo assetto dei controlli nell'area dell'euro?*, on *Banca e borsa*, 2002, I, p. 150 ff.; ID, *La nuova banca centrale europea*, on *www.lavoce.info*, 18/9/2012; PELLEGRINI, *Banca Centrale Nazionale e Unione Monetaria Europea*, Bari, 2003, Chapter VI; AA.VV., *La banca centrale europea*, edited by Belli and Santoro, Milan, 2003; MALATESTA, *La Banca centrale europea*, Milan, 2003, *passim*; BINI SMAGHI, Going Forward: Regulation and Supervision after the Financial Turmoil, on Paolo Baffi Centre Research Paper no. 2009-47; PITRUZZELLA, *Austerità finanziaria verso crescita economica nel dibattito dell'Eurosistema*, in *Quaderni costit.*, 2012, p. 427 ff.

the ECB, as one might simplistically believe, but in deference to the actual scope of its competence.

Moreover, it should not ignored that, over time, the manner in which this institution has exercised its function of 'governing' monetary policy has experienced a significant evolution, which has ended up affecting the institutional framework of the Eurosystem and, more generally, the overall structure of the EU[37].

In particular, there has been a shift from an activity originally aimed at maintaining 'price stability' - and, therefore, limited (at least in the initial phase) to the prevention of deflation and inflation - to the subsequent arrangement of interventions characterized by the 'discretion' that characterizes the action of a central bank; an operativity - the latter - that can be observed especially following the crisis events (as per the one in the 2007 and after), which involved the ECB engaged in the search for remedies to contain the negative effects[38].

However, with ECB’s particularly broad capacity for intervention, such as the one highlighted above, it seems likely that the ECB would consider it possible to bring within its sphere of influence the power to 'decide independently' on the implementation of the digital euro; the reasons outlined above, however, raise many doubts regarding the legal legitimacy of such an intervention if its formative process takes place exclusively within the European framework. This conclusion should reflect whether it would be advisable to also involve in the decision-making process in question the institutions of the Member States that are competent in the definition of issues (of international relevance) affecting the financial stability of domestic realities.

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[37] See LEMMA, *'Too Big to Escape': A Significant Clarification On the Scope of the Single Supervisory Mechanism*, on *Riv. Trim. Dir. Ec.*, 2017, II, p. 45 ff.

[38] Reference is made, in particular, to the operations of the Security Market Program, which pose an obstacle to the explosion of the gap between the yields of the securities of different countries, realizing forms of stabilization of the markets and, therefore, preventing the emergence of speculative runaways to the detriment of a given country; see on this subject CAPRIGLIONE - SEMERARO, *F Crisi finanziaria e dei debiti sovrani. L’unione europea tra rischi ed oportunità* , Milan, 2012, ch. X.

6. Focusing our analysis on the Italian case, the peculiarity of the matter concerning the economic-financial sector, together with the reference to the theory of 'counter-limits' - developed by the Consulta in order to preserve the fundamental principles of the Italian Constitution against possible contrasts with directly applicable European norms[39] - allow us to confirm the perplexities enunciated above, inducing to search a different way to ensure the implementation of the digital euro.

In this regard, the studies carried out in the last century on the traceability of money within the disciplinary framework of Article 47 of the Constitution are considered[40]. The research on the legal basis of the powers of the central bank leads to an analysis of the connection between credit and savings and, more generally, their relationship with money, reaching the conclusion that "one of the tasks of the Republic is to defend, as a value in itself, the element into which liquidity is translated, referred to in the savings/credit relationship, the currency"[41]. More specifically, the clarification of the legal aspects of the interaction between the credit, monetary and currency functions becomes a precondition for highlighting the "unitary nature of the money-credit phenomenon", to which the Constitutional Court had devoted its attention since 1958, emphasizing that "the credit function has long been considered ... of immediate public interest, in all its extension, because credit circulation decisively

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[39] The Italian Constitutional Court has on several occasions reiterated that the fundamental principles of the constitutional order operate as counterbalances to the entry of European Union norms (see Judgments No. 183 of 1973, No. 170 of 1984, No. 232 of 1989, No. 168 of 1991, No. 284 of 2007), arriving in 2014, with Judgment No. 238, at the conclusion that the international norms to be introduced into the domestic legal system must be made compatible with the "qualifying and inalienable principles of the constitutional order and, therefore, with the principles that oversee the protection of fundamental rights"

[40] See *ex multis* NIGRO M., *Profili pubblicistici del credito*, Milan, 1969, p. 35 ff., where the "nexus between credit and savings" is recalled; MERUSI, *Per uno studio sui poteri della banca centrale nel governo della moneta*, in *Riv. trim. dir. pubbl*, 1972, p. 1425 ff; ID., *Commento all'art. 47 cost*., on *Commentario della Costituzione*, edited by Branca, III, Bologna - Roma, 1980; CAPRIGLIONE, *Intervento pubblico e ordinamento del credito*, Milan, 1978, cap. III; ORTINO, *Banca centrale e Costituzione*, Pisa, 1979.

[41]Thus MERUSI, *Commento all'art. 47 cost*., on *Codice commentato della banca*, edited by Capriglione and Mezzacapo, Milan, 1990, tome I, p. 24

influences the money market"[42] .

As we have had occasion to highlight in the past, the complex mechanism of the banking law of the 1930s, firstly, and the regulatory measures of the post-war period, subsequently, implement a rigorously unitary discipline of the powers of banking supervision with the regulation of monetary flows, given the attribution of the former to the central bank, already the holder, with the issue (and the prerogatives connected to it) of the control of the monetary base[43].

The affirmation of the public interventionist concept in the economy places at the foundation of the banking organizational model, in particular, support for economic development; for this purpose, supervisory mechanisms are introduced into the credit system that realise a pervasive action of the sector 'governance'. In the second half of the last century, the instruments of monetary maneuver, inherent in the Bank of Italy's function as a central bank, were frequently used in conjunction with its administrative powers as a supervisory body; hence the peculiar role attributed to money, the quantity of which 'in real terms' was considered functional to increasing production[44].

Until the creation of the 'single currency' in Italy, the lines of a strong link between credit and money can be deduced from the interventions, implemented by the public authorities, aimed at determining variations in liquidity within the economic system. These interventions are implemented in forms of expansion or restriction of liquidity usually operated through the banking channel; their effectiveness is, therefore, directly correlated to the power of the monetary authorities to enforce forms of quantitative control of liquidity on the banking system and, at the same time, on the possibility of their implementation by credit institutions.

Accession to the Maastricht Treaty does not bring significant changes to

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[42] See Constitutional Court November 24, 1958, on *Giur. const.*, 1958, no. 883.

[43] See CAPRIGLIONE, *Intervento pubblico e ordinamento del credito*, cit. p. 65.

[44] See CIOCCA, *Ottimalità delle strutture creditizie: il pensiero di Einaudi e la ricerca recente Proceedings of the conference on The Money Problem Today*, organized by the Accademia Nazionale dei Linci, February 1975, p. 132 ff

the described systemic structure; indeed, the activities of the individual national realities deemed not to be in conflict with the ESCB are preserved[45]. Moreover, the preservation of supervision in banking and financial matters in the hands of the national central banks was confirmed by the Community itself, which, at the beginning of the new millennium, proceeded to a renewed clarification of the advisability of "a strengthening of the central banks in their supervisory activities"[46] .

It should be noted, however, that adherence to this treaty - as has been pointed out elsewhere - made it problematic to bring the solution of issues centered on the relationship between political power and monetary power under the provisions of Article 47 of the Constitution, such as, for example, making it no longer feasible to resolve banking crises by resorting to the so-called socialization of losses[47]. The result was the opening of timeframe of characterized by fundamental uncertainty regarding the possibility of exercising supervisory activity in the operational manner that had characterized it in the past. This situation changed in June 2012, when the European Council took the decision to create a European Banking Union, characterized by the 'involvement of the ECB'[48]; in fact, a 'single supervisory mechanism for the euro area' and a resolution mechanism were set up, which - following a transfer of supervisory powers from the domestic authorities to the ECB - gave content to an innovative reform project to

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[45] See CAPRIGLIONE, *UME e riforme del «sistema banca centrale»: l'Ufficio Italiano dei Cambi tra passato e avvenire*, on *Banca e borsa*, 1997, I, p. 684 ff.; ID., voce Moneta, cit., p. 747 ff., especially p. 764

[46] See ECB, *Report* for the Year 2002, published in May 2003, p. 158 ff.

[47] See on this point CAPRIGLIONE, voce Moneta, cit., p. 747 ff.; ID., *Mercato regole democrazia*, Turin, 2013, ch. II; in a conforming sense SEPE, *A crisis, public policies, banking governance, expectations & rule reform: when will the horse go back to drink*?, on *Law and Economics Yearly Review*, 2014, I, p. 210 ff.

[48] See, among others, WYMEERSCH, *The European Banking Union. A first Analysis*, Universiteit Gent, Financial Law Institute, WP, 2012-07, October 2012, p. 1; AA.VV., *Dal testo unico bancario all'Unione bancaria: tecniche normative e allocazione di poteri*, on *Quaderni di ricerca giuridica della Banca d'Italia*, no. 75; CAPRIGLIONE, *L'unione bancaria europea*, Turin, 2013; IBRIDO, *L'unione bancaria europea. Profili costituzionali*, Rome, 2017.

strengthen the European integration process[49].

Concluding on this, it can be said that, on closer consideration, the outlined evolutionary process of financial regulation - while significantly innovating the sector's authoritative framework and the sphere of competence of national supervisory bodies - has left the legal relevance of 'money governance' unchanged. The latter, although in different ways than in the past, still has a strong interactive capacity on the exercise of banking activity, which under the Italian Constitution is to be included in the framework of the Republic's programmatic protections and, therefore, in a context of primary relevance; hence the configurability of a valid argumentation to contest the exclusive competence of the Union's leadership in the definition of the problem under examination.

From another point of view, as mentioned at the beginning of this section, the reference to the theory of 'counter-limits' also provides valid indications for the analysis concerning the possibility of refuting the orientation envisaged in the aforementioned ECB Report.

In this regard, the authoritative doctrine that has commented on the Constitutional Court's orientation on the reconstruction of the relationship between the domestic and EU legal systems and, in the reference to the 'counter limits', supports the admissibility of the recognition at the European level of the existence of fundamental rights[50]. Likewise, it should be considered that, in the assessment of the balancing of domestic requirements with those set forth in the provisions of the EU Treaties, maintain the intangibility of the supreme principles of the constitutional order of the State, ensuring the protection of fundamental rights[51].

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[49] See CAPRIGLIONE, *European Banking Union. A challenge for a more united Europe*, on *Law and economics yearly review*, 2013, I, p. 5 ff.

[50] See CARTABIA, *Convergenze e divergenze nell'interpretazione delle clausole finali della Carta dei diritti fondamentali dell'Unione europea, ion*, on AIC Magazine, No. 3/2017, p. 2.

[51] See ex multis the contributions of BERNARDI - CUPELLI (eds.), I (a cura di), *Il caso Taricco e il dialogo tra le Corti. L'ordinanza 24/2017 della Corte costituzionale,* Naples, 2017, *passim*; PELLIZZONE (ed.), Principio di legalità penale e diritto costituzionale. Problematiche attuali, Milan, 2017, passim; SALMONI, *Unity in diversity or diversity in unity? The concepts of national identity and constitutional identity and the simulated dialogue between the Court of Justice and the*

However, it should be noted that different positions on the theory of 'counter limits' are found in the literature; thus, *inter alia*, there is the thesis according to which the threat of recourse to the latter "carries within itself a potentially destructive logic of the dialogue between the Courts", negatively affecting the relations of integration between national law and Union law, whereby no room is left for "conciliatory solutions between national principles and the requirements of uniform application of Union law'[52].

Conversely, we agree with a different approach, which positively assesses the 'counter limits', whose function - if correctly engaged - is capable of preventing tensions between the different "levels" of protection of rights in Europe[53]. Indeed, we agree with the argument that excludes a static configuration for the latter, assuming that the relative scope takes on "different contours depending on the context in which it is invoked and the case in point, in order to avoid a dangerous heterogenesis of ends"[54].

In the light of these considerations, it is clear that the solution to the issue aforementioned must be ascribed to the relationship between European and domestic law, in order to prevent an inadequate expansion of the competences of one to the prejudice of the other.

On this matter, it is worth recalling the orientation of the European Court of Justice which, in the well-known Melloni judgment, that affirmed that the protection of fundamental rights provided for by the Constitutions of the Member States can never compromise "the level of protection provided for by the Charter,

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Constitutional Court, Report to the International Congress, November 2018, *Perspectives on Contemporary Constitutionalism: on the occasion of the 70th anniversary of the Italian Constitution and the 40th anniversary of the Spanish Constitution.*

[52] See LO CALZO, *Dagli approdi della Corte costituzionale in tema di controlimiti alle tendenze nel dialogo con le Corti*, viewable at *https://www.federalismi.it/nv14/articolo-documento.cfm?Artid.*

[53] See CARDONE, *Dalla doppia pregiudizialità al parametro di costituzionalità: il nuovo ruolo della giustizia costituzionale accentrata nel contesto dell'integrazione europea*, on *Osservatorio sulle fonti*, no. 1/2020, p. 71; POLIMENI, *Controlimiti e identità costituzionale nazionale. Contributo per una ricostruzione del "dialogo" tra Corti*, Turin, 2018, p. 341 ff.

[54] GALLO *Controlimiti, identità nazionale e i rapporti di forza tra primato ed effetto diretto nella saga Taricco*, on *Dir. un. eur*., no. 2/2017, p. 263.

as interpreted by the Court, nor the primacy, unity and effectiveness of Union law"[55]. Significant, moreover, is a subsequent, more moderate direction taken by that court in which the possibility of imposing limitations on the exercise of fundamental rights is subject to the fact that such limitations “in compliance with the principle of proportionality are necessary and actually respond to objectives of general interest recognised by the Union”[56].

Such a claim, aimed at affirming the substantial primacy of Union law, might lead to the theory of 'counter limits' is inapplicable in this case. This hypothesis does not denote an absolute nature (as it might *prima facie* appear) since, in our case, the so-called principle of attributed competences is applicable, as per Article 5 TEU, according to which the Union acts exclusively within the limits of the competences attributed to it by the Member States in the Treaties. Specifically, the fact that the EU system cannot be considered a subject of international law as original, but rather as derivative, affects the scope of the Union's competences, which must be circumscribed to those provided for in the treaties; hence the limits of the actions that can be brought against the Member States, limits that cannot exceed beyond the powers that the latter have conferred.

Hence, this principle circumscribes the powers of the EU, so that the interventions of the Court of Justice often mitigate its rigidity with extensive interpretations of the powers vested in the European institutions. Likewise, the provision under Article 308 of the EC Treaty, which allows the European Community to adopt acts without a specific legal basis in order to realize one of the aims set forth in the Treaty, is intended to temper the *criteria* mentioned above.

Given this, it can be said that in a multilevel system such as the European system, the roots of the applicable law are to be found in the legal and cultural heritage of the adhering countries. In this context, it becomes conceivable that the

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[55] See CJEU, judgment February 26, 2013, case C - 399/11, Melloni, paragraph 60
[56] See CJEU, judgment February 12, 2019, case C- 492/18, PPU, TC, paragraph 56.

EU might accept requests from the latter to represent the need to conform the digital euro project to the criteria characterizing the specificity of national financial systems. On the other hand, seems relevant the circumstance that the Court of Justice of the EU, in the well-known Taricco bis judgement, answered to a preliminary question raised by the Italian Constitutional Court by modifying and refining one of its previous decisions, accepting on a factual level the 'counter-limits' that had been opposed to it[57].

In this case, the constitutional protection of banking activity guaranteed under Article 47 of the Italian Constitution identifies, in fact, a valid precondition for restoring its core to one of the fundamental principles of the Italian legal system; this, with the obvious consequence of removing the realization of the digital euro from the exclusive competence of the European authorities.

7. Perplexities about the applicable regulation for the introduction of the digital euro are reflected in a well-established case law of the German Federal Constitutional Court dating back to the last decade of the last century[58]. Indeed, in it can be found the distinction between *Solidargemeinschaft* ("community of solidarity") and *Stabilitätsgemeinschaft* ("community of stability"), as well as the clarification that the federal nation-state represents the paradigmatic case of Solidargemeinschaft and, therefore, of a community based on risk and opportunity sharing, equalization, and the principle that no component of the federation should be left behind. In contrast, the European Union would not, on the other hand, constitute a community of solidarity, but only a Stabilitätsgemeinschaft, whereby each state is solely responsible for itself

[57] See CJEU, judgment Dec. 5, 2017, Case C-42/17.

[58] We refer to the decision known as the Maastricht-Urteil in which the German Federal Constitutional Tribunal confirmed the compatibility of the Maastricht Treaty with the Bonn Basic Law (2BVerfG October 12, 1993, No. 2159/92, in 89 Entscheidungen des Bundesverfas sungsgerichts, 1994, 155 ff.). On this subject, see MACCORMICK, *The Maastricht Urteil: Sovereignty Now*, on European Law Journal, 3, 1995, p. 259 ff.

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(staatliche Eigenverantwortung).

Hence the belief that the German federal state is not obliged to take responsibility for the potential interests of the EU, but only for those functional to the realization of an integrated and competitive market, inspired by the principle of competition. It is clear, however, how the primary importance is ascribed exclusively to the realization of national goals. This thesis of Germany's objective unwillingness to open to the Union found its epicenter in the interventionist framework underlying the May 5, 2020 decision of the appointed Constitutional Tribunal. And indeed, it held that the latter is given the power to disregard every disciplinary innovation and activity implemented in the EU (including the work of the ECB) if it is not deemed to be in accordance with the ordering criteria (prohibitions, limitations, etc.) set out in Germany's Fundamental Law.

In particular, the power to review and disregard a judgment of the European Court of Justice was claimed[59]; in fact, the General Court in essence invalidated a judgment of the latter in which it recognized "the validity of Decision (EU) 2015/774 of the European Central Bank of March 4, 2015 on a program for the purchase of public sector assets on secondary markets, as amended by Decision (EU) 2017/100 of the European Central Bank of January 11, 2017"[60]. This, on the assumption that the German government and parliament had failed to comply with the principle of proportionality in the ECB Quantitative Easing decision, which allegedly acted *ultra vires*[61].

[59] His is clear from paragraph 111 et seq. of the decision, summarized as follows in point 2 of the official maxim: "2. The Court of Justice of the European Union exceeds its judicial mandate, as determined by the functions conferred upon it in Article 19(1) second sentence of the Treaty on European Union, where an interpretation of the Treaties is not comprehensible and must thus be considered arbitrary from an objective perspective. If the Court of Justice of the European Union crosses that limit, its decisions are no longer covered by Article 19(1) second sentence of the Treaty on European Union in conjunction with the domestic Act of Approval; at least in relation to Germany, these decisions lack the minimum of democratic legitimation necessary under Article 23(1) second sentence in conjunction with Article 20(1) and (2) and Article 79(3) of the Basic Law"

[60] See CJEU, judgment Dec. 11, 2018, C-493/17, Heinrich Weiss and others

[61] Consequently, the BverfG, considering itself not bound by the CJEU's decision, effectively gave a three-month ultimatum to the ECB to clarify compliance with the aforementioned principle of proportionality between the program and the objectives underlying the operations in question; a

It is clear how the aforementioned decision - questioning the legitimacy with regard to the recourse to a review that recognizes, in the matter, an *ultra vires* activity - claims to the appointed constitutional body the power to deal with - given the role of primacy of community sources - the contradictions that may be arise with respect to the fundamental and inviolable rights of the national jurisdiction. It follows an intervention in some ways analogous to those that, in the Italian legal system, are set with reference to the aforementioned theory of 'counter-limits'; on close examination, however, it is clear that- even if it appears *prima facie* suitable to justify the intent to manage inter-ordinamental relations - is centered on a merits assessment of the action carried out by the ECB, whereby it disregards the limits assigned to said institutional body for the exercise of its role.

In the past, we have considered not acceptable the contents and conclusions reached in said judgment, having regard to the fact that it takes a restrictive view of monetary policy[62]; in particular, we point out that the German court based its constructive hypothesis on the mistaken belief that in *subiecta materia* the ECB's "conventional" activity is the rule and its "unconventional" activity the exception.

Conversely, it is well known that from 2010 onward the latter has taken priority in the *agere* of the appointed financial institution[63]; moreover, quantitative easing itself was adopted in the United States before its introduction in the eurozone[64], and, in this country, a violation of the boundary between fiscal

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time frame at the end of which the Bundesbank would have to withdraw from the ECB's intervention plans if the aforementioned condition was not verified.

For a commentary on this decision of the German Constitutional Court, see LOMBARDO, *Quantitative Easing: la sentenza della Corte Costituzionale tedesca*, on *dirittobancario.it*, May 6, 2020; BASSAN, *Il primato del diritto tedesco*, on *dirittobancario.it* del 7 maggio 2020.

[62] CAPRIGLIONE, *Covid-19. Covid-19. Quale solidarietà, quale coesione nell'UE? Incognite e timori*, on *Riv. trim. dir. econ*., 2020, I, p. 214 ff.

[63] For a clarification of the modalities of this action, see EUROPEAN CENTRAL BANK, Monthly Bulletin, July 2011, pp.57-72, where the varied technical forms in which ECB intervention has taken place are spelled out

[64] See BEN BERNANKE, *The Crisis and the Policy Response, Federal Reserve*, Jan. 13, 2009; MARTIN FELDSTEIN, *Quantitative Easing and America's Economic Rebound*, Feb 24, 2011,

and monetary policy was ever assumed Nowadays, the world's major central banks implement unconventional monetary policies[65].. The old maneuver on the discount rate - which was probably the measure of the German Constitutional Tribunal in referring to the concept of monetary policy- appears to have little relevance in light of the recent financial shocks, almost as if trying to treat not the flu but coronavirus lung disease with aspirin.

The German Constitutional Tribunal claims for itself a plenary jurisdiction extended to 'any form of violation.' Disregarded, therefore, are the fundamentals of contemporary legal culture, as per Adam Smith insights (principle of the division of labor)[66] and Montesquieu (principle of the separation of powers)[67]. It follows that the German court's ruling stands outside the tradition of constitutionalism, which is made up of limits and balances, certainly not "juristocracies". Specifically, the German judges wanted to restrain the willingness to meet the need, felt by many member states, to come to a sharing of risks and debts.

We won't assess the uncertainties introduced by this decision against the framework of a Europe in distress, which is reminded by the country's leadership with greater economic strength that it is capable of 'undermining' and opposing any plan that is not considered consistent with German law (i.e., economically unviable). What is thought-provoking is the tenor of the decision in question, which reprimands the ECB's actions *tout court,* heedless of the confirm obtained

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viewable at *www.project-syndicate.org/commentary/quantitative-easing-and-america-s-economic -rebound? barrier*; RAMPINI, *La ricetta Usa che genera posti di lavoro, on http://temi.repub blica.it/micromega-online/la-ricetta-usa-che-genera-posti-di-lavoro.*

[65] See HEATHER STEWART, *Japan aims to jump-start economy with $1.4tn of quantitative easing*, viewable at *www.theguardian.com/ business /2013/apr/04/japan-quantitative-easing70bn*; MICHAEL JOYCE, MATTHEW TONG AND ROBERT WOODS, *The United Kingdom's quantitative easing policy: design, operation and impact*, on *Quarterly Bulletin* 2011, p. 200 SS.

[66] One has regard to the well-known book *The Wealth of Nations* (1776), Newton Compton Publishers, Rome, 1976, which marks the beginning of classical political economy, providing the framework of the forces that promote growth and development, traced by that A. to the theory of 'labor-value,' as opposed to the theses of the physiocrats.

[67] I refer to the theory enunciated in the volume *Spirito delle leggi* (Spirit of the Laws) of 1748, transl. it. Milan, 1967, in which the idea that "whoever has power is inclined to abuse it" assumes the principle that to avoid such an eventuality "it is necessary that [...] power should stop power"; hence the well-known distinction of the three functions of the state legislative, executive and judicial.

by the Court of Justice. The latter, on closer inspection, reflects the intent to prevent EU countries from obtaining financing from the ECB upon the increase of Quantitative Easing and the adoption of a massive long-term lending program, the so-called TLTRO III[68].

On the other hand, the German government involvement in the matter (for lack of control on the compliance with the principle of proportionality) is fault of the latter's fiscal action, which otherwise handled would not have necessitated such extensive ECB intervention. This gives a very political vectoriality to the decision, traits that show the criticism (protecting the independence of the ECB) by the European Commission, headed by a well-known member of the CDU (Christian Democratic Union), of the position taken by the appointed Constitutional Court[69].

Needless to say that such jurisprudential orientation, however aimed to contain the ECB's expansive force, cannot be traced within a conceptual framework analogous to the one that, in the Italian applicable law, justifies the application of the theory of 'counter limits'. It is driven by the intent to affirm the inadmissibility of 'yielding' to other member states (regardless of their state of need), to allow monetary financing of their deficits. Hence the political meaning of the aforementioned decision, which justifies the ECB's firm reply to the German Constitutional Court in which it reiterates "its commitment to do whatever is

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[68] This program is complemented by the planned asset purchase of an additional 120 billion euros until the end of 2020, while no change is made to interest rates; a decision of immobility that did not please the markets. On this topic see *https://www.soldionline.it/ news/economy-politics/direct-bce-12-march-2020*.

[69] Significant in this regard are the words of Ursula von der Leyen's spokesman Eric Mamer: "We reaffirm the primacy of EU law and the fact that the rulings of the EU Court of Justice are binding on all national courts," reported in the editorial entitled *La ricetta Usa che genera posti di lavoro*, at *http://temi.repubblica.it/micromega-online/la-ricetta-usa-che-genera-posti-di-lavoro*.A chasm opens between Berlin and Brussels, viewable at https://it. insideover.com/politics/si-apre-una-voragine-fra-ber lino-e-bruxelles .html, where, among other things, "the Commission has always respected the independence of the ECB in implementing its monetary policy." Add to this the substantial threat of infringement proceedings against Germany made by the President of the European Commission in a letter specifying that the decision in question "touches on European sovereignty"; cf. in this regard, the editorial entitled *Ue, von der Leyen minaccia procedura d'infrazione contro la Germania per la sentenza di Karlsruhe sugli acquisti della Bce*, at *www.repubblica.it/esteri/2020/05/09/news/ ue_von_der_leyen_minaccia pro-cedura_d_infrazio ne_contro_la_germania_per_la_sentenza_di_karlsruhe_sugl i_acquisti_della_bce.*

necessary within its mandate to ensure that inflation rises to levels consistent with its medium-term objective”[70].

8. The above considerations highlight the problematic nature, from a legal point of view, of the introduction of the digital euro, hence the configurability of the *dilemma* concerning the applicable legislation. Indeed, if it must be considered unquestionable that the evaluation of the technical profiles intended to support such a monetary innovation falls within the legitimate field of intervention of the ECB, the exclusive referral to the latter of the entire procedural process necessary to achieve the aim does not appear to be equally certain.

On the other hand, that we are in the presence of a difficult situation, with not easy outcomes, the members of the ECB's Governing Board themselves are aware, given the timely attestation of one of them in which reference is made to the important "legal" issues that the Eurosystem must address and resolve in order to implement the digital euro project. Specifically, express reference is made to the definition of the "legal basis for issuance" and, more generally, to the "legal implications of the various design features" and the "applicability of EU legislation”[71].

It follows, in the indications of the appointed ECB exponent, the perceived need to activate "a close dialogue with other European authorities and institutions ... to analyze the legislative amendments ...necessary to issue a digital euro." It is clear, however, how difficult it is in this perspective to reach results shared by all

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[70] See editorial titled *Bce, la replica alla Consulta tedesca: “Resta l’impegno a fare qualunque cosa necessaria. Corte Ue ha stabilito che agiamo nel mandato*, visionabile su *www .ilfattoquotidiano.it/ 2020/05/05/bce-la-replica-alla-consulta-tedesca-resta-limpegno-a-fare-qu a lunque-cosa-necessaria-corte -ue-ha-stabilito-che-agiamo-nel-mandato/5792585.*
Also significant is President Lagarde's recent statement in which the independence of the ECB is reaffirmed, making clear that the ECB is accountable only to the European Parliament under the jurisdiction of the European Court of Justice; see BUFACCHI's editorial entitled *Lagarde alla Corte tedesca: «La Bce va avanti imperterrita, è indipendente e risponde al Parlamento europeo»*, at *https://www.ilsole24ore. com/art/lagarde-corte-tedesca-la-bce-va-avanti-imper territa-e-indipe ndente-e-risponde-parlamento-europeo.*
[71] See Speech di MERSCH, Member of the Executive Board of the ECB and Vice-Chair of the Supervisory Board of the ECB**,** at the Consensus 2020 virtual conference, cit.

member states, so as to avoid problems of interpretation in the presence of a particularly significant change in the currency sign. Similarly, the remedy of deferring to the "feedback from future end-users and potential intermediaries" - to which reference is also made - the safeguarding of certain rights (*rectius*: prerogatives) that national regulations consider fundamental seems insufficient; nor does recourse to 'opinions' of public authorities or financial institutions, solicited by the Eurosystem in order to assess the feasibility and operability of the innovation to be introduced, seem to be sufficient and decisive.

It is quite true that in an analysis of the Federal Reserve in the prospect of giving rise to a potential US CBDC, in depicting the complexity of the related issue, the need to have in this regard a broad consultation among the parties interested in the introduction of a 'digital dollar' is pointed out; but it is equally certain that this analysis entrusts to this initiative essentially the purpose of raising awareness among its recipients, without deferring to it the decision as to the advisability of implementing such a project [72].

Hence, for an intervention of such great importance as the one the ECB proposes to carry out, issuing the digital euro, the remedy of prior consultation certainly seems inadequate as per technical legitimacy. It impacts, inter alia, on the contents of the Maastricht Treaty, extending its scope, which besides beneficial effects on financial *agere*, may cause - as mentioned above - considerable critical issues in the credit system.

Hence the possibility of the emergence of a situation of substantial lack of balance in the eurozone, which would inevitably fuel the dystonic relationship between "centralization of monetary policy" and "decentralization of economic, financial and budgetary policy" that, in the opinion of one insightful academic, already connotes the reality of the financial institution at the top of the Union's

[72] See FEDERAL RESERVE SYSTEM, *Money and Payments: The U.S. Dollar in the Age of Digital Transformation*, 2022, p. 13.

summit[73]. This is with the consequence of aggravating the malaise that afflicts the Eurosystem today, primarily due to lack of adequate interaction between the economies that use the single currency, as well as the insufficient capability of the intergovernmental method to set the suitable process to achieve effective fiscal integration, a prodrome of a possible federal construction of Europe.

It is clear how, in such scenario, the guarantee of full compliance with the principles underlying the European Union occurs only if the amendment of the transfer of sovereignty contents, implemented by the member states that have joined the single currency, is provided in procedural forms that are needed to integrate the European treaties.

If this constructive hypothesis is not reflected in the EU, it is believed that in the future in the Italian reality could be raised issues in which the theory of 'counter limits', mentioned above, is invoked for alleged violation of a fundamental right. Therefore, in order to avoid conceivable tensions (or even conflicts) with an uncertain outcome in the courts, it would be appropriate for the EU's authorities to obtain prior consent from Italy's competent political bodies.

[73] See FABBRINI, *L'eurozona nata male e quel vizio franco tedesco*, on *IlSole24Ore* of 03/31/2015, where it is argued that said reality is essentially the result of a Franco-German political compromise.

DIGITAL EURO: IS IT A FURTHER WAY TO FINANCIAL DISINTERMEDIATION? *

Valerio Lemma **

ABSTRACT: *The first analysis of the digital Euro shows the possibility that citizens may perceive it as a substitute for bank deposits, with obvious competitive effects between the ECB's activity and the collection of savings by commercial banks.*

Therefore, it is possible that the effects of this innovation would not remain limited to the money market, but would represent a new form of financial disintermediation in the banking industry. This raises doubts as to the nature of this choice and its compatibility with the text of the European Treaties, as well as specific questions as to the effects of the competition with respect to a possible reduction in the amount of money created by inter-banking intermediation.

Hence, the need for an interdisciplinary in-depth study that identifies the paths to ensure that the adoption of the digital Euro complies with the current regulatory framework. Thus, considering both it is safety with respect to the stability of the capital market and, ultimately, to the functioning of the real economy.

1. The issuing by the competent monetary authority of new means of wealth circulation referable to a digital, cryptographic and telematic representation of information (so-called Central Bank Digital Currency or CBDC and, as far as the EU context is concerned, Digital Euro) raises numerous

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questions. [1]

When identifying these questions worth solving to preserve the legal order of the market, it is first to be noted that central banks seem to have been induced by the market to assess the possibility of issuing sovereign money through algorithmic solutions, DLT technologies and digital media, on the basis of the operational opportunities arising from the experience of the various attempts to implement a Peer-to-Peer system of electronic money. [2]

At first sight, the matter deals with the consequences of reshaping the central bank's supply of sovereign money to meet the needs of operators in virtual ecosystems and immersive realities. After all, in many types of telematic transactions, such a crypto-currency would also represent an alternative to scriptural money (created through bank deposits) and electronic money (issued by authorised private institutions), on the understanding that - in the plans formulated so far - it would correspond to a central bank liability. [3]

With reference to the Eurozone, the introduction of a digital Euro could be a more efficient alternative to the types of support for sovereign currency experienced so far. With respect to such benefits, new burdens and risks could emerge, hence there is the need to promote an analysis of the impact of the Digital Euro, also considering the technology chosen for the issuing and circulation of this innovation. [4]

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[1] See Powell, *Welcoming remarks at the "International Roles of the U.S. Dollar," a research conference sponsored by the Federal Reserve Board*, Washington (DC), 17 June 2022, who stated that “the Federal Reserve is examining whether a U.S. central bank digital currency (CBDC) would improve on an already safe and efficient domestic payments system. As the Fed's white paper on this topic notes, a U.S. CBDC could also potentially help maintain the dollar's international standing”
See also *Eurosystem launches digital euro project*, press release, 14/07/2021
On the relations between law, economics and financial innovation, see Capriglione, *Law and economics. The challenge of artificial intelligence*, in Law and economics yearly review, 2021, p. 189 ss. and its doubts on the internal procedures to produce outcomes by means of high tech mechanisms.

[2] See Basel Committee on Banking Supervision, *Prudential treatment of cryptoasset exposures*, December 2022.

[3] See ECB, *Report on a digital Euro*, October 2020 and Board of Governors of The Federal Reserve System, *Money and Payments: The U.S. Dollar in the Age of Digital Transformation*, January 2022

[4] The ECB hypothesized that the introduction of the digital Euro could affect the transmission of

2. For regulatory purposes, the assumption formulated by the ECB, according to which users can have access to the Digital Euro either directly or through the intervention of supervised intermediaries, is crucial. [5]

In this regard, the ECB's statement provides that the technological infrastructure and the relative interface set up by the intermediaries must, in any case, consider the nature of the Digital Euro as a liability of the central bank and prevent any form of creation of additional units of Digital Euro because of the intermediaries' fault. However, the possibility of the Digital Euro fueling the dynamics of scriptural money is not addressed, and it raises specific feasibility questions.

That being said, it should be noted that the proposal focuses on mechanisms, assuming that the Digital Euro could be provided through an account-based or a token-based instrument. [6] It is self-evident that, in the first case, the intermediary who keeps the records will be responsible for the proper circulation of the currency, whereas in the second case, responsibilities will remain limited to the transferor and the transferee. [7]

However, it is worth considering that the system requires a device in order to access a web-based service (e.g. computers, smartphones) or to immediately use the Digital Euro (e.g. smart-cards), whereby the on-line or off-line availability

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monetary policy and have a negative impact on financial stability, e.g. by challenging the banks' intermediation capacity and influencing risk-free interest rates. The same applies to its possible use as a form of investment and, thus, to the possible transformation of deposits (at commercial banks) into liabilities (of the central bank); see ECB, *Report on a digital Euro*, October 2020

[5] See ECB, *Report on a digital Euro*, cit., p. 26

[6] See ECB, *Report on a digital Euro*, cit., p. 29; see also Pellegrini, *Il diritto cybernetico nei riflessi sulla materia bancaria e finanziaria*, in VV.AA., *Liber amicorum Guido Alpa*, Padua, 2019, p. 351 ff.

[7] See art. 3, para 1, point 2, Proposal for MiCAR; see also Baskerville - Capriglione - Casalino, Impacts, Challenges and trends of Digital Transformation in the Banking Sector, on Law and Economics Yearly Review, 2020, p. 341 ff; Ammannati, *Regolare o non regolare, ovvero l'economia digitale tra 'Scilla e Cariddi*, in AA.VV., *I servizi pubblici. Vecchi problemi e nuove regole*, Torino, 2018, p. 101 ff.; Hondius, *The Protection of the Weak Party in a Harmonised European Contract Law: A Synthesis*, in *Journal of Consumer Policy*, 2004, p. 245 ff.; Miglionico, *Innovazione tecnologica e digitalizzazione dei rapporti finanziari*, in *Contr. e impr.*, 2019, p. 1376 ff.;

of the latter is left to the option of the developers. [8]

On a juridical basis, it has to be considered that - as will be detailed in the following paragraphs - the issuance of a full legal tender Digital Euro has to refer to the Eurosystem, so that the related infrastructure can be managed by the ESCB and the ECB. This interacts with the approaches that have been developed in the experience of virtual currencies to organise the underlying infrastructure, projected towards an either centralised or decentralised configuration. Thus, the alternative would be the registration of transactions either in a register kept by the ECB or in a plurality of registers kept by the eligible intermediaries.

As a whole, it seems clear that the innovations identified by the ECB for the design of the Digital Euro are related, on the one hand, to the currency and, on the other hand, to the related infrastructure. [9]

It is also clear that there is an option for a digital Euro that is (i) individually identifiable, as a result of cryptography, (ii) easily storable, as a result of its immateriality, and (iii) instantly transferable, as a result of its telematic nature. Assuming that offering the market an alternative to banknotes and coins represents an increase in operational possibilities (and, therefore, an opportunity for operators who can choose the most efficient medium), both the practicability of such a project in the Eurozone and the acceptability of the consequences that could be produced in the credit market need to be examined. [10]

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[8] See Mersch, Y., *Money and private currencies: Reflections on Libra. Speech by Member of the Executive Board of the ECB*, ESCB Legal Conference, Frankfurt am Main, 2 Settembre 2019

[9] See Olson M., *Logic of Collective Action: Public Goods and the Theory of Groups*, Harvard (UK), 1974 See also Rossi G., *Denaro e finanza, un bene pubblico*, in www.ilsole24ore.com, 18/11/2012; Ascarelli, *La moneta*, Padova, 1928; Savona, *La sovranità monetaria*, Roma, 1974; Stammati, *Moneta*, in *Enc. Dir.*, vol. XXVI, Milano, 1976; Capriglione, *Moneta*, in *Enc. dir.*, Milano, 1999, p. 747 ff.

[10] See Lemma, *Innovazione tecnologica e moneta*, in AA.VV., *Manuale di diritto dell'economia*, Padua, 2023, p. 375 whereby it is recalled Mersch, *An ECB digital currency – a flight of fancy?*, Speech by a Member of the Executive Board of the ECB and Vice-Chair of the Supervisory Board of the ECB, at the Consensus 2020 virtual conference, 11 May 2020.
See also Sepe, *Innovazione tecnologica, algoritmi e intelligenza artificiale nella prestazione dei servizi finanziari*, in *Rivista Trimestrale di Diritto dell'Economia*, 2021, supplement no. 3, p. 186 ff.; Rossano, *L'Intelligenza Artificiale: ruolo e responsabilità dell'uomo nei processi applicativi (alcune recenti proposte normative)*, *ibid*, p. 212 ff.

3. In moving towards the resolution of the questions raised above, it seems appropriate to begin with the identification of the relevant subject matter and, therefore, of the recipient element of monetary regulation. As we approach such identification, it appears evident that the European Treaties and the secondary regulation define, rather than the contents of the Euro, those of the Economic and Monetary Union (EMU), i.e. they regulate the phenomenon that the single currency allows to be implemented. It should be remembered that, prior to this regulatory option, there was the political decision to achieve the strengthening and convergence of the economies of the Member States as a result of establishment of a Union that would entail stability (see Preamble, E.U. Tr.). This was the case to place the Euro at the *center* of the economic and monetary system and take it as reference for the discipline corresponding to the relevant common policies. [11]

Therefore, in solving the questions as to the viability of the 'digital Euro' in the EMU, it must be premised that the legal datum prepares the regulation of the sector precisely by starting from the economic and monetary policy of the Union. Here comes into consideration the central role of the 'European System of Central Banks' (ESCB) with regard to the objective of price stability and the support of general economic policies in the Union, in accordance with the principle of an open market economy with free competition, fostering an efficient allocation of resources and respecting common principles (Art. 127(1) TFEU).

The tasks of the ESCB expressly relating to the definition and implementation of EMU monetary policy, and the promotion of the smooth operation of payment systems are significant in this respect (Art. 127(2) TEU). Nevertheless, the 'specific tasks' that the Council may entrust to the European Central Bank about policies concerning the prudential supervision of credit institutions and other financial institutions, excluding insurance undertakings (Art. 127(6) TFEU) are also relevant. It will be noted, in fact, that these rules are laid

[11] See art. 48, para. 3 e 6, T.U.E.

down based on the characteristics and peculiarities of European structure, hence a clear indication as to the scope of the rules to which the specified bodies (ESCB and ECB) must adhere in order to achieve a fair balance between the various interests embodied in the European money market.

The rules governing the rights of issuance - according to which the ECB has an 'exclusive right' to authorise the issuance of Euro 'banknotes', subject to the specification that 'the banknotes issued by the European Central Bank and the national central banks constitute the only banknotes with legal tender within the Union' (Art. 128(1) TFEU) - refer the approach chosen by the Member States. [12]

The level of detail chosen by the drafters of the Treaty on the Functioning of the EU is surprising, insofar as they identify the technical form of the medium to which the sovereign currency issuable by the ECB and the states that have adopted the Euro should be anchored (i.e. banknotes and coins). Indeed, it should not be overlooked that, at the time, the subject had not yet been minted matter of scriptural money of banking origin was well known, while the first bitcoin (which common opinion dates back to 2008-2009). [13]

However, this consideration does not allow to ignore the question whether the text of the treaty should be amended to include the right to issue digital money (along with the aforementioned banknotes and coins).

At this point in the analysis, it might seem appropriate to leave any assessment of the scope of Art. 128 TFEU to the Member States, whose representatives have consolidated the details of the text of the Treaty, without prejudice, however, to the ordinary or simplified revision procedure of the Treaties. It is self-evident that the intervention requested of the Member States concerns the specification of the agreement reached on the media chosen for the circulation of the Euro and, conversely, cannot be considered as a solicitation or instruction addressed to the ESCB or the ECB (which, moreover, are prohibited by

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[12] See art. 128, para 2, T.F.U.E.
[13] Let us recall Nakamoto, *Bitcoin: A Peer-to-Peer Electronic Cash System*, 31 October 2008, at www.bitcoin.org

Article 130 of the TFEU). [14]

On the contrary, the intention to promote the adoption of the digital support could lead to the evaluation of an alternative solution in a dynamic interpretation of the text of the Treaty and in an extensive interpretation of both the discipline established for the fulfilment of the tasks attributed to the ESCB (Art. 132 T.F.U.E.) and the provision of the ordinary legislative procedure (involving the European Parliament and the Council) to establish the measures necessary for the use of the euro as a single currency (Art. 133 T.F.U.E.). However, such a path would still lead to an asymmetry between the normative data of the Treaties (which would remain limited to banknotes and coins) and the operational form applied by the ECB (which would extend to digital, cryptographic and telematic representations). Hence, the danger of exposing the circulation of money to legal risks (or rather of a jurisprudential interpretation different from the one under consideration); a danger that appears incompatible with the security requirements distinctive of the internal capital market.

Consequently, the relevance of the interests suggests that monetary policies should be kept within the paradigma of the rule of law, considering in exclusionary terms any reference to soft law, consisting in principles, standards and rules freely communicated to the market and spontaneously adhered to by operators[15]identifies a regulatory system that is too labile to ensure the effectiveness of the choices made in such matter. [16]

From this perspective, it can be affirmed that - in the monetary sector, even

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[14] On this point, one must also consider the obligation assumed by each Member State to ensure that its domestic legislation is compliant with the Treaties and the Statute of the ESCB and the ECB. Therefore, in the event of the adoption of the digital Euro, the compliance of the regulation of obligations with the circulation of such a currency will have to be assessed and, therefore, the rules on solving effects, asset confusion, fungibility and, ultimately, the specifications that domestic law has adopted to ensure the reliability of the circulation of wealth and the quality of the currency.

[15] See Lemma, *«Soft law» e regolazione finanziaria*, cit., p. 600 ff. and Barreca, *Tutela sommaria ed effettività della giurisdizione*, in *Questione giustizia*, 2005, p. 1218 ff.; Dell'Acqua, *Principio di effettività e analisi preventiva delle norme*, in *Studi parlamentari e di politica costituzionale*, 2004, p. 43 ff.

[16] See Shaffer-Pollack, *Hard vs. Soft Law: Alternatives, Complements and Antagonists in International Governance*, in *Minnesota Law Review*, 2010, p. 706 ff.

more than in other areas of the capital market - extensive interpretations and a possible disarticulation of legal norms would undermine the relationship between the existence (theoretical validity) and force (practical effectiveness) of the digital Euro, especially when involved in soft law processes that should sanction the capacity (of an informal precept) to influence the dynamics of currency in the sector's legal context. [17]

4. In the light of the foregoing, it seems clear that the project for a digital Euro follows a rigid institutional structure, as it is anchored to Treaties that set out the essential elements of Economic and Monetary Union in such detail as clearly to recall the traditional supports of monetary circulation (i.e. banknotes and coins). However, it appears necessary to identify the essential elements of the new forms of operation based on the application of telematics and cryptography that concern, on the one hand, the methods of circulation of sovereign money and, on the other, the prospect of affirming 'alternative solutions' to sovereign money.

Indeed, for some time now, technology has permitted forms of circulation of money other than the physical delivery of banknotes and coins, also admitting the recording of monetary values on the registers of institutions in charge of issuing the relevant electronic records (i.e. electronic money) or the transmission of orders for the transfer of money deposited with intermediaries (i.e banking and payment services). At present it can be stated that 'there are in fact two types of money': the 'central bank money' and the 'money issued by private individuals'. [18]

We are however in the position to consider that these forms of circulation will be anchored to a new type of ICT flow, which will improve both the easiness of the transactions and their security (together with confidentiality protection and

[17] See Douzinas-Nead, *Law and the Image: the authority of art and the aestetich of law*, Chicago, 1999.

[18] See Capriglione, *La supervisione finanziaria dopo due crisi. Quali prospettive – discorso introduttivo*, in *Rivista Trimestrale di Diritto dell'Economia*, sup. no. 1/2022, p. 3 ff.; CAPRIGLIONE, Il sistema finanziario verso una transizione sostenibile, in *Rivista Trimestrale di Diritto dell'Economia*, 2021, I, p. 241 ff.

a reduction in transactional costs). This, by means of a decentralised and distributed design of the systems that support monetary circulation.

That said, in focusing on the legal perspective regarding the application of technological innovations to the market for sovereign money, both its rules of circulation and the other rules governing the use of money between individuals must be considered with reference to the rule of fungibility, the transfer of ownership in the case of deposits and other details in which certain aspects of sovereign money that enable the credit industry to function, such as the mechanism of deposit multiplication, are emphasised.

With reference to the project for a digital Euro, in fact, the options underlying the telematic circulation system and encryption design are central, as well as the regulatory choices that will give content to the agreements between individuals (who will accept the telematic transfer modalities of sovereign currencies, the rights attached to them and the related holding and deposit rules).[19]

Therefore, design and content are the elements on which the applicative results of technological innovation are embedded, with the effect of activating process innovations (about the circulation of money and other means of payment) and product innovations (with regard to cryptos and digital sovereign money). If we consider it carefully, these innovations appear to be destined to influence the circulation of money use and, therefore, the capital market (namely, the banking industry). [20]

In the twentieth century, sovereign states ensured the security of circulation and the quality of the currency, which - often - was a reflection of the prospects and potential for growth of the national economy, its competitiveness,

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[19] See Lener, *Il paradigma dei settori regolati e la democrazia dell'algoritmo. Note introduttive*, in *Riv. dir. banc.*, 2020, p. 193 ff.; Lucantoni, *L'high frequency trading nel prisma della vigilanza algoritmica del mercato Analisi giuridica dell'economia*, 2019, p. 297 ff.

[20] See Capriglione, *La supervisione finanziaria dopo due crisi. Quali prospettive – discorso introduttivo*, in *Rivista Trimestrale di Diritto dell'Economia*, sup. no. 1/2022, p. 3 ff.

and the credit or debt position of the country vis-à-vis foreign countries. [21] Indeed, the currency - and its credibility - was linked, from a juridical point of view, to the function of extinguishing pecuniary obligations, without prejudice to the general provision of domestic laws to provide for the acceptance of what was legal tender in the state at the time of payment and for its nominal value.

Today, it is clear that operators have accepted the shift from the physical delivery of banknotes and coins to the circulation of both banking orders of payments (as a form of circulation without cash settlement, but triggered by accounting entries recorded by the banks) and electronic money (as an electronically stored monetary value, represented by a credit vis-à-vis the issuer, which can be used to make payment transactions through specific circuits after the use of certain services).[22] Thus, for the purposes of this analysis, it seems necessary to focus on commercial bank money and the instrumental relationship between its creation and the smooth functioning of the real economy,[23] mediated by the credit function that banks fulfil through the mechanism of deposit multiplier. [24]

To this end come into consideration the differences between the physical availability of sovereign money and the scriptural alternatives (through the intermediation of a bank or a electronic money institution or individuals who become counterparties to financial instruments entitling them to money at a given maturity, which is, moreover, continuously renewable at the desired time). [25]

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[21] See Banca d'Italia, *Considerazioni Finali del Governatore della Banca d'Italia, Assemblea Generale Ordinaria Dei Partecipanti, tenuta in Roma il 31 Maggio 1994*

[22] See Savona, *The economics of cryptocurrency*, *lectio magistralis* at University of Cagliari, 30 September 2021 and Savona, *Finanza dei derivati*, in Enciclopedia Treccani del Novecento, III, 2004; Savona, *Prefazione*, in Oldani, *I derivati finanziari*, Milano, 2010, p. 8; Masera, *Elementi per una rilettura dell'articolo di Paolo Sylos Labini: "Inflazione, disoccupazione e banca centrale: temi per una riconsiderazione critica"*, in *Moneta e Credito*, March 2016, p. 121 ff.

[23] Provided that commercial banks operate under several conflict of interests, see SACCO GINEVRI, Il conflitto di interessi nella gestione delle banche, Bari, 2016, p. 48 ff.

[24] See Regulation (CE) no. 2531/98 of the Council and Regulation (UE) 2021/378 of the European Central Bank. See also Brescia Morra, *Le forme della vigilanza*, in AA.VV., *Manuale di diritto bancario e finanziario*, Padova, 2019, p. 177 ff.

[25] See Sabbatelli, *tutela del risparmio e garanzia dei depositi*, Padova, 2012 and Troiano, *I soggetti operanti nel settore finanziario*, in AA.VV., *Manuale di diritto bancario e finanziario*, Padova, 2019

Indeed, the difference lies in the nature of the counterparty called to fulfil the commitments that give content to the two notions of currency (i.e. sovereign or scriptural). In other words, the alternatives to sovereign money are based on the exercise of private autonomy by the parties (i.e. banks for scriptural money, electronic money institutions, companies and intermediaries for financial instruments and derivatives). It should, in fact, be noted that banknotes and coins are the counterpart of a liability of the relevant central bank, whereas scriptural money corresponds to a debt of a credit institution or other intermediary (and, therefore, of a private entity). [26]

Clearly, therefore, operational and systemic risks can be analyzed with reference to the preference of the debtor counterparty. There is no doubt that the different nature of the ecb (i.e. public) and of a credit institution (i.e. private) implies a preference for the first one (in the selection of the possible obligor to pay the corresponding value of the reference liability). [27]

On the other hand, the assessment of the operational risk relates to the concrete configuration of internal processes, human resources and technological systems (net of the incidence of external events), so it is worth conducting a concrete analysis of the organisational structure adopted by the counterparty (without, however, disregarding the consideration that the ECB, in the exercise of its supervisory functions, has access to all information on the structure of the credit institutions and, therefore, can collect and adopt the best practices related to services for the circulation of the digital Euro). [28]

As for the exposure to systemic risk, it must be considered that a situation of market stress triggering central bank default is considerably smaller than the

[26] See Savona - Maccario, *On the Relation between Money and Derivatives and its Application to the International Monetary Market*, in *Open Economies Review*, 1998, p. 637 ff.
[27] See Ciocca, *La banca che manca. Le banche centrali, l'Europa, l'instabilità del capitalismo*, Roma, 2014
[28] See Angelini, *La recente proposta della Commissione europea di modifica delle regole prudenziali per le banche: un quadro d'insieme e una prima valutazione*, Roma, 19 January 2022,

possibility of the same situation resulting in default by a credit institution. [29]

Accordingly, it can be concluded that the project for a digital Euro introduces elements of competition between the ECB and commercial banks, since the holding of the digital Euro is an alternative 'store of value' function to that performed by bank deposits. It is self-evident that this function is analogous to that which banknotes and coins can perform; however, it should be considered that the digital support allows an easier accumulation, storage and use that the physical support does not allow either ex se and ex lege (due to recent measures to limit the use of cash). Therefore, the bank deposit will be unattractive to risk-averse savers and to those who make extensive use of telematic payments (and are not interested in a remuneration for the money used for this purpose), whereas - conversely - it may be attractive to clients inclined to receive - from the banks - a remuneration (obviously to an extent that would remunerate the risks connected to this credit position, which are higher than those associated with an ECB liability).

What is expected, therefore, is an increase in the propensity of customers to remain owners of the sovereign currency (by holding the digital Euro), with a substitution effect between the digital Euro and bank deposits in customers' portfolios. Hence, there will be a possible difficulty in banking collection of savings and, therefore, an increase in the relative cost or a reduction in the total amount of bank deposits. In the first case, there would be an increase in the rates charged for the granting of loans (to cover the cost of funding) and, in the second case, a reduction in the supply of credit (due to the reduction in the collection).

All the above leads to expect also the possibility of a credit crunch that is not compatible with the waves of crises that have plagued the markets since the start of the new millennium and with the current difficult conditions of the real economy posed by the SARS-COVID-19 epidemic and the war contingencies raging on European borders.

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[29] See Masicantonio – Zaghini, *Systemic risk and systemic importance measures during the crisis*, December 2017, p. 5 ff.

On this point, it should be noted that the remedy envisaged by the ECB consists, on the one hand, in the introduction of limits to the amount of digital Euro that an individual user can hold and, on the other, in the provision of disincentives that make this support less attractive than the traditional ones. [30]

Leaving aside any consideration of the problems posed by the setting of quantitative thresholds and the selection of incentives or disincentives (and the difficulty in assessing their efficiency), a clear identification of the benefits of the digital support (as compared to those of banknotes and coins) and of the systemic effects of its adoption (explored in more detail in the following section) seems necessary. Then, such identification could be conducted by the ECB and made available to policy makers, to assess the introduction of the digital Euro with regard to the systemic interest in such an innovation. Therefore, what appears necessary is the completion of the project for a digital Euro formulated by the ECB with elements that could allow intermediaries to use this instrument within the credit circuits, so to allow this innovation to be placed at the service of the banking industry, instead of driving credit disintermediation. [31]

5. Explicit in the ECB's project for a digital Euro is the intention to innovate the circulation of money and the awareness that this innovation will impact the functioning of monetary dynamics, credit circuits, payment systems and other activities involved in the production, movement and accumulation of wealth.[32]

It seems clear from the above that such innovation can, on the one hand, produce new types of risks and, on the other, lead to the manifestation of traditional risks in different ways. Therefore, it should be considered whether policy makers should move towards the adoption of rules to allow the introduction of the digital Euro in ways that improve the circulation of wealth,

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[30] See ECB, *Report on a Digital* Euro, cit., p. 28

[31] See Lemma, *Innovazione digitale e moneta*, in AA.VV., *Corso di diritto pubblico dell'economia*, Padova, 2023, p. 375 ff.

[32] Cfr. ECB, *Report on a Digital* Euro, cit., Section 3; on the current attitude of ECB, see CAPRIGLIONE - SEPE, La spinta della Banca Centrale Europea per la grande dimensione, in IlSole24Ore on 7 April 2021.

without the digital Euro competing with the collection of savings.

The foregoing leads to recalling the rule of the fungibility of money, according to which the depositor may fulfil the obligation to return money by means of an equal amount (even if performed by physically delivering other banknotes or coins). It can be understood how this regulatory option is at the basis of the credit dynamics, which - obviously - proceed to the accounting registration of the banknotes and coins physically deposited by the customer and activate a sequence of accounting operations aimed at circulating the relative wealth up to a cash withdrawal operation.

As a result of encryption, the deposit of a digital Euro does not compromise its simple identification and segregation from the depositary's assets. [33]

This facility might suggest that the digital Euro should not be subject to the fungibility rule, but to the segregation rule envisaged for securities. However, it seems clear that while such an option would have the effect of giving full play to the possibilities offered by technology, it would also reduce the possibility for banks to build up their own liabilities (since banks would not make themselves debtors of the corresponding sum of money, but depositors of the digital Euro). This could therefore prevent the deposit multiplier mechanism from being activated. [34]

After all, it appears necessary for intermediaries to be able to retain the ability to use the deposit multiplier mechanism to support their lending activities, as it allows the intermediary's operating costs to be spread over a larger volume of credit than the one of direct deposits (as permitted by the current banking supervision rules); this, with obvious positive effects on the functioning of the

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[33] In other words, the forms of dematerialisation envisaged for the digital Euro make it easy to preserve the traceability of each coin to its owner, as is the case - for instance - with the deposit of securities regulated by Article 1838 of the Italian Civil Code

[34] See Heider – Leonello, *Monetary Policy in a Low Interest Rate Environment: Reversal Rate and Risk-Taking*, in *ECB Working Paper No. 2021/2593*, 2021, p. 16 who writes that “this implies that banks with different equity multipliers may provide different lending volumes, despite having the same level of equity”.

credit sector. [35]

Obviously, a preference of policy makers for the above-mentioned solution would require a disciplinary intervention dedicated to the qualification of the type of money that can be distributed by the banks, provided that the choice between scriptural money, banknotes and coins or digital Euro is now deferred to the market

It is no coincidence that the Federal Reserve has highlighted the risk that the introduction of a CBDC could have negative effects, particularly on the structure of the US financial system, by altering the roles and responsibilities of the private sector and the central bank. This is because, on the first side, the Fed notes that US banks currently rely on deposits to fund their lending and, on the other, it notes the possibility of a substitution effect (between CBDC and scriptural money). The aggregate amount of deposits in the banking system would shrink, which could in turn reduce the supply of credit or increase its cost.

The digital Euro has accessibility and security features that may appeal to risk-averse users. Linked to this is the risk - highlighted by the Federal Reserve - that the possibility of rapidly converting deposits at commercial banks into CBDCs could make bank runs more likely or more severe; this would have obvious effects both on the dynamics of banking crises and on the effectiveness of existing early intervention or crisis management tools. [36]

Hence, a preliminary conclusion refers to the need for continuity between ideas, values and principles that are accepted at a given historical moment and the legal rules that the legal system provides for the functioning of certain goods (i.e. money), activities (i.e. the granting of credit) and relations (between market operators, such as the deposit of money and financing). Thus, the regulatory options pertaining to the innovation of sovereign money cannot be disassociated from the choices regarding the functioning of the banking industry. Hence, the

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[35] See Figuera, Moltiplicatore dei depositi e offerta di moneta: elementi per una riflessione critica, in Storia del pensiero economico, 2005, p. 39 ff.

[36]; See Board of Governors of the Federal Reserve System, Money and Payments: The U.S. Dollar in the Age of Digital Transformation, Gennaio 2022, p. 21 ff.

need for the sovereign authority to indicate the policy preferences that can guide the regulator in the concrete configuration of the digital Euro and in the revision of the other rules governing private relationships with reference to the use of legal tender currency.

6. Finally, dwelling on the regulation that should ensure the safety of the digital Euro, it should be pointed out that cryptographic and telematic innovations set the basis for a new paradigm of wealth circulation with solving effects, through algorithmic solutions, DLT technologies and digital media.[37]

Since monetary policy became part of the Treaties, European regulation has been entrusted with the task of defining the subjective legal positions and relations of citizens with money. Although the ESCB and the ECB have taken on complex tasks, designed to safeguard the functioning of the internal market, uncertainties are felt in the face of technological challenges, the absence of a clear political guideline underpinning the choices envisaged is noted. This triggers a palpable concern about the effects of the proposed solutions. This is witnessed by ECB's considerations on the possibility of introducing operational limits to contain the direct effects of the introduction of the digital Euro (such as quantitative thresholds or the prospect of certain disincentives to holding it[38]). [39]

Not surprisingly, a specific question has been raised as to whether a digital

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[37] The relevance of the hypothesised rules to ensure digital operational resilience for the financial sector (so-called DORA) is noted. It is intended to prevent financial instability arising from the materialisation of specific information and communication technology (ICT) risks; see *Proposal for a Regulation on a pilot regime for market infrastructures based on distributed ledger technology*, *Brussels*, 24.9.2020 COM(2020) 594 final 2020/0267 (COD), p. 6
Significant in this regard is the introduction of a 'new status' for DLT market infrastructures to support the development of DLT-based cryptocurrencies; see *Recital* no. 6 of the *Proposal for DLT Pilot Regime*; and this goes with obvious effects on the operation of platforms in the sector; see Lemma, *Le piattaforme nel mercato dei capitali*, in AA.VV., *L'attività delle banche*, 2020, p. 81 ff..

[38] See ECB, *Report on a Digital* Euro, cit., p. 17

[39]Moreover, the need for an intervention that takes care of the general interests seems evident, where the introduction of the digital Euro would go beyond the text of the Treaties, which does not mention additional supports for the single currency other than banknotes and coins. This would lead to an operational reality that, not responding to the above-mentioned text, would be exposed to the interpretations of the courts and, therefore, would bring unacceptable levels of uncertainty to the capital market.

Euro can and should have the same legal tender status as banknotes and coins, since such a disintermediation could be economically inefficient. [40]

In the light of the above, it seems unquestionable that the confidence in the quality of money and in the security of its circulation is an essential element of an advanced economy, just as the regulatory option of entrusting the ECB with the task of preserving this confidence by promoting monetary stability, the sound and prudent management of intermediaries and an efficient payments system is unequivocal. However, doubts remain as to whether the European central bank can pursue innovative support for sovereign money (additional to that indicated in the Treaties). This is because such an innovation could lead to effects of a general nature that are not confined to the money market but affect the general interests and rights of citizens (which need to be discussed in the context of broad public support by the competent bodies of the Union and the Member States).

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[40] See Mersch, *An ECB digital currency – a flight of fancy?*, Speech by a Member of the Executive Board of the ECB and Vice-Chair of the Supervisory Board of the ECB, at the Consensus 2020 virtual conference, 11 May 2020.

WEB 1.0, 2.0, 3.0; INFOSPHERE; METAVERSE: AN OVERVIEW. MONETARY, FINANCIAL, SOCIETAL AND GEOPOLITICAL TRANSFORMATION CUSPS

Rainer Masera *

ABSTRACT: *This paper offers a critical survey of the three overlapping domains of the phygital world: the Web, the Infosphere, the Metaverse, and their innovative components – blockchain, distributed ledger technology, cryptoassets and cryptocurrencies. This requires a (bold) attempt to synthetize the main features of the three rapidly evolving spheres. Digitization is the fundamental driver of change in today's societies, economies and financial systems. Two areas are of special importance: money and geopolitics. Political and regulators' surveillance shape the digitization process, notably in the areas of cryptos, finance and defence. The phygital domains exhibit similar features but are still well distinct. The prospect of a rapid convergence, as a result of shared digital advances and of objective commonalities, may prove deceptive. More realistically, tipping points or systemic fractures - notably in terms of money, finance and geopolitical competition - should be avoided. The road to promoting constructive convergence, fostering use of digital advances and enacting appropriate internationally coordinated regulatory frameworks should be maintained open.*

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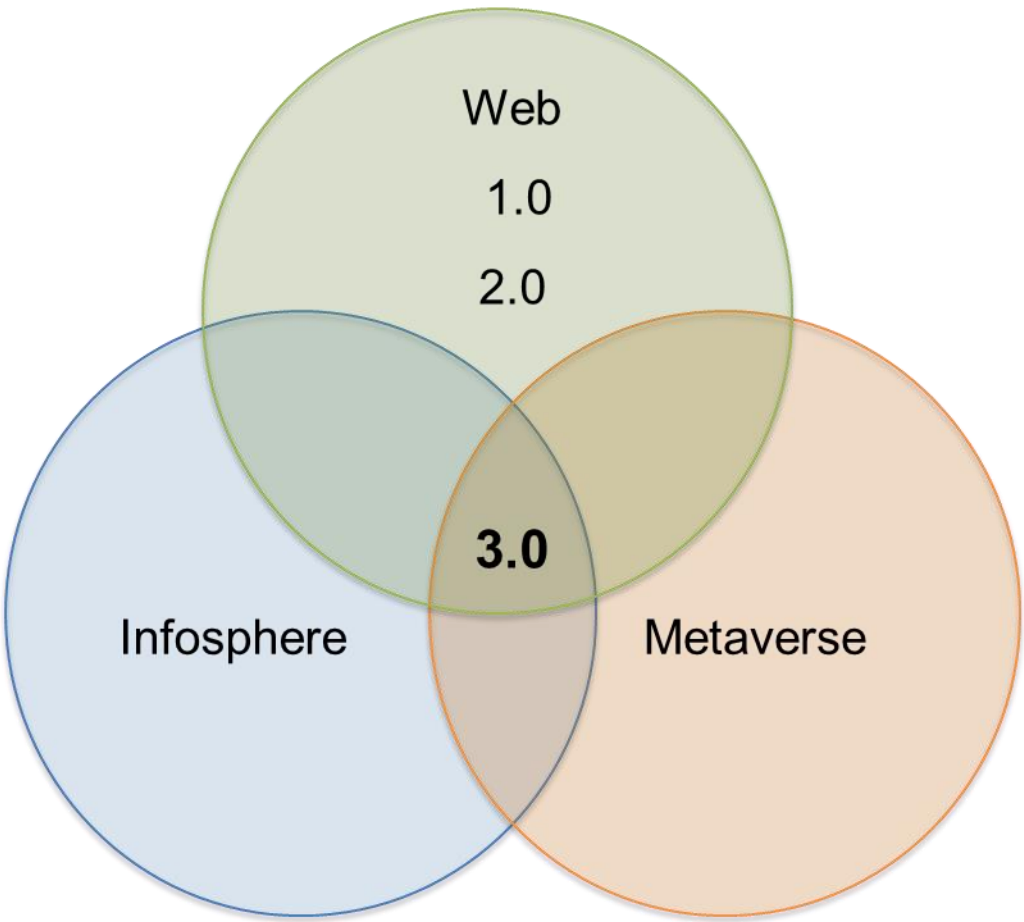
Infosphere. – 4. The Metaverse. – 5.Global permeating digitalisation processes and (supra)national political solutions: convergence, fragmentation or fracturing? – 5.1. New world-wide challenges. – 5.2 The morphing of money. – 5.3. The new frontiers of digital defence/warfare. – 6. Concluding thoughts.

1. Three overlapping domains epitomise the key declinations of the new technological/phygital world, as sketched graphically in Chart 1. The Triad is delineated in the following paragraphs in terms of a holistic framework, with a view to identifying and analysing the complex network interactions.

Chart 1 – The three key phygital domains



Source: Author

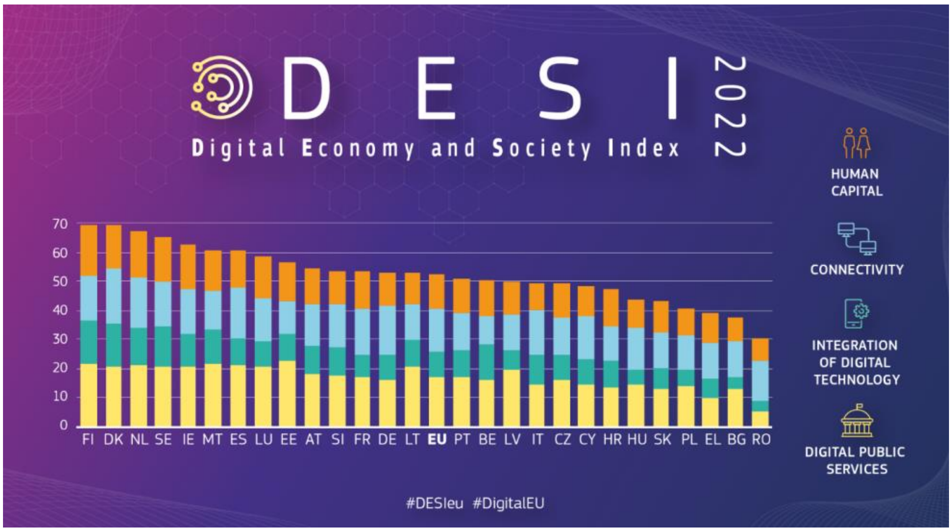
For simplicity of presentation the three spherical dynamic domains are visualized by means of a Venn two-dimension mechanical diagram (VENN, *On the Diagrammatic and Mechanical Representation of Propositions and Reasonings,* Philosophical Magazine and Journal of Sciences, 1880).

Digitisation (the process of converting information from a physical into a digital format) is the fundamental driver of change in modern societies and economies[1]. Beyond technological advances, digitisation depends on political, societal and economic decisions[2] . The overall reshaping of human knowledge, society, philosophy, law and sciences resulting from the phygital domains has been analysed by Floridi[3]. The digital new deal and the implications for natural law are examined by Genghini[4]. Political and regulators' surveillance frameworks shape the digitalization transformation processes (leveraging digitisation with a view to improving business/operational processes and containing risks), notably in the areas of cryptos, finance, money and business.

The EU has taken an active/direct interest in digital progress, as is evident in the NGEU and the national RRPs[5]. The monitoring of digital advances in Member States since 2014 makes reference to a comprehensive Digital Economy and Society Index (DESI, 2022, Chart 2).

Chart 2 – DESI 2022

[1] As was critically surveyed in the CESIFO Conference on the economics of digitization, Munich, 2022.
[2] See MUSIK and BOGNER (eds.), *Digitalization and Society*, Wiesbaden, 2019.
[3] See FLORIDI, *The Fourth Revolution: How the Infosphere is Reshaping Human Reality*, Oxford, 2014.
[4] See GENGHINI, *Digital New Deal*, Milano, 2021.
[5] See PAGANETTO (a cura di), *Equità e sviluppo*, Roma, 2022.



Source: https://digital-strategy.ec.europa.eu/en/policies/desi

The key areas of DESI are: human capital, connectivity, integration of digital technologies, digital public services. Digital advances in money and payments are explainable by the fact that monetary and capital transfers, domestically and internationally, employ payments technologies which have become backwards and inefficient[6]. Evidence of this in the EU is offered by the EC itself[7].

At global level the cyber domains have acquired a key role in the affirmation of the evolving concept of digital sovereignty[8] with the central role of Artificial Intelligence (AI, Box 1 below). As will be indicated in this essay, inevitable tensions emerge between, on the one hand, the attempt to create mutual benefits and cooperation inherent in the cyber sphere, and, on the other hand, the implicit zero-sum game of using technological advances as a tool for the interests of sovereign states. The divide is especially acute in the confrontation between democratic and authoritarian countries and in the fields of defence/warfare, notably with reference to the security of national infrastructures[9].

[6] See MASERA, *Nuovi rischi e regolazione delle criptovalute*, Roma, 2022.
[7] See EC, *Legislative proposal on instant payments*, Bruxelles, 2022.
[8] For an investigation and systematization of these issues reference can be made to Pohle and Thiel (2020) and to Cedric Larsen (2022).
[9] A path-breaking analysis of the strategic relevance of these cyber defence problems was developed – and made publicly available – in the United States (see OLAGBEMIRO, *Cyberspace as a complex adaptive system and the policy and operational implications for cyber warfare*, School of Advanced Military Studies, 2014).

2.

2.1. A key step in the advance of digital technology was the creation of the web within a US Government Research Project Agency (Advanced Research Projects Agency, ARPA). ARPA was created in 1958, largely as a response to the Sputnik launch on October 4, 1957. In the late 1960s the Arpanet network was the answer to the risk of the Soviet Union using jet bombers to launch surprise nuclear attacks.

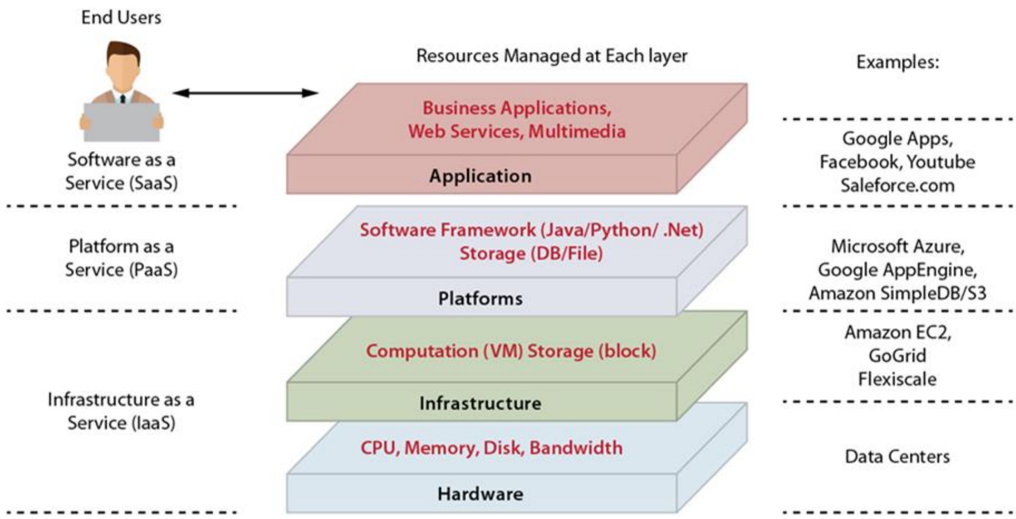
The term Internet was adopted in 1983 with the enactment of the TCP/IP (Transmission Control/Internet Protocols). The two protocols and the data transmission modes allowed the standardization of the transfer of data between network nodes. Corresponding processes were of distributed nature. ARPA was later renamed as DARPA (Defence); the name reverted subsequently to ARPA, but the D was later reinstated. The name changes underline the intertwining of defence drivers and applied research goals.

The successive developments of Internet and the WWW are related to the work done within the CERN (Conseil Européen pour la Recherche Nucléaire) in Genève. ARPA and CERN agreed to allow public use of the research and technologies developed in this area: on April 30 1993, following proposals by scientist Tim Berners-Lee, the WWW software was put in the public domain[10].

2.2. Web 1.0 - read only, connecting information. Web 2.0 - readable and writable, user content; cloud computing[11]; cloud as – a – service architecture (Chart 3).

[10] CERN, *A short history of the Web*, Geneva, 2022.
[11] See CHELLAPPA, *Intermediaries in Cloud-Computing: a New Computing Paradigm*, Dallas, 1997.

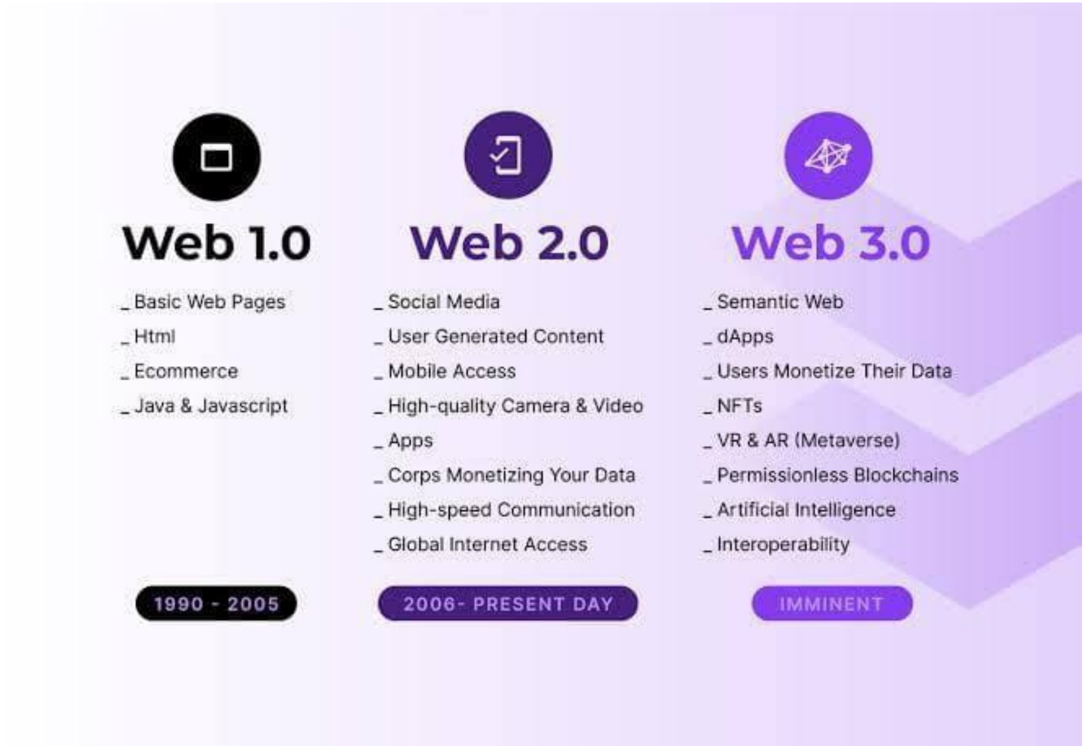
Chart 3 – Cloud Computing Architecture



Source: Mishra (2014)

Web 3.0 - read-write-interact, blockchain, encryption, cryptos, metaverse, interaction, connection, security, cloud 3. Web 3.0 represents a digital realm where machines communicate with other machines and users. AI represents the cognitive layer. Charts 4, 5 and 6 below summarize the three Web iterations.

Chart 4 – The Web evolution: main steps



Source: Heera Jat, Btech in Civil Engineering, National Institute of Technology, 2022

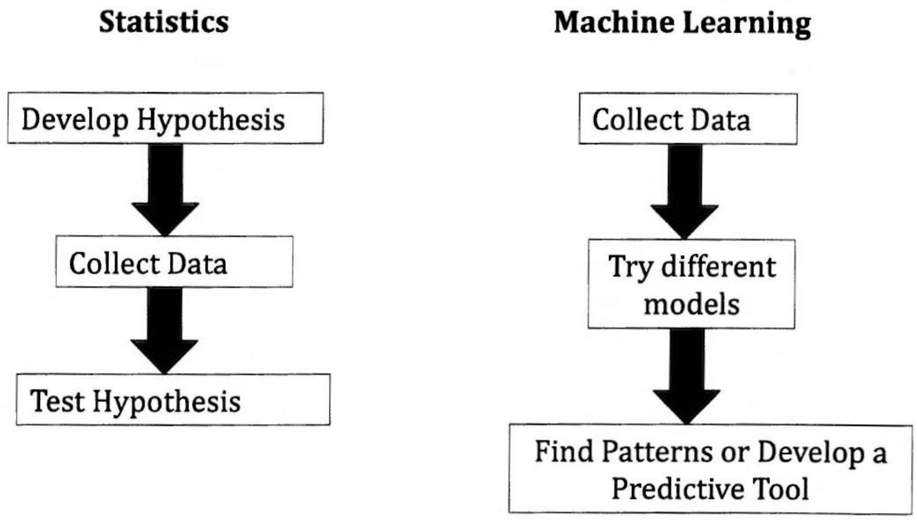
Chart 5 – The Web market developments

	Web 1.0 Product-centric	Web 2.0 Customer-oriented	Web 3.0 Value-driven
Objective	Sell products	Satisfy and retain the consumers	Make the world a better place
Enabling Forces	Industrial Revolution	Information Technology	Social Media
How companies see the market	Mass Buyers with Physical Needs	Smarter Consumer with Mind and Heart	Whole Human with Mind, Heart, and Spirit
Key marketing concept	Product development	Differentiation	Values
Company marketing guidelines	Product specification	Corporate and Product Positioning	Corporate , Vision, Values
Value propositions	Functional	Functional and Emotional	Functional, Emotional, and Spiritual
Interaction with consumers	One-to-Many Transaction	One-to-One Relationship	Many-to-Many Collaboration

Source: Web Marketing / Federica Brancale

https://www.themarketingfreaks.com/2014/02/web-1-0-web-2-0-e-web-3-0/

Chart 6 - Methodologies used by machine learning and statistics



Source: Hull 2021

Chart 6 identifies key research methodological issues which run through the entire cyberspace and the application of AI. The social science approach (hypothesis testing) can be contrasted with the engineering approach (proof by construction). Hull underlines the fundamental changes in AI/ML-based credit scoring/underwriting processes in the financial area[12].

3.

3.1. CryptoCurrencies (CC)[13] and, more generally, CryptoAssets (CA) represent a complex manifestation of the integration between digital innovation, information technology, statistics, economics and finance (Box 1).

[12] See HULL, *Machine Learning in Business*, Poland, 2021.

[13] A CC is the digital asset issued outright by the Distributed Ledger Technology (DLT) protocol (see Blockchain, Box 1 below).

Box 1 – The evolving/emerging technologies of the phygital domains

Fundamental Building Blocks

Artificial Intelligence (AI) – covers the field of intelligence development by machines. AI researchers have adopted a wide array of applications to foster this goal: notably, artificial neural networks and advanced developments of statistics, probability and economics[14].

Machine Learning (ML) – a subset of AI that provides digital systems the capability to automatically learn and improve from experience (see also Chart 6).

Blockchain – a Blockchain stores information in digital format. It is a distributed database (Ledger), shared among the nodes of a computer network. The so-called Blockchain trilemma identifies and analyzes the difficult challenges of ensuring the simultaneous achievement of decentralization security and scalability. Blockchain technology is characterized by consensus algorithms. The two most important examples are the Proof of Work (PoW) and the Proof of Stake (PoS). PoW has met recently considerable criticisms (e.g. in Sweden and in China) because of its very high computer use and energy consumption. At the other extreme, El Salvador decided in September 2021 to adopt the Bitcoin as a parallel legal currency, and to attempt to resort to "Volcano" bonds, based on geothermal energy. This was and is in the face of strong warnings to the contrary from the IMF. The links between Cryptos and Blockchain are explored in Library of Congress[15]. See also Par. III below.

Big Data – extremely large data sets/structures are analyzed computationally to unveil patterns and trends, particularly with reference to human actions.

IoT – the concept of Internet of Things identifies the network of connected digital devices and the technologies that enable – via internet – their communications/interactions, between themselves and the Cloud (*smart* cars, homes, cities, industries, research centers, logistics/supply chains…).

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[14] See RUSSELL and NORVIG, *Artificial Intelligence, a Modern Approach*, New Jersey, 2021.

[15] See LIBRARY OF CONGRESS, *Cryptocurrencies and Blockchain Technology*, Washington D.C., 2022.

5 G – 5th Generation global mobile network, designed to connect people and things (see IoT).

Tokenization – the digital process of replacing sensitive data by surrogate values, thereby creating digital assets. Tokenization converts – using a software programme – ownership rights over an asset into a digital token. Digital assets are stored on a blockchain which uses distributed ledger technologies (see Blockchain). Two functions of tokenization can be singled out. On the one hand it establishes ownership, since only the owner of the private key can reverse the encryption of the item tokenized. On the other hand, it crystalizes the (text) content of the token, since only the exact original content (in combination with the public key) can produce the hash in question: in this way the tokenized content (whether it is a transaction, a contract, a link to an NFT, see below, an image …) is permanently defined and preserved.

Non-Fungible Tokens (NFTs) – cryptographic assets based on blockchain technology. The tokens cannot be exchanged or traded like CAs or CCs. They represent certificates of ownership that exist on the blockchain and are generated via CCs. NFTs usually represent unique internet collectibles, with a large number of applications in Decentralized Finance (DeFi, where NFTs are used as collateral) and in the Metaverse.

Soul Based Tokens (SBTs) – are a new area of crypto – beyond DeFi and NFTs – which is evolving from simple cookies. They represent digital identity tokens that track persons to help create a permanent identity and represent a pillar of Decentralized Societies (see below).

Decentralization – digital process by which the activities of an organization are distributed away from a central authority/location to a decentralized network.

Decentralized Society (DeSoc) – defines a co-determined sociality where Souls and community interact[16].

[16] For an exploration of this novel crypto environment see GLEN WEYL et al., *Decentralized Society: Finding Web3's Soul,* SSRN, May 2022.

Openness – the enabling of protocols to allow controlled intercommunication of computer systems.

Cloud 3 – technological and infrastructure advances aimed at building multiplex broadband networks. Software–as–a–service models allow the user to adopt a multiplatform paradigm, also for 3 D applications.

3 D – spatial computing: digitalization of time and space into 3 D worlds of information and knowledge.

Virtual Reality (VR) – design and implementation of computer-generated artificial environments. The digital 3D world is entered via a VR headset and, in general, an Avatar twin (Par. IV).

Augmented Reality (AR) – sensory information through VR headsets, glasses or smartphones, creating an integration of digital information with the user's environment (Par. IV).

Source: Author

The basis of CA is represented by two only apparently contradictory phenomena. Cryptography - which should ensure the security of the algorithms – and Distributed Ledger Technologies (DLT) - of which Bitcoin is the most important platform - do not have a centralised data base. They ensure with a high level of confidence against cyber-attacks. At the same time, cryptos and DLTs should be harnessed – with appropriate regulation – to contain vulnerabilities (which might become systemic), to limit speculation, to satisfy external and internal transparency standards and to prevent their use in the conduct of criminal activities[17].

3.2. The nature of cryptos has been under strong debate. In 2019 Jay Clayton –

[17] See FSB, *Assessment of Risks to Financial Stability from Crypto-assets*, fsb@fsb.org, 2022 and LEMMA, *La regolazione delle cryptovalute tra trasparenza e stabilità*, Fondazione De Gasperi, Roma, 2022.
A critical survey of DLTs and Cryptos is presented by BANCA D'ITALIA, *Communication on Decentralized Technology in Finance and Crypto-assets*, Rome, 2022.

the President of the SEC – maintained that CCs were moneys, not securities (or assets)[18]. In 2021 Gary Gensler - who had become the new President of the SEC – maintained that CCs were securities/physical assets and should therefore be closely regulated, because they fulfill only partially and imperfectly the functions of money: their wide use could therefore create systemic risk[19]. President Joe Biden in an Executive Order issued in March 2022[20] left the question open and entrusted to Government Agencies to respond[21].

In September 2022 Caroline Pham - Commissioner of the Commodity Futures Trading Commission – expressed a strong leaning towards a third approach: certain cryptos may have a "real" character. They would be "things" or "commodities"[22]. The panorama is made even more complex because of the crisis of CCs since end-2021, which is reshaping the industry, and the prospect of issue of Central Bank Digital Currencies (CBDC) (Chart 7)[23].

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[18] See SHARMA, *SEC Chair Says Bitcoin is not a Security*, Investopedia, June 25, 2019.

[19] See SEC, *SEC Nearly Doubles Size of Enforcement's Crypto Assets and Cyber Unit,* Washington D.C., 2022.

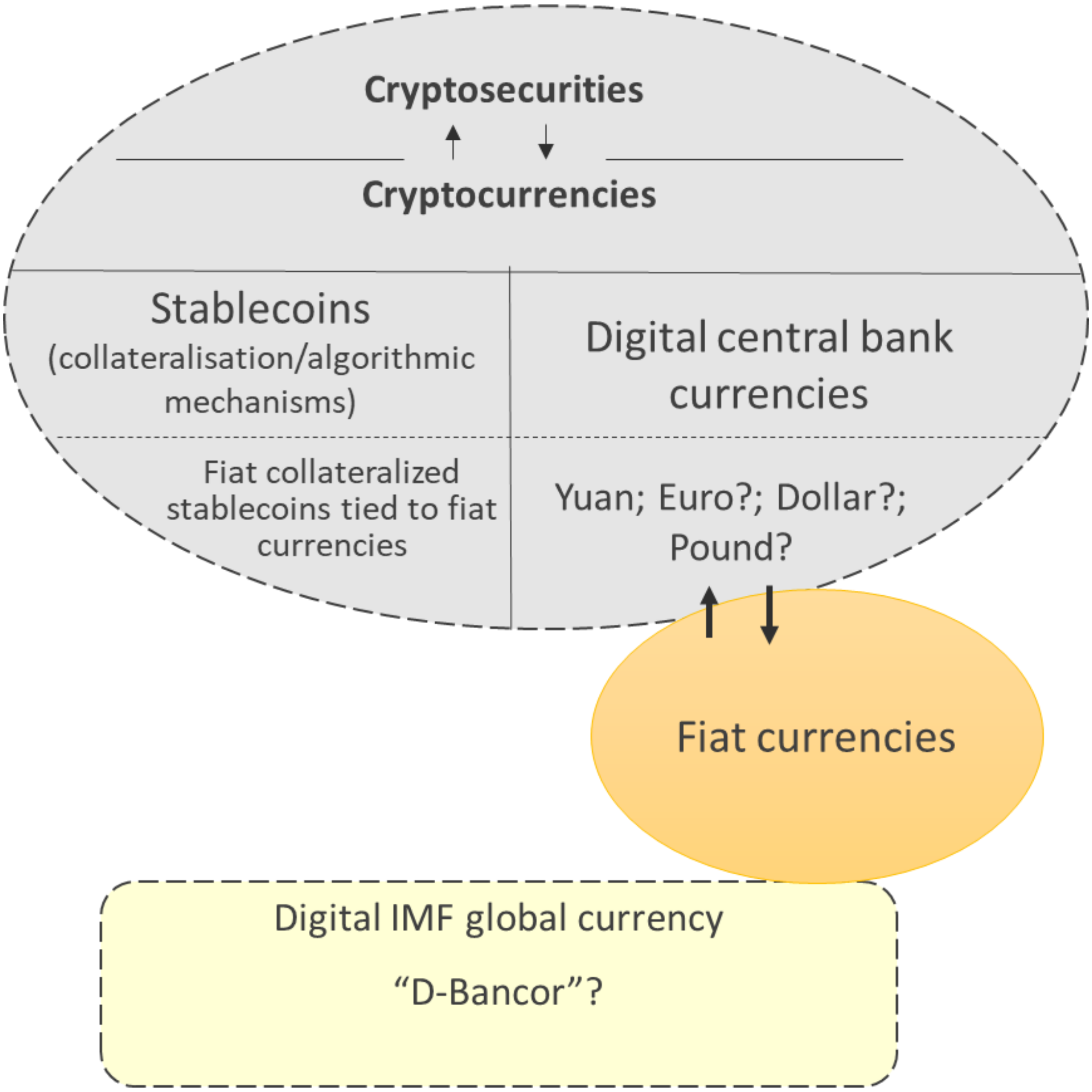
[20] See BIDEN, *Executive Order on Ensuring Responsible Development of Digital Assets,* Washington D.C., 2022.

[21] See also MASSAD and JACKSON, *How to Improve Regulation of Crypto Today – Without Congressional Action – and Make the Industry Pay For It*, Washington D.C., 2022.

[22] See PHAM, *Money and Life, the Metaverse, and Everything,* Prague, 2022 and Idem, *Lecture,* Consob and Luiss, Rome 2022.

[23] An overall compelling analysis of the recent development in crypto finance and the new technologies in central bank digital money is offered by PANETTA, *Crypto dominos: the bursting crypto bubbles and the destiny pf digital finance,* London, 2022.

Chart 7 - CryptoAssets, CryptoCurrencies and Fiat currencies



Source: Author

Cryptos are a fundamental component of the Cyberspace (CS) and of the Infosphere (IS)[24]. Savona was also one of the first regulators to warn about the intrinsic weaknesses and the systemic risks of cryptocurrencies and the need for rigorous surveillance, but his well-documented arguments went largely unheeded[25].

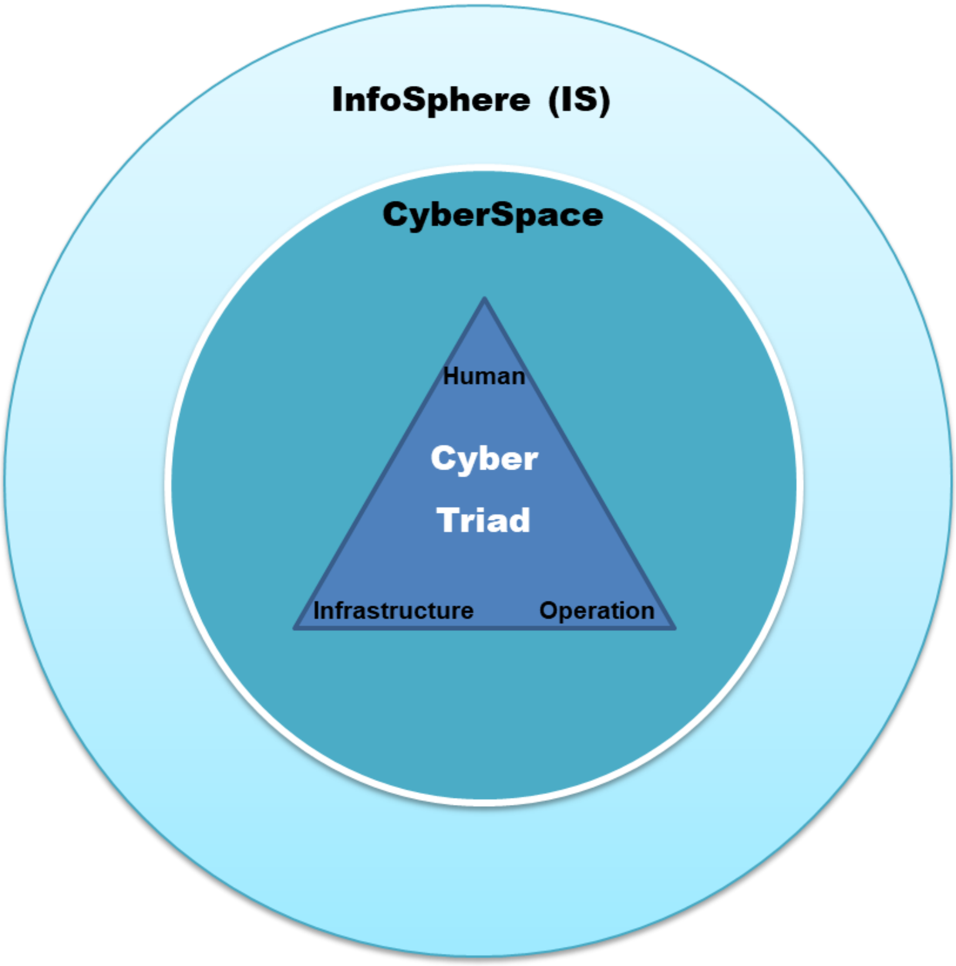
[24] See SAVONA, *Features of an Economics with Cryptocurrencies*, Lectio Magistralis, Università di Cagliari, 2021.

[25] See SAVONA, *Discorso al mercato*, Consob, giugno 2021. After the implosion of CC values in 2022 (see PANETTA, op. cit.), the difficulties of separating wheat from chaff have become clear.

The concept of IS was introduced by Boulding[26]. The current notion of IS refers to a wide digital domain which comprises information, data, knowledge and communication[27]. The IS has acquired strategic geopolitical characters[28].

3.3. The main features of IS, CS and CT are summarized in Chart 8.

Chart 8 – InfoSphere, CyberSpace and Cyber Triad: global scientific and geopolitical game changers



where:

IS – broad domain: information, data, knowledge, AI, crypto & cyber realities

CyberSpace – complex adaptive digital/human systems

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[26] See BOULDING, *Economics as a Science*, New York, 1970.

[27] See FLORIDI, *The Fourth Revolution: How the Infosphere is Reshaping Human Reality*, Oxford, 2014.

[28] See OLAGBEMIRO, op cit. and SAVONA, op. cit.

Cyber Triad – human, operation, infrastructure: interactive and interdependent dimensions

Source: Author adaption from Olagbemiro (2014)

The CS is a complex set of adaptive digital/human systems. The CT comprises the interactive and interdependent dimensions of human, infrastructure, operation systems.

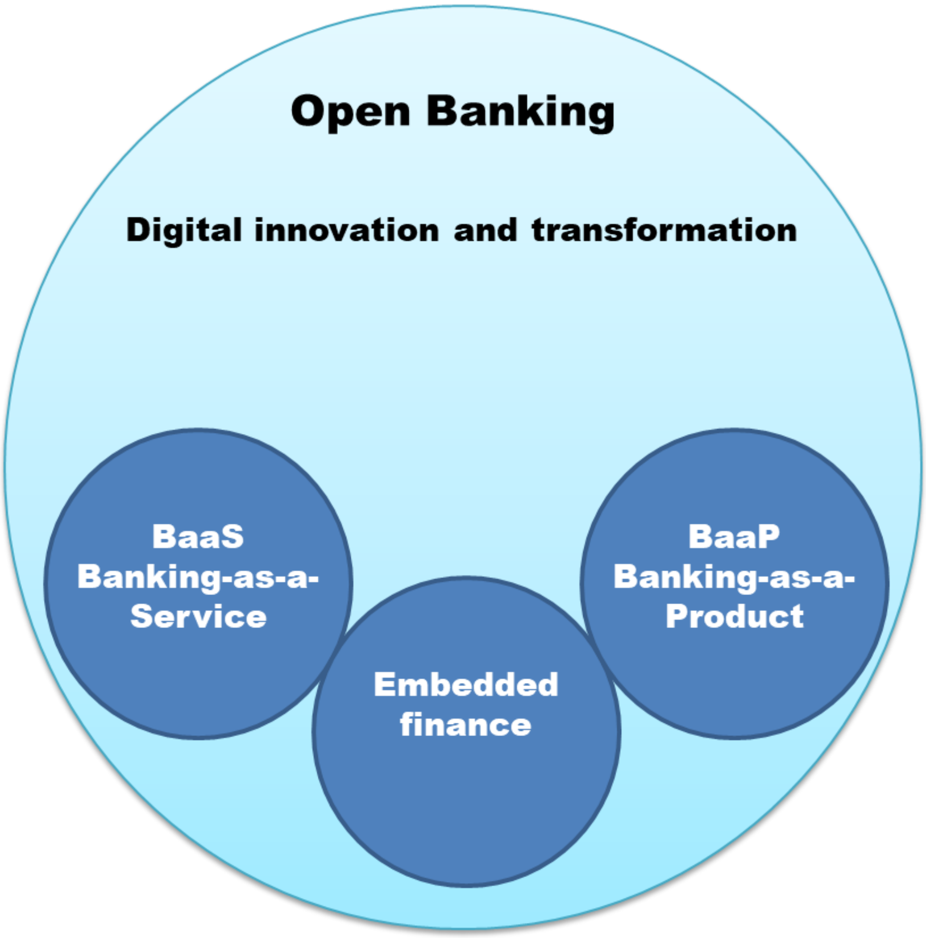
IS, CS and CT have altered the balance of power in terms of defence/warfare. The digital domains have acquired a prominent role. Cyber warfare utilizes models and schemes common to CCs[29].

An operational analysis of the interplay between IS, CS and CT from a military point of view was developed by a US Air Force Major General[30]. He underlined the potential threat to national security posed by the intertwining of private and public physical, intangible and human infrastructures. This tilts the balance towards offensive, preemptive strategies. The interconnections are clearly examined – also in documents made publicly available – by the Nato Cyber Defence Center[31].

The intertwining between digital innovation/transformation in the cyberspace - on the one hand - and in finance and money - on the other - is depicted in Charts 9 and 10.

[29] See TASS, *Jam-resistant Communication System Developed for Russian Army,* Moscow, 2014. See also PREZIOSA and VELO, *La difesa dell'Europa,* Bari, 2019.
[30] See OLAGBEMIRO, op. cit.
[31] See BRENT, *Nato's role in Cyberspace,* Bruxelles, 2019; see also NATO, *Cyber defence,* Bruxelles, 2022.

Chart 9 – The new banking and monetary challenges: Open Banking

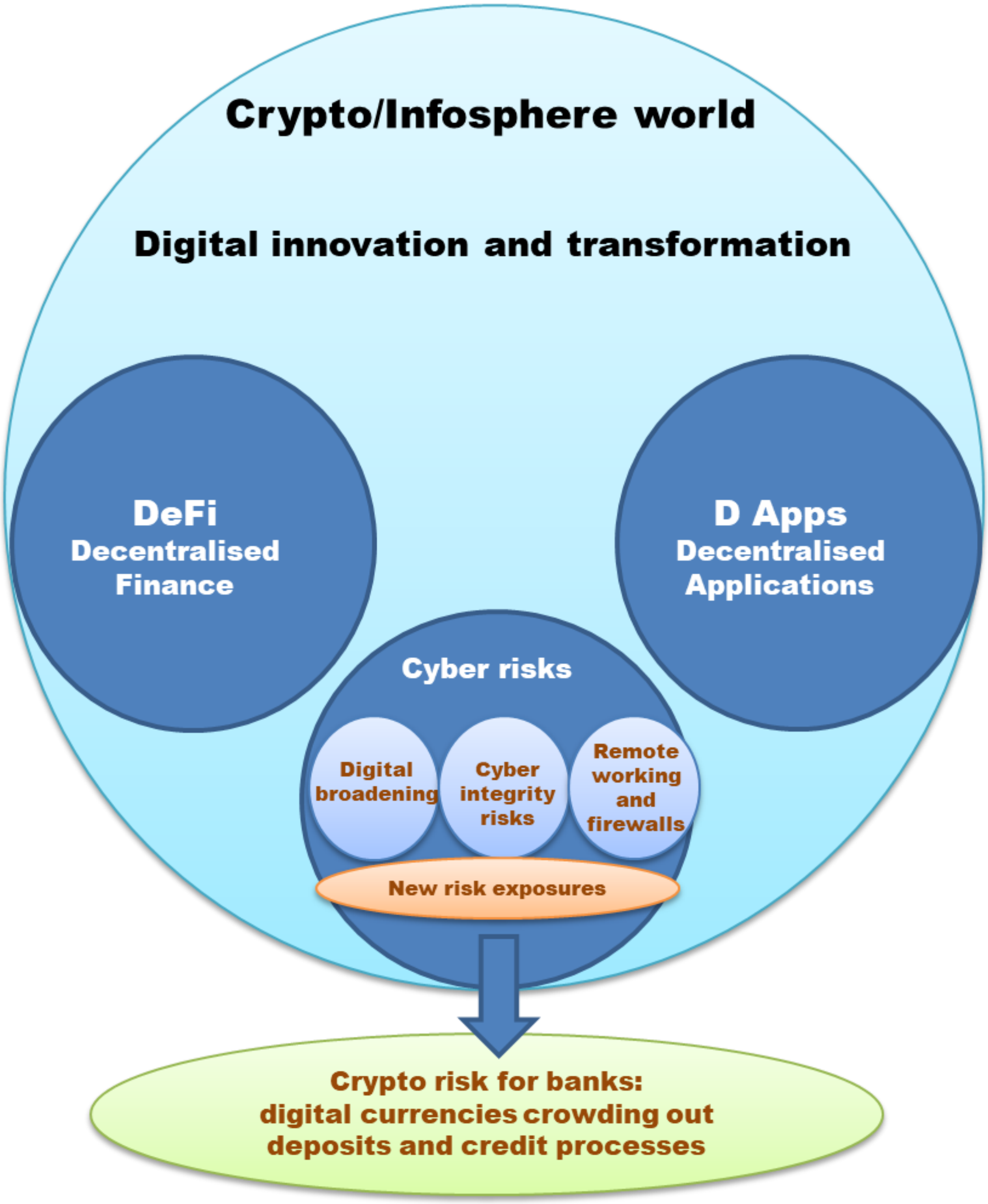


Source: Author

OB is based on the sharing of data among the different operators – traditional and innovative, competing and collaborating – of the banking system. OB is regulated in the EC by the Payments Services Directive 2(EC, PSD2, 2015/2366) and the Accord on Regulation of CryptoAssets MICA (EU Consilium 2022, 30 6). With clients' authorization, banking firms open the Application Programme Interface (API) to Fintech and other operators along the entire production chain, in terms of competition and/or collaboration. OB can be subdivided into three subsets: Banking-as-a-Service (BaaS), Banking-as-a-Platform (BaaP) and Embedded Finance (EF).

As is depicted in Chart 10, EF is intertwined with the digital currency technologies. More specifically, Decentralized Finance (DeFi) is based on applications which utilize Blockchain protocols, with inevitable cyber risks for banking intermediaries. The issue of crypto risk for banks will be explored in Par. V below.

Chart 10 – The new banking and financial challenges: the interactions with the Crypto/Infosphere world



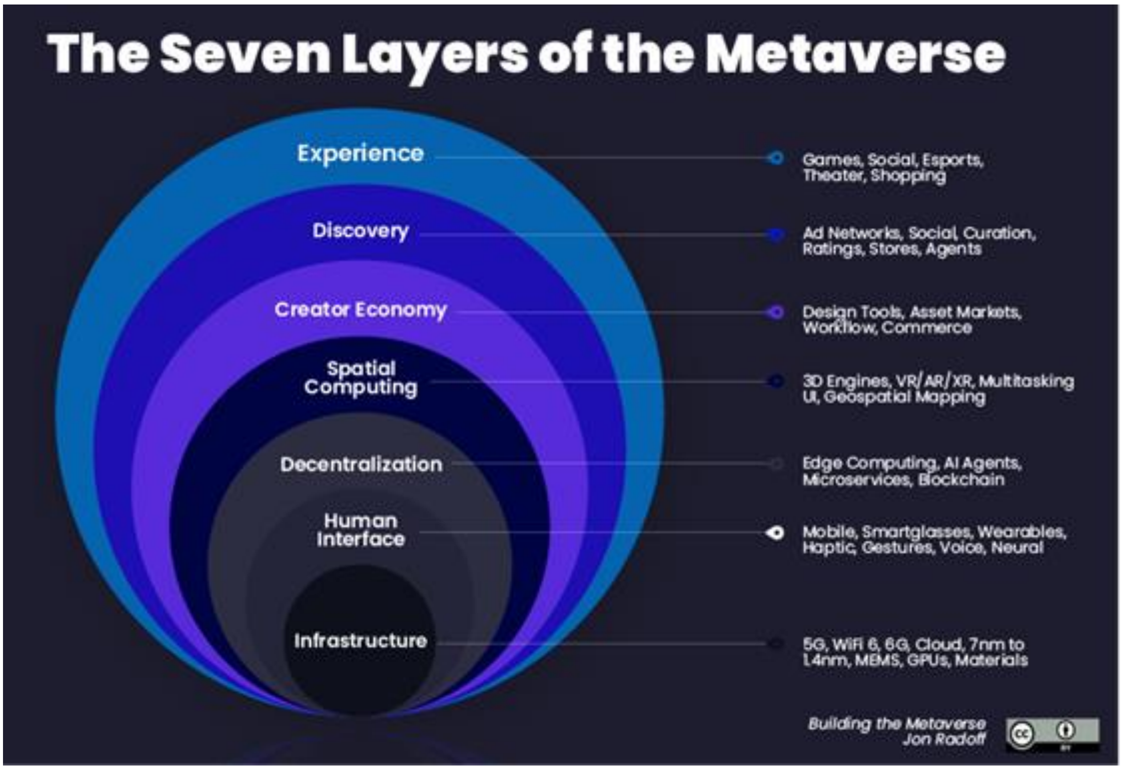
Source: Author

4. The MV can be viewed as a network of virtual phygital worlds/spaces on a spatial computing platform. The digital realms comprise aspects of social media, gaming, teaching, AR and VR, CC. The “real world” is replaced by a digital environment, which is accessed via a VR headset. Virtual representations of a person’s identity are adopted in this simulated environment: Avatars[32], who can be viewed as the embodiment of MV users[33].

The development of the MV is closely linked to the evolution of the Web (Charts 1 and 4) and to the IoT (Box 1). Mark Zuckerberg defined the Metaverse (MV) as the “embodiment of Internet”.

Seven distinct layers of the MV have been identified and analysed (Chart 11).

Chart 11: Experiences make up the outermost layer of the Metaverse



[32] Avatar is a sanskrit noun which means descent and refers to the embodiment of a superhuman being. The term was adopted in science fiction and computer games and became world-known with a film of 2009 directed by James Cameron.

[33] The Guglielmo Marconi University – the first digital university in Italy created in 2004 – adopted the Avatar model in 2009-10. This approach was abandoned after a few years fundamentally because students regarded it too artificial and expressed a strong preference for virtual classes with “physical” professors and tutors.

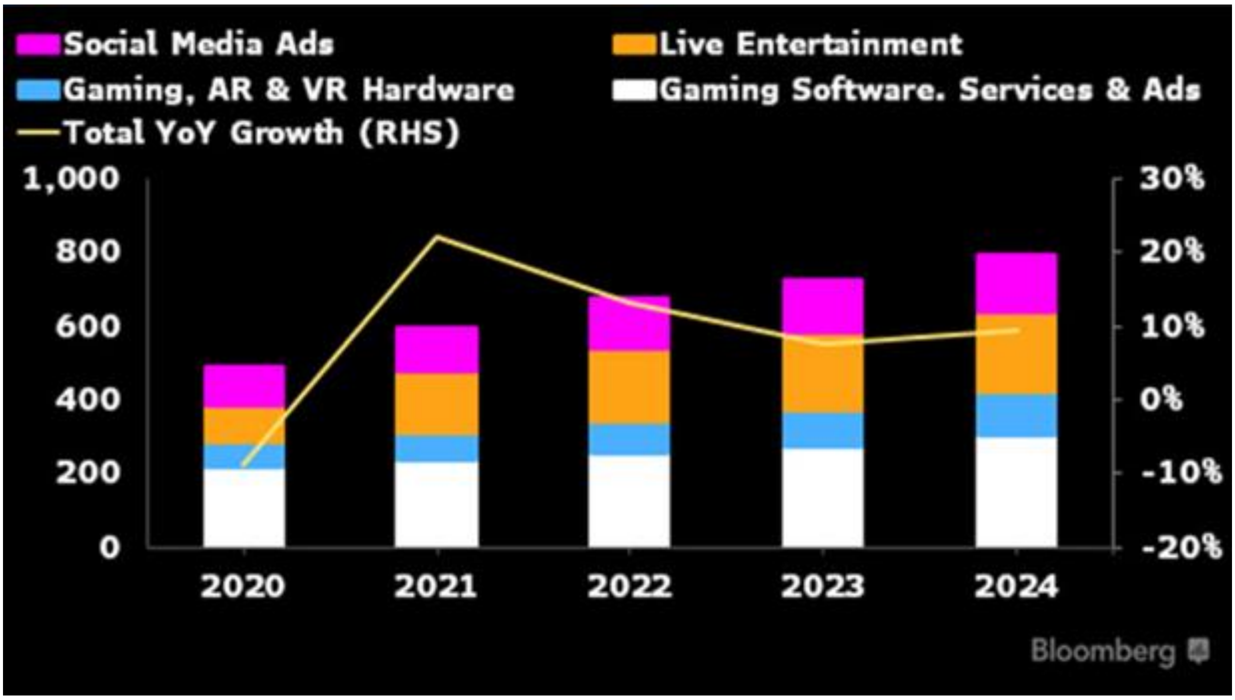
Source: Jon Radoff, Medium.com, April 2021

It has been argued that the Metaverse may represent the next iteration of the internet (the Web 3.0 in Chart 4), where "the lines between our physical and digital lives are increasingly blurred" so that "the great debate over crypto may be only a way point on the journey to the Metaverse" [34]. The Metaverse would thus become the future overall container of digital technologies. This position has become highly controversial.

Great emphasis had been put on the business side of the Metaverse and the search for new sources of profits of the digital business[35]. Recent developments show however that the additional profits are hard to materialize. The Zuckerberg companies suffered sizable stock exchange losses in 2022. Meta Platforms represent the world's largest social media company. Meta, with its large user-base, gained a prominent role in the advertising space. But it faces strong competition: not only from players such as Google, Amazon, Twitter, but also Apple, You Tube and Tencent. As of mid-November 2022, the market cap of Meta had fallen to $250 billion, compared to a peak of over $1 trillion a year earlier. Bloomberg's forecasts were somewhat more positive (Chart 12) but appear dated.

[34] See PHAM, op. cit.
[35] See FLORIDI, *Metaverse: a Matter of Experience*, Philos. Technol. 35, 73, 2022

Chart 12: Bloomberg's assumptions for Metaverse growth by 2024



Source: Bloomberg Intelligence, as of June 2021. LHS = Market Size ($bn) / RHS = annual growth

The new Metaverse is characterized by platforms developed after the Covid-pandemic lockdowns: Starline Google, Horizon Work rooms, Microsoft-Meta. The reconfiguration of office work has not entailed the expected sources of revenue.

The MV is also expanding in defence/warfare. For instance, AR Viewers are under experiment in the US, with important contracts between the Army and Microsoft. So far, the results have not been satisfactory.

An important new perspective for the analysis of the MV has been advanced by Floridi[36]. He draws the distinction between eXpanded Reality (XR) and eXpanded Experience (XE). XR refers in an extended way to virtual, augmented and mixed realities. XE is based on evaluation on the effective experience of persons who populate and use the MV and are equipped to assess risks and opportunities. But, as Floridi underlines, better design and improved ethical and regulatory frameworks are

[36] See FLORIDI, op. cit.

anyway required.

5.

5.1. As shown in this paper, digitization advances and processes represent global trends which reshape economic, monetary, financial, societal and geopolitical developments. These broad phenomena can be approached in terms of three main overlapping phygital domains: the Web, the IS and the MV. Commonalities are present, but divergences are also significant, notably because of the (supra)national political world framework. Review of the main systemic risks inherent in digitalization processes and trends is required to assess perspectives.

Money and Defence are the key areas where the sovereign and national factors continue, as in the past, to mould the phenomena under review.

5.2. Legal money can be delivered to settle contracts; strong links exist between the sovereign state, law, money and public debt. Markets could and can create private moneys, albeit with major drawbacks[37]: legal tender laws contributed to the limitation of private moneys.

In modern times the central banks play the role of issuers of base money – which must be accepted for payments. The traditional central bank liabilities consist of cash and bank reserves. They fulfill all the functions of money: medium of exchange, standard for deferred payments, store of value, measure of value. They face increasing competition from many sources: private crypto currencies and stable coins; private global capital and payments markets and Big Tech companies[38]. Private operators competition has taken new forms, with two principal sub-modes: unbundled schemes, e.g. Apple and Goldman Sachs deposit accounts, global payments and lending platforms; re-bundled, e.g. Musk's Super app/X Com. In

[37] See HICKS, *Causality in Economics*, Oxford, 1979.

[38] See CAPRIGLIONE, *Fintech e cryptovalute*, Associazione Guido Carli e Dentons, 2021; see also ZUCHOWSKI et al., *Crypto assets, decentralized autonomous organizations and uncertainties of distributed ledger technologies*, LEYR, Vol.11. - Part 1, 2022.

perspective, the strongest competition comes from CBDCs, with two principal declinations: token-based, without distributed-ledger technology, and distributed-ledger models.

The issue of CBDCs appears inevitable, but the forms and the technological avenues can be very different, as well as the systemic implications. A prerequisite to address these questions is to delve into the two components of base money: currency in circulation is mainly used by households and small firms, while bank reserves are already being substituted by banking institutions with digital assets.

Chaum et al.[39] have outlined a token-based CBDC – without distributed-ledger technology - which would not pose severe threats to the stability, and existence of the banking system. Regulation clearly shapes all the processes under review.

China has taken a lead: the digital Yuan is well beyond the prototype operational stage[40]. In the EU the digital Euro represents an advanced project with a short timeline to realization[41]. In the United States the views are more hedged[42].

5.3. Cyber warfare is intertwined with the advances in the IS. As shown in Par. III.3, IS, CS and CP have altered the balance in respect of defence/warfare. The MV is also acquiring a significant role in this area.

These trends have been anticipated by many military experts. The war in Ukraine underlines the relevance of their views and the daunting similarities with the developments which led to the WWW (Par. II.1).

The US and China are the countries which compete for global supremacy. Russia, the EU and the UK are in a second layer.

Human resources, technological capital and physical infrastructure are

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[39] See CHAUM et al., *How to issue a central bank digital currency*, SNB, Bern, 2021.
[40] See FULLERTON and MORGAN, *The People's Republic of China's Digital Yuan,* ADB, Philippines, 2022.
[41] See LAGARDE, *Digital euro: a common European project*, Frankfurt, 2022.
[42] See WALLER, *The US Dollar and Central Bank Digital Currencies, Washington D.C., 2022.*
A critical survey of current issues and of possible cooperative solutions has been presented by the BIS INNOVATION HUB, *Connecting economies through CBDC*, Basel, 2022.

interlaced in today's defence/warfare systems[43]. More generally, cyber space has altered the balance and the modes of power among states, politics and citizens, at national and world levels[44]. The current frontiers and challenges are summarized in Box 2 below.

BOX 2 - Geopolitical/interacting dimensions of sovereign moneys and the phygital domains

I. Sovereign central bank money
• The concept and the measure of money are time and space dependent. The morphing of money presents key common features: the links with the sovereign/political context, the "legal tender" of sovereign currency, the intertwining with public debt[45], the international domain of national currencies (e.g. "the exorbitant privilege of the dollar!"), the inverse relationship between the price level and the value of money in an economic system. • In the past decades monetary creation has been entrusted by states/governments to central banks - whose liabilities, currency in circulation and bank reserves constitute the monetary base – and which have been tasked with safeguarding the real value of money with a primary low-inflation policy target. • The cost efficiency of digital payments and the new forms of digital central banks operations have led to active consideration of the issue of public/sovereign/digital money. CBDCs are the new frontier and challenge for central banks. The risks of crowding out of cash and of traditional bank reserves – in a framework of decentralized finance cannot be neglected. • The prospects of global coordinated solutions (such as the creation of a

[43] See BRENT, *Nato's role in Cyberspace*, Bruxelles, 2019, and NATO, *Cyber defence*, Bruxelles, 2022.

[44] See MACNAMARA, *Power in Cyberspace*, Belfast, 2019.

[45] See BUITER, *Central Banks as Fiscal Players*, Cambridge, UK, 2020, and VISCO, *The interaction between monetary and fiscal policies in the pandemic crisis and beyond, Rome, 2022.*

digital Bancor) are far less likely than national solutions. • In any event, the shape and forms of monetary/financial regulation and surveillance frameworks are destined to change in fundamental ways.
II. Defence/warfare
• As illustrated in the paper, the operations of defence/warfare have changed/are changing as a result of two interacting forces: i. (sovereign) money has become a major "weapons system" and ii. cyberwarfare and cyberspace have acquired a prominent role in military and political strategies/modes of power. • The United States current military doctrine contains detailed and specific references, according to sources approved for public release, to money as a critical "weapons system" (Commander's Guide to Money as a Weapons System, https://usacac.army.mil). This helps explain the active interest in preserving the leading sovereign role of the US dollar. Similar considerations motivate the Chinese authorities' desire to establish a leading independent international role for the Yuan. • With the growing strategic importance of the cyberspace (see SAVONA, op. cit. 2021) the digital domain has acquired a prominent role in defence/warfare. Also in this area the United States have addressed in depth the issue at strategic level, and have decided to allow general distribution of important military studies (see OLAGBEMIRO, op. cit., 2014). A similar policy of "limited disclosure" on the strategic role of the IS has been adopted by Nato (see BRENT, op. cit., 2019, and NATO REVIEW, op. cit., 2022).

Source: Author

6. A common theme of the digitalization process in money and defence encompassed by the three phygital domains is represented by the underlying

methodological reference frameworks of statistics, probability, economics and social sciences[46]. Specific reference can be made to the relationship between inductive and deductive approaches in research methodology, and to the distinction between measurable objective risk and uncertainty[47].

These issues have been identified but cannot be elaborated in this paper. Money, central banks, public debt and banking firms are and will be profoundly affected by cryptoworld developments. The analytical framework of CCs poses inevitable issues for the development of economics, finance and regulation.

References on these methodological issues have been made in this paper to King (2016), Kay and King (2020), Savona (2021b, 2022b), Capriglione (2021), Masera (2021), Hull (2021) and King (2021). These contributions challenge the common hypothesis in economics of a natural tendency to equilibrium and the self-control capacity of markets[48]. This in turn puts into question the feasibility of private global capital, payments and money markets.

Sovereignty and national political drivers continue to play a very important role in the shaping of Web 3.0, IS and MV phygital worlds. The prospect of a rapid convergence because of the underlying digital thrust and objective commonalities may prove deceptive.

The key role acquired by the cyber space in money, sovereign debt, defence and warfare underlines the need, but at the same time the practical impossibility, to rely on a global coordinated steering of these processes. The three phygital domains synthetise and illustrate in new guise the conceptual and political debates on providing global public goods in a framework of national, supranational, federal governments.

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[46] See HELBING, *Systemic Risks in Society and Economics*, Zurich, 2010. See also KAY and KING, *Radical Uncertainty: Decision-making for an Unknowable Future*, London, 2021.
[47] See KEYNES, *A Treatise on Probability*, London, 1921, and KNIGHT, *Risk, Uncertainty and Profit*, *New York*, 1921.
[48] See ARROW and DEBREU, *Existence of an equilibrium for a competitive economy*, Econometrica, 1954. See also ARROW, *General economic equilibrium: purpose, analytic techniques, collective choice*, Stockholm, 1972.

The concept of “global governance”[49] represents an attempt to overcome the oxymoron of seeking coordinated/cooperative responses in a world of independent governments. It can be recalled that, according to their etymology, the words cyber, government and governance have the same meaning: guide, steer, govern.

The true question is to avoid tipping points or systemic fractures, and to manage fragmentations, notably in money, finance and geopolitics. The dangers of fragmentation require special attention in the EC, because of the “money without a state”[50] and the weaknesses of the Banking Union and the Bank Resolution frameworks.

The fora for dialogue should be fully exploited to secure political and social support for convergence, to maintain the road open for cooperation, with a view to fostering positive agreements, full use of the potential of digital advances and appropriate regulation[51].

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[49] See DOMINGUEZ and FLORES, *Global Governance*, Oxford, 2018, and CGI GLOBAL, *Global Governance Institute*, cgiglobal.org, 2022.
[50] See ISSING, *The Birth of the Euro*, Cambridge, UK, 2008.
[51] See UN, *Roadmap for Digital Cooperation*, New York, 2022.

GREENWASHING-RELATED RISKS: ANALYSIS AND FUTURE PERSPECTIVES TO TACKLE ENVIRONMENTALISM AS A FORM OF VIRTUE-SIGNALLING

Antonio Blandini [*] – Gianfranco Alfano [**] – Pietro Cappabianca [***]

ABSTRACT: *Companies are giving an increasing attention to the so-called ESG (Environmental, Social and Governance) criteria. Such policy change is a consequence of scientific warning about and environmental issues. If, on one hand, companies may play a significant role in tackling climate change, on the other hand, there is the possibility that their commitment to such criteria may turn out to be a mere façade, bound to crumble and to reveal itself only as a commercial strategy to enhance their reputation towards stakeholders. The same conclusion may be reached for financial operations, where it is essential to provide a clear and precise communication in order to guarantee capitals' flow in green investments. This paper deals aims to give an overview on such phenomenon, the so-called greenwashing and the related risks, in particular with civil lawsuits, criminal and regulatory risks, even analyzing recent cases that show how harmful this phenomenon can be.*

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This paper is the result of a unitary approach and a common reflection by the three authors. However, paragraphs 1 and 2 can be attributed, in particular, to Gianfranco Alfano; paragraphs 3, 3.1, 3.2 and 3.3 can be attributed, in particular, to Pietro Cappabianca; paragraph 4 can be attributed, in particular, to Antonio Blandini.

1. Companies consider an intangible asset their commitment to improve environmental performances by taking advantage of them for both commercial advertisement[1] and for corporate governance.

Policy changing is a consequence of pressing scientific warning about climate change and environmental issues. In such context, one can recall both the sustainable development goals adopted by the United Nations in 2015[2] to be achieved by 2030[3] and by the European Green Deal, which represents the European strategy to tackle climate change and to make sure to create a «modern, resource-efficient and competitive economy where there are no net emissions of greenhouse gases in 2050 and where economic growth is decoupled from resource use»[4].

Sustainability is now a fundamental element of legislations in many different countries around the world. For instance, the concept is recalled in programmatic and legislative acts issued by the European Union[5] (which will be broadly discussed in the next paragraph), but also in EU countries' internal acts showing a renewed sensibility towards the topic.

Following the *Convention citoyenne pur le climat*, France recently enacted law 2021-1104 on climate and resilience where, in order to pursue the so called ecological transition (and consequently, sustainability goals), the country pledged, among other things, to find a correct balance between biodiversity protection and renewable energy development, since it represents the necessary path to travel in

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[1] FEINSTEIN, *Learning from past mistakes: future regulation to prevent greenwashing*, 2013, in *Boston College Environmental Affairs Law Review*, 231.

[2] The UN Agenda for 2030 is an action program for people, planet and prosperity. It provides 17 Sustainable Development Goals (SDGs) that are part of a larger program consisting of 169 targets to achieve in environmental, social and economic domain by 2030, in *https://www.un.org/sustainabledevelopment*.

[3] MAY, *Sustainability Costitutionalism*, in *UMKC Law Review*, 2018, 857.

[4] Communication from the commission to the European parliament, the European council, the council, the European economic and social committee and the committee of the regions, The European Green Deal, 11st December 2019, COM (2019) 640 in *https://eur-lex.europa.eu/resource.html?uri=cellar:b828d165-1c22-11ea-8c1f-01aa75ed71a1.0002.02/DOC_1&format=PDF*.

[5] The European Commission has adopted a set of proposals aimed to tackle greenhouse gas emissions by at least 55% by 2030 and to become the first "carbon neutral" continent within 2050.

order to reduce CO_2 emissions[6].

In the Italian legislative framework, sustainable development had already been mentioned in the so called environmental code (legislative decree 152/2006) at the article 34 where it is stated forth that the Government shall update, at least every three years, the "national strategy for sustainable development" by ensuring a divergence between economic growth and environmental impact[7].

However, climate change and uncertainty about the future demanded a specific taxonomy[8] in order to define when, and how, an investment could be considered climatically and socially "sustainable"[9], especially because there is no unique definition in the legislative framework[10].

Besides, the ever-changing economic, social and political setting wherein companies operate certainly affects the juridical context where the business is run[11].

An increasing attention is, in fact, given to the ESG criteria (Environmental, Social and Governance), considering that companies have realized that the sustainability factor will be essential in the long-term financial strategies they adopt[12] and that the so called "net zero momentum" is building.

More than 90% of the global economy is, currently, covered by national net zero commitments[13].

More specifically, due to the dramatic rise of social attention towards corporate behavior, companies are held accountable for their ESG activities and for this very reason they are required to disclose such information even though, for a

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[6] PEPE, *La tutela della biodiversità in Francia tra cambiamento climatico e politiche di transizione*, in *Ambiente e diritto*, 2022, 13. Also see PARGUEL, JOHNSON, *Beyond greenwashing: addressing 'the great illusion' of green advertising*, in *Revue de l'organisation responsable*, 2021, 59 ff.

[7] TOHBANI, *Pratiche commerciali scorrette e sostenibilità: alla ricerca di un significato*, in *Persona e mercato*, 2022, 424.

[8] HO, *Modernizing ESG disclosure*, in *Illinois Law Review*, 2022, 328.

[9] FORNASARI, *Corporate governance – Tassonomia della finanza sostenibile: un'opportunità per imprese e professionisti*, in *Rivista dei dottori commercialisti*, 2022, 257.

[10] TOHBANI, *op. cit.*, 425. The misuse of such term is mentioned by HIROKAWA, *Saving Sustainability*, in *Environmental Law Reporter News and Analysis*, 2015, 10157.

[11] SPEZIALE, *Il nuovo paradigma dell'impresa sostenibile*, in *Contratto e impresa*, 2022, 752.

[12] PALMITER, *Capitalism, heal thyself*, *Rivista delle società*, 2022, 293.

[13] Accelerating global companies towards net zero by 2050, Accenture Global Report 2022.

long time, there was a «lack of international standards on ESG-related taxonomy»[14].

However, such commitment, despite gaining an undeniable relevance for shareholders, investors, and consumers[15], lends itself to being grounds for a harmful phenomenon defined as greenwashing[16].

Greenwashing consists in the «practice of gaining an unfair competition advantage by marketing a financial product as environmentally friendly when in fact basic environmental standards have not been met»[17]. This conduct is aimed at «increas[ing] their market share of the lucrative ethical consumer sector»[18].

Such phenomenon is relatively new[19], since the first findings were discussed and analyzed in the last decade of the previous century when companies were starting to realize that they could obtain a competitive advantage from environmental concerns, thus encouraging researchers to expand their efforts in the field Corporate Social Responsibility (CSR)[20].

The ESMA (European Securities and Markets Authority) recognized five areas of greenwashing risks[21] in its preliminary findings.

Namely, the Authority found out that greenwashing conducts may be carried

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[14] DE SILVA LOKUWADUGE, DE SILVA, *ESG risk disclosure and the risk of greenwashing*, in *Australasian Accounting Business and Finance Journal*, 2022, 147.

[15] ZAIJIBA, *Sustainability and sustainability report*, 9, in *www.academia.edu*; PAPPALARDO, *"Sottolineare il carattere ecologico di un prodotto nell'attuale momento storico, nel quale il valore ecologico riscuote la generalità dei consensi" – Trent'anni di Green Claim nella giurisprudenza del Giurì e dell'AGCM*, in *Rivista di diritto industriale*, 2021, 239.

[16] BRUTTI, *Le regole dell'informazione ambientale, tra pubblico e privato*, in *Diritto dell'informazione e dell'informatica*, 2022, 634.

[17] Regulation (EU) 2020/852 of the European Parliament and of the Council of 18 June 2020 on the establishment of a framework to facilitate sustainable investment, and amending Regulation (EU) 2019/2088, recital 11.

[18] JONES, *Socially Responsible Market*, in *The Wiley-Blackwell Enciclopedia of Consumption and consumer studies*, 2015.

[19] However, some authors have defined greenwashing as a specific variant of "whitewashing", *i.e.* the phenomenon in which a corporation tries to cover up or excuse wrongdoing through the biased presentation of data or through false statements: *cfr*. COPPOLECCHIA, *The Greenwashing Deluge: Who Will Rise Above the Waters of Deceptive Advertising?*, in *University of Miami Law Review*, 2010, 1354.

[20] RIZZELLO, *Green Investing. Changing Paradigms and Future Direction,* London, Palgrave Macmillan, 2022, 108-109.

[21] ESMA, *Greenwashing project – COM request and project structure, initial thinking on a classification*, 12[nd] of October 2022.

out when describing a product's "E" and "S" (environmental and social) characteristics or its sustainable objectives when such claims result to be vague, exaggerated or inconsistent.

At the same time, the examined conduct may be found when there is no correlation between the claimed ESG metrics and the fund's real impact on the external world or when the so called net-zero targets are published without details on the scope and on how such achievement should be reached.

Finally, as the ESMA acknowledged, greenwashing risks could emerge when dealing with active engagement and proxy voting on environmental or social topics and, at the same time, in the case of linking remuneration to ESG performance at entity or product level.

One of the main causative factors could be found in the lack of uniform standards in order to evaluate a financial product's sustainability.

In detail, one of the most important goals companies try to achieve is enhancing their reputation by showing the stakeholders their systematic and serious interest in sustainability matters which do not coincide with the core business activity.

Considering that a comparison between sustainability performance among companies may be very hard to enact, sustainability reports become «proxy indicators for performance»[22]. Consequently, companies may be able to gain a competitive advantage over other competitors on the market in terms of business relationships and of positive reputation, thus gaining an increase in brand value and business success.

The combination of these circumstances may lead to misleading and overstated evaluation of sustainable products' positive characteristics.

The most relevant issues when dealing with greenwashing are the lack of precise definitions and, at the same time, the incompleteness and the dubitability of

[22] HERZIG, SCHALTEGGER, *Corporate sustainability reporting. An overview*, in SCHALTEGGER, BENNETT, BURRITT (Eds.), *Sustainability Accounting and Reporting*, 2006, Springer, 301-324.

data required to support the investor in their selection of sustainable products to invest in.

As a matter of fact, such conduct turned into an increasingly important regulatory issue in the EU because, upon closer inspection, companies had to (and, at least partially, still have to) face a double challenge: to adequately respond to the demand for sustainable financial products and, at the same time, to remain competitive[23] on an ever-changing and growing market that lacked a precise legal and regulatory framework[24] that therefore allowed every company operating in the EU to define its own sustainability criteria.

Clear, precise and transparent rules play a double significant role[25]. On one hand, they could be helpful for investors and consumers to be aware of, and to avoid – or at least to minimize – risks.

On the other hand, they can assure more straight and severe consequences in case of voluntary violation of the rules. In other words, in case of intentional or negligent greenwashing.

From a regulatory point of view, the uncertainty about the abovementioned practices and the related regulatory sanctions, contribute to greenwashing itself, feeding uncertainty and making it very hard to recognize such conducts and to prevent them from happening.

Clear, fair and not misleading disclosure is the most relevant way to avoid greenwashing, but it must be legally established when such disclosure is compliant to such criteria.

That is a complicated task to achieve since it brings another equally relevant related risk: excessively extending the application range of greenwashing.

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[23] SIANO, VOLLERO, CONTE, AMABILE, *"More than words": Expanding the taxonomy of greenwashing after the Volkswagen scandal*, in *Journal of Business Research*, 2017, 27.
[24] FORNASARI, *op. cit.*, 258.
[25] Transparency is considered to be one of the main pillars of sustainable finance, especially when ESG-related risks could have a huge impact on financial system: LANDINI, *ESG, green finance, assicurazioni e previdenza complementare*, in *Corporate Governance*, 2022, 222.

Certainly, another useful tool in such a situation would be to raise awareness[26] to fully understand when one is facing the risk of greenwashing and, consequently, to create a precise set of instruments to prevent and avoid such conduct.

A fair governance for climate development will be, indeed, most effective if and when supported by formal and informal institutional arrangements that can show a substantial commitment to development and adaptation of policy instruments to climate risk management[27] and, as it was correctly stated, «the principle of sustainability demands social and democratic control over the economy»[28].

The ongoing debate about the role of financial and company fields in the green transition may, in fact, become inconsistent if referred to generic and vague notions of sustainability and sustainable corporate governance. In other words, it will be necessary to analyze such new models of corporate governance taking into account their implications on «different spectrum of discipline, statutory autonomy and liability»[29].

2. As for the European Union, it is to be noted that, towards the last decade, the strategy adopted by the legislator - with a growing attention given to topics such as climate change and human rights – shows a change in perspective[30], emphasizing the provisions of the Treaty of Lisbon which states that economic growth is strictly related to «the achievement of minimum social objectives in order to achieve the social market economy provided for in Article 13 TEU»[31].

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[26] TERRYN, *The New Consumer Agenda: A Further Step Towards Sustainable Consumption*, in *Journal of European Consumer and Market Law*, 2021, 1.

[27] Intergovernmental Panel on Climate Change, *Climate change 2022: Impacts, Adaptation and Vulnerability. Working Group II contribution to the sixth assessment of the intergovernmental panel on climate change*, 110-111.

[28] CATERINO, *Sustainability and civil law*, in *The Italian Law Journal*, 2018, 294.

[29] GENOVESE, *La "sustainable corporate governance" delle società quotate. Note introduttive*, in *Corporate Governance*, 2022, 112.

[30] VERBRUGH, *European Company law in 2020: mobility and sustainability*, in *European Company law Journal*, 2020, 5.

[31] CATERINO, *op. cit.*, 295.

Considering such reasons, throughout the last years, an approach towards the so called Corporate Social Responsibility (CSR) was developed to face social and environmental issues with a binding legislation in order to encourage and impose rules to companies[32].

As for financial instruments and their sustainability, the renewed attention towards environmental issues required a uniform legal framework that could let stakeholders identify all the economic activities which could be defined "sustainable", and in doing so, avoiding the abovementioned greenwashing which, due to reputational implications for the companies involved – or even only allegedly accused of -, could discourage private and institutional investors.

Notably, in order to create a more precise legal framework, to mitigate the risk of such conduct and to provide a uniform classification system to evaluate the environmental sustainability[33] of economic activities a central role in the European Union legislation, is played, Regulation (EU) 2019/2088 (so called SFDR) on sustainability-related disclosures in the financial services sector, by Regulation (EU) 2020/582 (so called Taxonomy Regulation), by Regulation 2021/1119 establishing the framework for achieving climate neutrality, and, finally, by the corporate sustainability report directive (so called CSRD) [34], definitely approved on the 28th of November 2022 by the European Union Council, whose aim is, among others, to amend the 2014 non-financial reporting directive (so called Accounting Directive) since its rules were no longer tailored to the EU's purpose of transition to a "carbon-free" economy and posed issues in terms of effectiveness and «limited comparability and reliability of sustainability information»[35].

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[32] LIBERTINI, *Sulla proposta di Direttiva su "dovere di diligenza e responsabilità delle imprese"*, in *Rivista delle società*, 2021, 329.
[33] VAN OOSTRUM, *Sustainability through transparency and definitions. A few thoughts on Regulation (EU) 2019/2088 and Regulation (EU) 2020/852*, in *European Company L. Journal*, 2021, 16.
[34] Directive 2022/2464 of 14 December 2022 of the European Parliament and of the Council amending Regulation no. 537/2014 and directive 2013/34/EU, as regards corporate sustainability reports.
[35] Recital 11.

The EU legislator chose an organic and progressive approach[36], aiming to a systematic reform to be enforced with a step-by-step strategy through the next years.

The SFDR, on one hand provides a definition of "sustainable investment" at article 2 and, on the other hand, obliges financial market participants to disclose sustainability related parameters[37]. However, it is to be stressed that the SFDR is about disclosing relevant ESG information but, at the same time, «it does not constitute an ESG label»[38].

The Regulation identifies two categories of funds. More specifically, article 8 deals with funds that «promote, among other characteristics, environmental or social characteristics, or a combination of those characteristics» (light green funds) and article 9 concerns funds that have «sustainable investment as its objective and an index has been designated as a reference benchmark» (dark green funds), with a difference in terms of information to be disclosed pursuant to article 6 of the Regulation itself, which enumerates the description of pre-contractual information to be disclosed by financial market participants.

Moreover, in order to classify economic activities and financial products considered sustainable based on their impact on the environment and on the climate, the Taxonomy Regulation, which integrates and modifies the SFDR, sets out the juridical base by providing investors with uniform and clear conditions aimed at encouraging capital flow into sustainable sectors in need of financial support[39] and to combat the "green labelling" practice[40]. This is done by appointing the European

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[36] GENOVESE, *op. cit.*, 99.

[37] Such as, pursuant to Article 6, "the manner in which sustainability risks are integrated into their investment decisions".

[38] Campbell & Reuters, *€4 trillion in EU funds branded 'sustainable', but are investors being misled?*, in *https://www.euronews.com/green/2022/02/08/4-trillion-in-eu-funds-branded-sustainable-but-are-investors-being-misled*.

[39] QUARANTA, *Il mio nome è Bond: Green Bond. Non è tutto green ciò che luccica*, in *Ambiente & Sviluppo*, 12, 2021, 875.

[40] ANNUNZIATA, *La disciplina del mercato mobiliare*, 2021, Milano, 94.

Commission to provide such criteria through specific acts[41].

Such act establishes four conditions that an economic activity must meet to be considered environmentally sustainable and, at the same time, it provides six environmental objectives to which the abovementioned activities could contribute to (such as climate change mitigation and adaptation and the transition to a circular economy).

As a consequence of its mandate, on the 6th of April 2022, the European Commission drafted a delegated regulation[42] containing the Regulatory Technical Standards (RTS) to be used by market operator when disclosing sustainability-related information pursuant to Regulation (EU) 2019/2088 (SFDR) and Regulation (EU) 2020/582 (Taxonomy Regulation).

The path towards climate neutrality found another significant step in the Regulation (EU) 2021/1119 whose Article 1 sets the legally binding objective to pursue the temperature goal established in the Paris Agreement.

However, despite treating climate neutrality as a binding (and not merely programmatic) goal for the first time, such Regulation was deeply criticized since its contents were limited to programmatic goals, representing an ideal approach more than a legislative act[43] since it does not provide useful tools for European authorities and Member States in order to tackle climate change.

In particular, nothing is set forth when it comes to sustainability in the financial field and for the greenwashing phenomenon.

Finally, in order to increase companies' accountability and to provide uniform

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[41] DESANA, *Politiche di dialogo con gli azionisti, equilibrio di genere e fattori ESG; appunti*, in *Rivista delle società*, 5-6, 2021, 1343.

[42] Commission Delegated Regulation (EU) 2022/1288 supplementing Regulation (EU) 2019/2088 of the European Parliament and of the Council with regard to regulatory technical standards specifying the details of the content and presentation of the information in relation to the principle of 'do no significant harm', specifying the content, methodologies and presentation of information in relation to sustainability indicators and adverse sustainability impacts, and the content and presentation of the information in relation to the promotion of environmental or social characteristics and sustainable investment objectives in precontractual documents, on websites and in periodic reports.

[43] BEVILACQUA, *La normative europea sul clima e il green new deal. Una regolazione strategica di indirizzo*, in *Rivista trimestrale di diritto pubblico*, 2022, 311 ff.

and objective sustainability standards – the ESG criteria (which, apart from environmental protection, also includes social aspects and good corporate governance) –, the CSRD, expands the number of companies which will be obliged to disclose information concerning their environmental impact and, moreover, specifies the information that undertakings are obliged to disclose about six specific environmental factors (climate change mitigation, climate change adaptation, water and marine resources, resource use and the circular economy, pollution and biodiversity and ecosystems)[44]. In details, the Directive adopts a progressive approach by establishing the timing of its enforcement based on companies' size and turnover thresholds.

Such legislative acts make it clear that greenwashing is a conduct that must be prevented in three stages in the investing process: pre-contractual, post-investment stage and ongoing reporting, and complaints handling.

The Directive introduces a due diligence obligation in the human rights and climatic field for European companies, following the same path taken towards achieving the European Green Deal goals[45]. Said act would represent the first legislative instrument to be applied "horizontally" and with extra-territorial effects[46].

The Directive's two main pillars are, on one hand, the respect of human rights, environment with their due governance obligations and, on the other hand, not contributing to impact negatively the process of achieving the abovementioned goals.

Such act brings together all the RTS issued from February 2021 and provides metrics and methodologies to issue the ESG-related information[47].

In such legal framework, the Directive 2014/65/EU (so called MiFID II) which

[44] COLAERT, *The changing nature of financial regulation: sustainable finance as a new EU policy objective*, in *Common Market Law Review*, 2022, 1683.
[45] MARCHETTI, *Il bicchiere mezzo pieno*, in *Rivista del diritto delle società*, 2021, 338.
[46] FASCIGLIONE, *Luci ed ombre della proposta di direttiva europea sull'obbligo di due diligence d'impresa in materia di diritti umani e ambiente*, in *https://tinyurl.com/ka5wpy3u*.
[47] PRISCO, *Finanza sostenibile, gli standard UE contro il greenwashing*, in *Norme&Tributi Plus Diritto*, 2022, 1.

came into force in January 2018 having as its original aim to make financial markets more efficient and transparent with a higher level of protection for investors, must be mentioned.

MiFID II has been amended through numerous delegated regulations. More specifically, Delegated Regulation 2021/1253[48] integrates client sustainability preferences into investment advice. In light of that, sustainability factors, risks and preferences[49] must be taken into account by financial markets participants in organizational requirements, conflict of interests, and product sustainability assessment. Such act is part of the Sustainable Finance Action Plan (SFAP) developed by the European Commission in order to make capitals flow into sustainable projects and investments.

The need for clear, precise and not misleading communication has been recognized by the ESMA too, which recently published a consultation paper on that topic stating that the use of ESG criteria or sustainability-related terms should be allowed only if, and when, supported by a material evidence of such characteristics[50].

Furthermore, the ESMA, in order to enhance the enforcement activity of the law in force, proposed that funds using ESG-related words should reach a threshold of at least 80% of investments used to meet the environmental or social characteristics or sustainability objectives.

However, one point is certain: greenwashing causes different kinds of risks for companies which will be analyzed in the following paragraphs.

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[48] Commission Delegated Regulation (EU) 2021/1253 of the 21st April 2021 amending Delegated Regulation (EU) 2017/565 as regards the integration of sustainability factors, risks and preferences into certain organisational requirements and operating conditions for investment firms.

[49] *SFDR Article 8 and Article 9 Funds: Q3 2022 in Review. Managers downgrade more article 9 funds ahead enhanced disclosure regime*, reperibile sul sito https://www.morningstar.com/en-uk/lp/sfdr-article8-article9.

[50] ESMA, *Consultation paper on guidelines on funds' name using ESG or sustainability-related terms*, 18th of November 2022, 8, available at *https://www.esma.europa.eu/policy-activities/sustainable-finance/climate-benchmarks-and-esg-disclosure.*

3. Firstly, the reputational risk a company may face due to greenwashing allegations must be taken into account.

Currently, considering the abuse of the expressions such “green” “eco-friendly” or similar ones made by companies in their reports and commercial advertisements, a higher standard of caution should be required due to the legal and reputational consequences they may face[51].

The risk, indeed, is to face a situation where the commitment to sustainability and environmental issues could represent a mere *façade* bound to crumble in a context where climate change and social rights have turned into a prominent matter in the social opinion.

Such a situation could make it impossible for the company to live up to their responsibility towards the shareholders and consumers and, in doing so, posing a threat to their market credibility and, consequently, to the shares’ market value.

To give an example, it is possible to consider two cases where it is more than clear how greenwashing can have a deep impact on the reputation built by a company.

The first one concerns Legal & General Investment Management, one of the world’s largest asset manager company.

Said company suffered from reputational damage after being accused of greenwashing in – at least – two circumstances.

The first one concerned an “ESG” fund investing purely in securities issued by wholly Chinese government-owned entities.

The criticism found basis in the fact that the Chinese government does not result to be compliant to the UN Global Compact corporate sustainability principles relating to protection of human rights, labour market standards and environmental protection.

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[51] COLLETTI, GRATTAGLIANO, *Numeri, azioni e performance per schivare l’overdose di ESG*, in *Il Sole 24 ore*, 2022; DELMAS, CUEREL BURBANO, *The Drivers of Greenwashing*, in *California Management Review*, 2011, 64 ff.

The second one, instead, was about L&G Future World and Vanguard SRI products that revealed to have notable exposure to sectors like tobacco, gambling and defence.

The company rejected any allegation concerning greenwashing conducts and, even though it appears they were not fined by the regulation authority, the news spread out and the reputation was damaged, even if the accusation was neither confirmed nor denied.

The second case to be considered has to do with the so called "Dieselgate", a case involving the car-making company Volkswagen, begun in 2014 with the results of a report issued by the International Council on Clean transportation, an independent no-profit organization whose aim is to provide both technical and scientific analyses to environmental regulators[52].

The investigation on Volkswagen vehicles showed a discrepancy between the results of lab tests for the assessment of pollutants and the results of the road tests.

The scandal exploded when, in 2015, Volkswagen voluntarily disclosed the installation of a "defeat device" on the cars, a device that allows the cars themselves to recognize when they are being tested and so emitting less CO_2 than normal. Such device was installed, pursuant to the company's declarations, on at least 500.000 vehicles.

The effects of said scandal were visible on financial markets, where the company's stocks crashed, in few weeks, by 40%[53].

One of the main causes of the social scandal is to be found in the company's significant commitment to environmental sustainability through a strong communication which «shed light on the organization's desire to establish itself as a company leader in environmental sustainability, with particular reference to the

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[52] SIANO, VOLLERO, CONTE, AMABILE, *"More than words": Expanding the taxonomy of greenwashing after the Volkswagen scandal*, in *Journal of Business Research*, 2017, 27.

[53] JUNG, SHARON, *The Volkswagen emission scandal and its aftermath*, in *Global business and organizational excellence*, 2019, 6.

reduction in CO_2 emissions»[54].

The abovementioned cases show how it is crucial for companies to consider, nowadays, the risk of greenwashing in their business model[55]. In order to do so, attention should be paid not only to communication strategy and the subsequent compliance to the commitments publicly made but also to contractual partners, since «a multitude of regulation make companies responsible not only for their actions, but also for those of their contractual partners»[56].

Another aspect which should be considered as a central instrument for companies in order to avoid greenwashing accusation and the related reputational risk, is a sound corporate governance that requires a constant and regular review of the existing processes and controls in order to make them effective in terms of protection of the company's reputation.

Said revision could be helpful even when controlling the contractual partners' sustainability, in terms of environmental violations and human rights respect.

If necessary, indeed, a change in contractual partners could improve, from consumers' point of view, the company's reputation since being considered associated to "un-sustainable" suppliers could lead to a reputational damage.

From that point of view, in light of the previously mentioned EU legislation, a full compliance to the Taxonomy Regulation could be useful in order to improve both internal and external communication thus enhancing the credibility and the reliability granted by market operators and consumers.

3.1. The relevance of the abovementioned scandals shows how sustainability reports may be misused and may have potential harmful effects on stakeholders.

As for the consumers, it is now clear that transparency and information are

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[54] SIANO, VOLLERO, CONTE, AMABILE, *op. cit.*, 31.
[55] MAK, LUJINOVIC, *Towards a circular economy in EU consumers market – Legal Possibilities and Legal Challenges and the Dutch example*, in *Journal of European consumers and market law*, 2019, 4.
[56] LESCHER, *op. cit.*, 3.

two essential factors which have an influence on their decision and, due to that reason, it is mandatory to better understand the liability of the professional who declares to be socially responsible[57].

Environmental claims – advertising messages suggesting or implying a lower or reduced ecological footprint of the product or service offered by a company[58] – are turning into relevant advertising instruments considering the attention that consumers are giving to climate change and its consequences.

For that reason, as an instance, the Italian Antitrust Authority (AGCM) stated that professionals who want to use green claims in their marketing strategy have an informational burden to disclose them in a clear, true, accurate, unambiguous and not misleading way[59] because it creates an environmental expectation in the average consumer.

These considerations recall the concept of misleading business practices pursuant to article 21 of the *Codice del Consumo* (Italian Consumers Code) which incorporates in the internal law the article 6 of the Directive 2005/29/EC[60].

More specifically, it has been noted that given the misleading business practices definition provided by said article, even sustainability reports have the attitude to be included in the field of application of such rule[61].

This is, after all, a logical and coherent conclusion pursuant to the justifying reason of the law, since it aims to protect the market integrity and to make sure that consumers' decisions are not influenced by external factors and that demands to guarantee the correspondence between appearance and reality in an economic

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[57] BERTELLI, *I green claims tra diritti del consumatore e tutela della concorrenza*, in *Contratto e impresa*, 2021, 287.
[58] AGCM 4 agosto 2016 n. 26137 (Proc. PS10211), par. 87.
[59] AGCM 4 agosto 2016 n. 26137 (Proc. PS10211), par. 88.
[60] BERTELLI, *op. cit.*, 288.
[61] Article 21 of the Italian Consumers Code considers misleading a business practice that contains false information or, even though factually true in any way, even in its overall formulation can induce or it is able to mislead the consumer in relation to the elements enumerated by the Article itself. F. BERTELLI, *op. cit.*, 288.

context where environmental issues are considered socially crucial for consumers[62].

However, not only greenwashing is relevant in so called B2C relationships, but also in B2B ones, involving unfair competition issues.

This can be demonstrated if one considers a recent ruling by an Italian Court[63] - involving two companies and the advertising messages spread by one of them on its communication channels - which considered greenwashing a case of unfair business practice pursuant to Article 2598 par. 3 of the Italian Civil Code.

The Court found out that the company sued by the plaintiff (another company) staged unfair business practices in light of its marketing campaign, using vague and generic expressions with the aim of portraying itself as deeply devoted to sustainability issues.

Such conduct was detrimental both towards consumers, who could not make a correct choice in their purchasing, and to competitor company because the advertised green claims were not corroborated by any information concerning the efforts made in order to reduce the environmental impact of the production cycle[64].

These cases shed a light on the negative implication that greenwashing may have on companies and on their relationships with consumers, competitors and investors.

The same conclusions may be reached for financial funds and for their business activity.

With particular regard to the investors who may believe they have received misleading or erroneous information about particular financial products, relevant issues concerning damage compensation may emerge.

As a matter of fact, they could assume to be entitled to compensation pretending they have suffered loss as a result of any untrue or misleading statement

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[62] CALISAI, *Attività di impresa, sostenibilità e comunicazione. Il* greenwashing*: forme di tutela e rimedi civilistici*, in *Rassegna di diritto civile*, 2022, 498.
[63] See the Italian case-law by Tribunale di Gorizia, 25 novembre 2021.
[64] PISTILLI, *Il green-washing tra pubblicità ingannevole e pratica commerciale scorretta: quando può dirsi atto di concorrenza sleale?*, in *Il diritto industriale*, 2021, 384.

in a public document or prospectus.

If it is easy to affirm that no dispute will arise if the investment fund reaches the sustainability goals declared or that, at least, it will be particularly complex to ascertain and quantify the damage caused, the same could not be affirmed if, on the contrary, the fund does not reach the abovementioned goals.

There would be a consistent list of risks related to such conducts[65] but this case would be a "cherry-picking" one, which occurs when a company or a financial product is declared "green" only through the selection of some environmental or social sustainable development goals with an omission of the ones where there is a negative alignment.

In such circumstances, investors may declare that their investment was motivated by ESG raisons, even if that was not the case.

Nonetheless, many doubts could arise from the burden of proof point of view.

Both from the investors and from the company perspective giving proof of their own reasons is not easy at all.

It could be hard for a last-investor to prove the greenwashing perpetrated by the investment fund and it could be equally hard for the company to prove that the investor suffered no damage from the failure to reach sustainability goals.

Inevitably, it is impossible to give an answer on the distribution of the burden of proof because such matter should be expressly addressed by the legislator to dispel any doubts.

Courts, when assessing claims of misleading disclosures, will certainly have to analyze the overall framework going through all the available data, including, for example, the description of the fund's specific approach to the implementation of

[65] As highlighted by the ESMA in its project "Greenwashing project – COM request and project structure, initial thinking on a classification", 12nd of October 2022, where, as examples, are listed as main misleading qualities of claims: selective disclosure or hidden trade-off, empty claims, inconsistency or lack of fair and meaningful comparison.

ESG factors or the regular disclosure of the held securities[66].

However, green claims generally considered are a remarkable tool to stress that, currently, it is impossible to give a precise definition of what "sustainability" means considering that, as an instance, the Italian legislation specifies its meaning only in few and specific fields which, according to some Authors[67], demonstrates the impossibility to positivize it in order to guarantee a more precise and certain law enforcement. As a consequence, the same word may have different meanings based on the market field analyzed[68].

In the Italian case, an attempt to overcome impossibility to univocally define sustainability was made by the legislator when the green certification mechanism was introduced. In other words, in specific fields it is the law itself to establish the conditions allowing to label a product as "green" or "sustainable".

That system, however, despite being certainly useful, does not provide an adequate and general solution for the greenwashing issue considering that it is limited to pre-defined fields of application, by avoiding its general application.

3.2. When discussing the greenwashing issue, there's another aspect worth analyzing related to the criminal liability for the companies that commit such conduct.

In such context, the discussion must necessarily be related to the internal criminal law of the single State.

However, it is certain that if one deals with the criminal implications of greenwashing it must be taken into account that uncertainty upon potential misstatement determines a huge risk both for companies and for the public prosecutor in such a complicated matter. Consequently, a more detailed legislative framework has as its own consequence a reduced risk of misunderstanding and

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[66] ROY, DAVIDSON, SKINNER, Ropes&Gray LLP, *Litigation risks posed by "greenwashing" claims for ESG funds*, in *Harvard law school forum on corporate governance*, 2022, 3.
[67] TOHBANI, *op. cit.*, 425.
[68] CALISAI, *op. cit.*, 490.

misapplication of law.

For instance, in the Italian legislative framework, at least apparently, greenwashing conducts may fall under the crime *false dichiarazioni sociali* (companies' false statements) punished by the article 2621 of the Civil Code.

Such article states forth that companies' directors, general managers responsible for drafting mandatory accounting records, the auditors and the liquidators who knowingly expose false relevant facts or omit relevant facts whose disclosure is imposed by law about economic and financial situation of the company, in the legally required statements to shareholders and the public, in order to gain an unfair profit, are punished with imprisonment.

That being the content of the norm, it must be observed that it poses relevant issues.

Firstly, the norm is clear when it mentions facts related to the financial and economic situation of the company, which do not include sustainability-related reports.

On a literal level, consequently, the objective scope of application of the Article seems not to include non-financial statements *stricto sensu* defined.

However, a different conclusion may be reached by considering that, given the relevance of climatic and environmental matters for shareholders, consumers and investors, a sustainability-related report may have reputational implications towards the public and so the attitude to influence the shares' value and so it could be interpreted, even though merely indirectly, as a document with financial relevance.

However, even by adhering to such thesis, there would still be a relevant matter which may require a different approach by the legislative authority.

Considering the lack of a specific greenwashing crime, the field of application of the Article 2621 would be limited to the companies meeting the size and turnover thresholds abovementioned (paragraph n. 2), the only ones obliged to disclose information about their impact on sustainability matters. By so doing, an area of impunity would be left in the internal legislative system.

The problem could not be solved by the Article 2621 itself, considering its wording.

Such norm specifically deals with «legally required statements». Such expression, in order to be considered compliant to the constitutional principles, should be interpreted as if referred only to the undertakings required to publish such statements by the law and not also to the ones who decide to disclose sustainability-related information on a voluntary base.

In other words, a clear and precise legal framework represents a necessary condition in order to evaluate if greenwashing can be punished by national criminal law. Should that condition not be respected, there would be two consequences: the criminal law system would be deprived of its role as "extrema ratio" and undertakings would be discouraged to invest and to follow the path of sustainability due to the risk of facing a criminal conviction based on uncertain legal criteria.

Moreover, pursuant to the Italian Constitution principles, in order to prosecute a crime, the conduct that may fall under the law must be completely predictable[69].

With the Corporate Sustainability Reporting Directive, the European Union envisages the adoption of EU sustainability reporting standards tailored to EU environmental policies which shall be binding for companies reaching precise turnover and size thresholds.

Such act shall be subsequently transposed by the internal legislator.

In order to establish if greenwashing conducts may be contained by the Article 2621 of the Italian Civil Code, the national legislator will be demanded to transpose the Corporate sustainability reporting directive respecting accuracy and completeness criteria in terms of report information necessary to understand the undertakings' impacts on sustainability matters and, in any case, the content of the transposed directive shall be enforced between 2024 and 2028.

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[69] ECHR, Contrada v. Italy, case 7508/08.

Only by providing a precise legal framework for companies to comply with, the breach of such rules may be prosecuted by the criminal system.

There could be another norm which may include greenwashing as a relevant conduct for the criminal system.

The article 185 TUF (*Testo unico della finanza*)[70] incriminates market manipulation by stating, in the first paragraph, that whoever spreads false information or puts in place simulated operations or any other contrivance concretely able to determine a sensible alteration of financial instruments' price, is punished with imprisonment and fined from 20.000 to 5 million euros.

There would be no issue in including greenwashing conduct in the notion of "false information", considering its generic formulation and given that false information or misstatement on an undertakings' commitment towards sustainability matters may let the author of such conduct to gain an unfair competition on the market and, as such, to alter financial instruments' price.

However, the article 185 TUF would not provide a general instrument since it is specifically related to financial intermediaries and so all the other companies would be left out from its application field.

An extensive application of the norm would violate the prohibition of *in malam partem* analogy, which does not allow the judge to extent the field of application of a criminal law to situations that could not be contained in any of its literal meanings.

Besides, the relevance from a criminal point of view of such conducts, is also confirmed by an amendment proposed by the French legislator to the Consumers Code, establishing a financial penalty up to the 80% of the expenses incurred to realize the advertisement or the criminal practice and the publication of that sanction on the undertaking's website[71].

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[70] Legislative decree 24th February 1998, n° 58.

[71] *Quale disciplina per il greenwashing?*, available at *https://www.lexology.com/library/detail.aspx?g=96edb663-dc86-490b-b8f0-48265832f959*.

3.3. Firstly, it must be stressed that, in the financial sector, greenwashing can produce even worse effects since it can diminish the role of green finance as an instrument for the ecological transition «with consequences that can translate into reduced capital availability for green projects»[72].

Corporate and financial regulators appear more and more focused on investigating and prosecuting inadequate reporting and management of environmental risks in order to tackle the greenwashing issue, by scrutinizing climate-related projects and, more generally, the climate-related reporting standards.

As a matter of fact, greenwashing may arise if and when investment decisions are based on non-standardized and/or incomplete sustainability data or when the firms' communications to shareholders and investors use generic terminology and expressions when dealing with sustainability matters. That represents a significant regulatory issue considering that, nowadays, many investors are more and more concerned about climate and so they consider essential the respect of ESG-criteria in order to make their capitals flow in such projects or financial instruments.

Basing financial decisions on incomplete or generic information, that are not correctly corroborated by factual data, may bring to erroneous investment strategies that could lead to legal actions when based on misleading information published by undertakings.

Outside the EU regulatory framework, which is considered to be playing a leading role in green investments[73], regulatory bodies all over the world are playing a more incisive role in tackling greenwashing-related risks.

For instance, in the UK, in September 2021, the Competition and Markets Authority (CMA) published a Green Claims Code where six principles were detailed in order to meet regulatory expectations. It was specifically required that information about sustainable investments should be clear, accurate, selected, based on truthful

[72] RIZZELLO, *op. cit.*, 121.
[73] RIZZELLO, *op. cit.*, 111.

comparison and based on relevant evidence.

Such code was preceded by a letter from the FCA (Financial Conduct Authority) which encouraged sustainable investment fund managers to disclose environmental information and their investment strategies in a clear and non-deceptive way and proposed rules for asset managers concerning climate-related financial disclosure in order to protect consumers and their informed choice when buying products.

In the different context of the United States framework, it is worth to stress that the SEC (Security and Exchange Commission), in 2021, announced the creation of a dedicated task force whose aim is to focus on greenwashing conduct in order to improve ESG practices in investment disclosures.

Given such examples of what is currently happening in different States in the world, in order to better evaluate the relevance of greenwashing, it is possible to take the recent BNY Mellon case, decided by the SEC, as an example.

In 2022[74], the Security and Exchange Commission fined BNY Mellon Investment Adviser 1,5m $ for "misstatements and omissions" about ESG considerations in investment processes in a number of funds.

More specifically, the SEC found that from July 2018 to September 2021, the firm represented in numerous statements that all the investments in the funds had undergone an ESG quality review, even though that was not the case.

The SEC discovered that "numerous investments held by certain funds did not have an ESG quality review score as of the time of investment". While not always performing the ESG quality review, BNY Mellon took advantage of the investors' demand for strategies and investments that incorporate ESG criteria.

The developed considerations allow to affirm that, even from a regulatory point of view, greenwashing is putting Regulation Authorities in front of new and hard challenges.

[74] Security and Exchange Commission, 23rd of May 2022 in *https://www.sec.gov/litigation/admin/2022/ia-6032.pdf*.

Such authorities are demanded to cooperate with the legislator in an attempt to provide new and precise rules to avoid greenwashing phenomena in order to protect the regular financial markets' development by protecting both financial operators and investors who have the right to make a correct and informed choice when it comes to investing capitals in green and sustainable projects.

The challenge is further complicated by the fact that the financial sector is the most affected one by such conducts because it can be considered one of the leading fields in the green revolution.

4. What has been said so far, shows how greenwashing is certainly a pressing issue, considering that sustainability and climate change matters are now a daily concern both for consumers[75] and investors who, in their fields, show how their financial and commercial choices are strictly related to "green commitments".

At the same time, the analysis of the national and European legislative framework allows to see how rules created to tackle the greenwashing phenomenon are still not clear enough, in particular when it comes to the financial field.

Upon closer inspection, the observations made on a certain number of financial funds and their quality – with specific reference to the compliance to the ESG criteria – shows that even if more and more companies are listed in funds labelled as "green" or "sustainable" they do not take their commitment seriously enough, especially if one considers that out of 2.000 funds in an empirical study, 650 define themselves "sustainable" but only 104 were found really committed to ESG purposes[76].

In the same way, the UK Competition and Market Authority conducted an investigation on the impact of green marketing on consumers in a wide range of

[75] LANE, *Green marketing goes negative: the advent of reverse greenwashing*, in *European Journal of Risk Reputation*, 587; TRAPANESE, *I green claims nei rapport B2B e B2C, tra disciplina applicabile ed effettività della tutela. Nota a Trib. Gorizia, ord. cautelare del 25 novembre 2021*, in *Gazzetta Forense*, 2022, 786.
[76] LESCHER, *op. cit.*, 2.

sectors (including food, beverages, beauty products and cleaning products). The CMA global review of randomly selected websites and found that at least 40% of online green claims could result misleading, using tactics that could weaken consumer protection.

More specifically, the CMA listed three conducts that were enacted by companies and that could result in erroneous choices by environmentally committed consumers: vague claims, unclear use of language and reference to "natural products" without any empirical data to support that evidence; eco logos and labels not associated with accredited organizations; hiding or omitting certain information (e.g. products' pollution level). Moreover, there is an ongoing investigation into misleading environmental claims, carried out by the CMA itself, aimed to scrutinize eco-friendly and sustainability claims made by three fashion brands. The Authority, in particular, is evaluating if, among other things, such brands use criteria to establish products to be included in their "eco" collections are lower than what potential customers may reasonably expect and if statements made by such fashion brands about fashion accreditation schemes and standards are potentially misleading[77].

Moreover, financial services company Morningstar has affirmed that around 40% of European Union-listed fund assets are now labelled as "sustainable" (amounting to over 4 trillion euros) as a consequence of soaring demand for "greener" products.

However, as managers reclassify (or try to do so) their products as sustainability-committed, additional researches cut down the list of sustainable funds by 27%. That means that more than 1.600 funds, with a combined asset of $1.2 trillion, were reclassified because they were not aligned to ESG criteria.

Despite the EU's new legislative framework, the problem cannot be considered as completely solved. A critical point was found in loose definitions and not standardized ESG-criteria evaluation methods and such situations may allow

[77] CMA press release about ASOS, Boohoo and Asda investigation, in *https://www.gov.uk/government/news/asos-boohoo-and-asda-investigated-over-fashion-green-claims*.

CEOs to use different approaches when classifying their funds.

ESG rating criteria are a crucial factor in green finance considering that market actors rely on them in order to better evaluate their portfolios and their financial strategies. To do so a relevant role is played by sustainability reports. The concern is that companies draft such documents based on different data outcomes and ESG rating frameworks.

There are two main types of ESG scoring approaches: one relying on ESG disclosure, revolving around the way a company discloses sustainability-related information; another one focused on ESG risk management which aims to assess and to face the aforementioned greenwashing-related risks[78].

For instance, Refinitiv ESG scoring system measures the company's ESG performance taking into account ten categories: environmental resource use, emissions, environmental product innovation, workforce, human rights, community, product responsibility, management, shareholders, and CSR strategy[79].

The MSCI rating instrument, instead, bases its analysis on seven qualitative issue areas, which include community, corporate governance, diversity, employee relations, environment, human rights, and product, as well as concern ratings for six controversial business areas, namely: alcohol, gambling, firearms, military, nuclear power and tobacco[80].

Such examples provide a compelling argument to demonstrate how diverse ESG rating systems are and how it is crucial to provide uniform standards for companies to draft sustainability reports. In that context, EU's current legislative framework certainly represents a milestone in terms of uniform drafting criteria for sustainability reports.

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78 RIZZELLO, *op. cit.*, 95.

79 Environmental, social and governance score by Refinitiv, May 2022, available at *https://www.refinitiv.com/content/dam/marketing/en_us/documents/methodology/refinitiv-esg-scores-methodology.pdf*.

80 MSCI ESG metrics calculation methodology, December 2020, available at *https://www.msci.com/documents/10199/1283513/MSCI_ESG_Metrics_Calc_Methodology_Dec2020. pdf 92a299cb-0dbc-63ba-debb-e821bd2e2b08*.

In that direction, the CSR directive could play a leading role by extending the disclosure on sustainability data to a higher number of companies and, at the same time, making it compulsory to demonstrate the truthfulness of such data and introducing reporting requirements[81].

The most appreciable aspect is that once companies start disclosing sustainability data in a standardized way a further layer of transparency in their relationships with consumers and investors may be added, resulting in a more conscious investment and, consequently, in a reduction of potential legal disputes.

However, although the legislation obviously provides a solid base to rely on, from an operational perspective, companies are going to face numerous challenges in setting up their organizational strategies in order to comply with the new legislation's provisions.

More specifically, companies shall undertake to improve their due diligence when evaluating third parties' commitment to sustainable products and on how third parties will be kept updated about firms' sustainable fund offering[82].

At the same time, in order to provide a reliable and clear sustainability report and improve and drive value-creation and impact (thereby avoiding greenwashing accusations), companies shall enhance their internal capability to precisely analyze data and to identify potential limitations and to disclose eventual data limitation in pre-contractual information given to clients and to proactively assess whether any divestment or engagement needs to take place in case new sustainability data emerges that affects funds' ability to fulfil sustainability objectives, and also update fund documentation if appropriate and alert intermediaries and end-investors.

During the ongoing management of a fund, it is mandatory to maintain clear documentary records of decisions that have been made and why, and how, such

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[81] RAMENGHI, *Standard di trasparenza sulla sostenibilità: l'Unione Europea fa da apripista*, 17th of December 2022, in *https://www.ipsoa.it/documents/quotidiano/2022/12/17/standard-trasparenza-sostenibilita-unione-europea-apripista*.

[82] DELOITTE, *Greenwashing risks in asset management. Staying one step ahead*, May 2022, available at *https://www2.deloitte.com/content/dam/Deloitte/uk/Documents/financial-services/greenwashing-risks-in-asset-management.pdf*.

decisions meet the fund's ESG requirements.

Firms should also ensure that they have robust internal ESG policies in place and that both senior management and employees are trained to understand both the fundamentals of ESG and the risks of greenwashing.

Finally, a clear and precise communication when drafting green investments-related documents shall be used in order to describe and market financial products.

A further clarification is necessary. It is to consider that the investment strategy of the overall company and the one for the single fund are two different things and they may not match.

In order to reduce the greenwashing risk the whole investment strategy adopted by a company shall be disclosed and, more specifically, attention should be given to aspects such: investments' impact, exclusions or limitations of the company itself, or of the group the company belongs to or, still, the supply chain and the proxy voting choices adopted by the company itself.

Such considerations bring to the conclusion that greenwashing, and so ESG criteria, are not only a financial issue, but first of all an ethical and political matter. That is certainly true and it implies that a precise, clear, straight and strict legislative framework is crucial to avoid greenwashing in every form and uncertainty about what could be or could not be a greenwashing conduct[83].

In order to do so, for instance, antitrust law poses a relevant pillar in terms of misleading communication and those principles could be easily applied in greenwashing hypotheses to guarantee consumers' protection when dealing with companies and green investments.

As for the burden of proof in case of lawsuits, establishing it is a duty pertaining to the legislator. Two paths may be walked. It could be established that the firm shall demonstrate that the ESG criteria were fulfilled or, conversely, the end

[83] Such a legal framework can also facilitate «to avoid unsubstantiated accusations and protect» all the genuine green companies: see DE FREITAS NETTO, FALCÃO SOBRAL, BEZERRA RIBEIRO, DA LUZ SOARES, *Concepts and forms of greenwashing: a systematic review*, in *Environmental Science Europe*, 2020, 11.

investor could have the burden to prove to be the victim of a greenwashing conduct.

Financial services firms may face a high risk of shareholders bringing claims as a consequence of inaccurate or misleading statements disclosed about their ESG credentials. The shareholders, as an instance, should be able to demonstrate that they bought, sold or held their shares relating to the misleading information and that a manager within the firm knew or was reckless as to whether the statement was untrue or misleading.

At the current state, no claim under these causes of actions has gone all the way to trial. But the issue may not reside in finding a way for the company to defend itself from such claims but in the context in which greenwashing allegations are highly publicized and lead to a subsequent fall in share price, due to a damage in the firm's reputation.

Considering that nothing has currently been decided by the legislator, the smartest solution may be, *de jure condendo* in order to better protect shareholders' and investors' interests, and considering the ratio related to the sustainability data disclosure discipline, to establish a rebuttable presumption. In other words, it shall be presumed that the investment company made misleading and unclear declaration when proposing a product with the possibility to prove otherwise.

Despite disclosure on sustainability data, it could be hard for shareholders or investors to go through all the data provided by companies to demonstrate the greenwashing conduct.

At the same time, a legislative intervention is absolutely necessary if the criminal relevance shall be discussed. Such a delicate matter cannot accept an analogic interpretation.

Finally, greenwashing could be symptomatic of agency problems, which could engender fund underperformance or incomprehensible performance.

In that case, managers that greenwash will fall short on their dual mandate of delivering investment performance and ESG exposure.

Moreover, academic literature shows that corporate governance factors have a deep impact on sustainability reports.

More specifically, for instance, the relationship between board dimension and greenwashing «appears to be controversial»[84]. Two hypothesis were theorized.

Some authors argued that a larger board implies higher agency costs due to higher inefficiencies while others sustained the opposite thesis taking into account the lower influence that can be exercised by single members on the rest of the board. That circumstance would reduce agency costs[85].

There are concerns that unobserved factors unrelated to agency issues could drive both greenwashing and fund performance. It could be a way to detect greenwashing, together with other actions, of course carrying out stricter and deeper research on it.

This being the current framework and considering that only in recent times legislators, in the EU and other countries, seem to have taken notice of how relevant greenwashing can be in the path to fight against climate change and against disparities, it will be necessary to carefully observe how such new legislation will be enforced and, at the same time, to guarantee a correct and effective role to regulators and market authorities. One of the biggest challenges in such a context is that greenwashing behaviors may have the potential to erode consumers' faith in ESG fund market and, indirectly, such diminished trust would bring to an underfunding of projects aimed to reach the "net zero commitments" and climate neutrality.

At the same time, the hardships companies now have to face to comply with the current EU legislative framework and, in particular, to article 8 and 9 SFDR.

In December 2022, for instance, BNP Paribas Asset Management reclassified its 16 billion $ SFDR Article 9 Exchanged Trade Fund (ETF) to Article 8 since, without a major regulatory classification, such funds were found unlikely to be meet the

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[84] GHITTI, GIANFRATE, PALMA, *The Agency of greenwashing*, 5, available at *https://ssrn.com/abstract=3629608*.
[85] GHITTI, GIANFRATE, PALMA, *op. cit.*, 5.

criteria established in the Regulation[86].

This decision follows the same road taken by Amundi, another asset management company, which, in November 2022, downgraded the ESG classification of its funds following the SFDR enforcement activity[87]. Amundi's spokesperson stated that the EU regulatory framework appears to be excessively hard to comply with and it appears not to be aligned with market's development and necessities[88].

However, despite such struggles and an uncertain geo-political situation, ESG funds confirmed their pivotal role on the global markets, the sentiment remains positive and European «ESG ETFs may continue to see inflows, especially with funds seeking Article 9 labels under EU's Sustainable Finance Disclosure Regulation (SFDR) […]»[89].

Such aspect will definitely need attention in the years to come and, if necessary, all the proper actions to make sure such positive trend is encouraged and improved when necessary in order to tackle greenwashing and effectively making the attention to climate change and human rights an integral part of corporate governance.

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[86] See *https://www.etfstream.com/news/bnp-paribas-am-reclassifies-15bn-article-9-etf-range/*.

[87] See *https://www.reuters.com/business/cop/amundi-cuts-eu-sustainability-grade-100-funds-2022-11-22/*.

[88] See *https://www.dagospia.com/rubrica-4/business/quanto-sporca-questa-finanza-verde-ndash-sta-scoppiare-338418.htm*.

[89] BLOOMBERG INTELLIGENCE, *2023 outlook: global ESG*, 20th of December 2022, available at *https://www.bloomberg.com/professional/blog/2023-outlook-global-esg/*.

OPEN FINANCE AND CONSUMER PROTECTION: UNEASY BEDFELLOWS

Federico Ferretti * - Peter Petkoff **

ABSTRACT: *This article examines Open Finance and the risks that it poses for consumer protection. To exist, Open Finance needs enabling legislation. EU policy, as well as actual and proposed legislation, point to empowering consumers and give them control over their data. The traditional role of data in financial services markets is examined, as well as the transformative role of new data technologies to deliver new market structures. Drawing from the experience of Open Banking, the GDPR and the proposal for a Data Act this article questions to what extent the EU legal instruments are capable of delivering the goal, and consumers are factually empowered, remain in control of their data and are protected against the main risks of data-driven finance and the digital domain, where vulnerability is likely to be the norm. It shows how other jurisdictions such as the United Kingdom engage in a different approach to suggest a paradigm shift in the EU regulatory approach.*

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– 4.3. – The approach in the United Kingdom. – 5. Open Risks. – 5.1. Legal uncertainty and the lack of effective control. – 5.1.1. Contractual necessity ex Article 6(1)(b) GDPR. – 5.1.2. Consent ex Article 6(1)(a) GDPR. - 5.2. Black boxes and dark patterns. – 6. Conclusions.

1. This paper investigates the challenges posed by Open Finance in its quest to place consumers at its centre by empowering and protecting them. It questions the extent to which the envisaged legal framework is capable of offering the tools to achieve such goals.

Information to financial service markets has been crucial for long time. However, its function is undergoing a deep transformation. As the financial services industry embraces digitalisation, financial service providers use increasing data analysis and profiling to target customers, offer them customised products with personalised pricing, and create new products or services. Technological innovation has become the key aspect for new models in the provision of finance.[1]

Open Finance is the late frontier of the financial services' industry. Upon enabling legislation, it will refer to the obligation for traditional financial service providers to open access to their customers' financial data to third-party providers ('TPP') and share the data with them for the provision of a wider range of the same financial products or services, or the creation of new ones. It aims to expand TPP access to, and sharing of, the whole spectrum of financial data sources taken from a variety of financial providers and product lines such as savings, mortgages, consumer credits, investments, pensions, insurance, advice, etc. So devised, Open Finance advances significantly the transition to data-driven finance and may reshape the EU financial services industry.

So far, digital innovation and competition have been the thrust for the enactment of the late rich body of EU law which is currently being developed in

[1] CAPRIGLIONE, *The financial system towards a sustainable transition*, Law and Economics Yearly Review, 10(1), 2021, p 1.

response to the digital age.[2] At the same time, under EU policy, for Open Finance to exist customers need to factually control their data and be protected from abuses or misuses.[3]

However, data control, consumer empowerment and protection, and the processing of large amounts of diverse data in finance raise policy and legal issues. Regulation plays a pivotal role in the shaping of a EU single market fit for a sustainable digital economy, ensuring an optimal economic and social balance. The aim of this work is to analyse the extent to which the intersection of current and envisaged legal instruments may offer suitable solutions to achieve the envisaged policy goals and tackle the risks likely to be opened by Open Finance.

To reach its goal, this work is construed as follows.

Section 2 sets the theoretical foundations of data sharing in the financial services domain to show the transformative type and use of data to the changing economic cycle. It provides the necessary context of the new market structures in the transition towards open innovation and data-driven finance. Section 3 explores the role of regulation as enabler of innovation. It shows how the provisions of the Payment Services Directive 2 have instituted the new market model of Open Banking, presenting to the reader the mingling between banking and the data business as the

[2] E.g. 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, OJ L 337, 23.12.2015, p. 35–127; Directive (EU) 2016/680 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 by competent authorities for the purposes of the prevention, investigation, detection or prosecution of criminal offences or the execution of criminal penalties, and on the free movement of such data, and repealing Council Framework Decision 2008/977/JHA, OJ L 119, 4.5.2016, p. 89–131; Directive (EU) 2019/1024 of the European Parliament and of the Council of 20 June 2019 on open data and the re-use of public sector information, OJ L 172, 26.6.2019, p. 56–83; Regulation (EU) 2018/1807 of the European Parliament and of the Council of 14 November 2018 on a framework for the free flow of non-personal data in the European Union, OJ L 303, 28.11.2018, p. 59–68.

[3] Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions on a Digital Finance Strategy for the EU, COM(2020) 591 final; Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions on a Retail Payments Strategy for the EU, COM/2020/592 final; European Commission, Targeted consultation on open finance framework and data sharing in the financial sector, available at https://finance.ec.europa.eu/regulation-and-supervision/consultations/finance-2022-open-finance_en.

forerunner of Open Finance, where the whole financial service sector becomes involved. Like Open Banking, Open Finance is a concept enabled by legislation. Thus, drawing from the experience of Open Banking, Section 4 examines the difficult intersection between the legislative model of the PSD2 and data protection law. Equally, it studies the proposal for a Data Act as a regulatory initiative on fair access and use of data of general application with whom Open Finance specific regulation will need to coexist. The approach taken in the neighbouring jurisdiction of the United Kingdom ('UK') is also presented to show the feasibility of a functional alternative policy debate. Section 5 sets forth the risks identified from the legal analysis, advancing that the resulting legal uncertainty, coupled with weak legal instruments may pose great risks for consumers, especially in a complex environment susceptible to opacity and dark patterns, where vulnerabilities thrive. Section 6 concludes.

2.

2.1. Finance has long been an information industry. It is a common feature that financial institutions process and exchange a growing amount of personal financial data about their customers as part of their business models. For example, lenders and insurers access databases managed by sectoral associations or third-party providers (e.g. Credit Bureaus) in order to evaluate a consumer's application, the risks involved in a transaction and their management, or the prospective customer's creditworthiness or trustworthiness.[4]

Traditionally, the type of data exchanged are those of the concerned product line for the benefit of the concerned market players. For example, in credit relationships, traditional data are personal data relating to debt payments and financial accounts with lenders. But the level of product coverage in the databases

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[4] *SCIARRONE ALIBRANDI and MATTASSOGLIO, Le centrali dei rischi: problemi e prospettive, Diritto della Banca e del Mercato Finanziario, 2017, 4, p 764;* FERRETTI, *The law and consumer credit information in the European community: the regulation of credit information systems*, 2008, Routledge.

differs from country to country.[5]

Likewise, in the insurance sector traditional data are those relating to the insured risk, e.g. the behaviuor of a customer that is likely to cause the event.

In financial circles, the virtues of data sharing are usually portrayed in terms of more efficient processes and decision-making, or for a better management of financial risks or fraud situations. Most of the times, the benefits for consumers have been highlighted in terms of products/services better tailored to their needs, better quality, or cost-efficiency.[6] Moreover, the extensive use of financial data has been promoted to achieve a number of policy objectives. These include the facilitation of the access to more affordable and better-quality financial services for consumers,[7] the prevention of consumer over-indebtedness by limiting irresponsible/predatory lending,[8] and the contribution to financial stability by limiting financial institutions' loss risks.[9]

Under certain national systems, financial data can even be part of a broader information centralisation system managed by national central banks for the purpose of oversight of the financial system as a whole, i.e. they are an instrument for the prudential supervision of the financial system.[10]

Supported by classical economic and financial literature, dominant justifications for data sharing have started with the reduction of the information

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[5] ACCIS, *ACCIS 2020 Survey of Members – An Analysis of Credit Reporting in Europe*, 2020.

[6] E.g. BANK OF ENGLAND, *Should the availability of UK credit data be improved?*, Discussion Paper, May 2014; HM TREASURY, *Improving access to SME credit data: summary of responses*, June 2014, at https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/323318/PU1681_final.pdf; TURNER and VARGHESE, *The Economic Consequences of Consumer Credit Information Sharing: Efficiency, Inclusion, and Privacy*, 2010, OECD; JENTZSCH, *Financial Privacy - An International Comparison of Credit Reporting Systems*, 2007, Springer.

[7] OECD, *Facilitating access to finance - Discussion Paper on Credit Information Sharing*, at https://www1.oecd.org/globalrelations/45370071.pdf

[8] ACCIS, *ACCIS Response to Financial Services User Group (FSUG) Position Paper on the London Economics Study on Means to Protect Consumers in Financial Difficulty*, October 2013, at http://www.accis.eu/uploads/media/ACCIS_Response_to_FSUG_Position_Paper_October_2013.pdf.

[9] WORLD BANK, *General principles for credit reporting*, 2011, at http://documents.worldbank.org/curated/en/662161468147557554/General-principles-for-credit-reporting.

[10] JAPPELLI and PAGANO, *Public Credit Information: A European Perspective*. In *Reporting systems and the international economy*, 2003, MIT Press, p 81.

asymmetry between financial providers and borrowers for a better risk analysis, including problems of bad selection of customers, and the risk which arises from the characteristics of prospective customers that may increases the possibility of an economic loss.[11]

It is from this classic economic theory that the first correlations or associations have started to emerge, in particular the one that past behaviour is predictive of future behaviours.[12] Contrary to causation, under these assumptions the observation of human past through the data has been deemed to statically or repeatedly predict the likelihood of the future.

Such correlations also explain how economic theory has then moved to advance the proposition that data exchanges among financial service providers could play a major role as a customer's discipline device. Customers would know that the causation of an event, change in circumstances, or a delay or a default in re-payment compromise their reputation with all the other providers on the market, resulting in credit or insurance with more costly terms or by cutting them off from the market entirely.[13] Therefore, data sharing has been seen as reducing moral hazard. A customer's 'good name', i.e. their reputation collateral, contributes to provide an incentive to maintain certain behaviours or meet commitments much the same way as does a physical collateral.[14]

From another angle, the sharing of data on customer relationships has been also promoted to reduce the information monopoly of individual providers and the

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[11] STIGLITZ and WEISS, *Credit Rationing in Markets with Imperfect Information*, American Economic Review 71(3), 1981, p 393; BERGER and UDELL, *Relationship Lending and Lines of Credit in Small Firm Finance*, Journal of Business, 68, 1995, p 351; AKELOF, *The market for 'Lemons': Quality uncertainty and the market mechanism*, Quarterly Journal of Economics, 28(3), 1970, p 523; DIAMOND, *Monitoring and Reputation: The Choice between Bank Loans and Directly Placed Debt*, *Journal of Political Economy*, 99(4), 1991, 689; ADMATI and PFLEIDERER, *Forcing Firms to Talk: Financial Disclosure Regulation and Externalities*, Review of Financial Studies, 13, 2000, p 479.
[12] MILLER, *Introduction*. In *Reporting Systems and the International Economy*, 2003, MIT Press, pp 1.
[13] JAPPELLI and PAGANO, *Information Sharing, Lending and Defaults: Cross-Country Evidence*, *Journal of Banking and Finance*, 2002, p 2017.
[14] MILLER, *Introduction*, cit., p 1.

competitive advantage of large financial institutions, thus promoting market competition.[15] The problem of asymmetric information and adverse selection becomes greater for new market entrants, particularly providers from other Member States. This is particularly the case in the context of the EU single market and cross-border entry or cross-border provision of financial services. In addition to competitive disadvantages in relation to incurring greater risks of incorrectly estimating a customer's risk, without relevant information on customers new market entrants would be likely to attract precisely those who were rejected or overpriced by existing providers in the market.[16] This circumstance has induced recent literature to conclude that personal data exchanges, market structure, and competitive conduct are intrinsically intertwined in the financial services market. From the standpoint of industrial organisation, the availability of data shared by the sector can affect firms' choice not only of whether to entry another jurisdiction but also the mode of doing it, i.e. whether through the cross-border provision of services, the setting-up of branches or subsidiaries, or through mergers and acquisitions.[17]

One of the most apparent limitations of the above theoretical foundations lies in the neo-classical understanding or bias of the consumer as purely a *homo economicus* where they are seen as rational, informed, narrowly self-interested, vigilant and alert economic agents. In short, consumers who have the ability to make judgments towards their subjectively defined ends and who maximise their own utility and make intelligent and conscious choices, free of external events biasing or forcing their behaviour.[18] Such an economic interpretation appears inconsistent with

[15] European Commission, *Report of the Expert Group on Credit Histories*, May 2009.
[16] GIANNETTI, JENTZSCH, SPAGNOLO, *Information-Sharing and Cross-Border Entry in European Banking*, ECRI Research Report N. 11, February 2010.
[17] *Ibid.*
[18] STATEN and CATE, *Does the Fair Credit Reporting Act Promote Accurate Credit Reporting?*, Working Paper Series BABC 04-14, 2004, Joint Center for Housing Studies, Harvard University; BECKER, *The economic approach to human behavior*, 1976, University of Chicago Press; OSOVSKY, *The misconception of the consumer as a homo economicus: a behavioral-economic approach to consumer protection in the credit-reporting system*, 46(3) Suffolk University Law Review, 46(3), 2013, p 881.

the findings and increasing acceptance of the behavioural literature which attempts to explain relevant features of human behaviour and the consumers' cognitive limitations that cannot be explained under standard economic assumptions. It challenges economic assumptions by using a number of alternative social sciences or disciplines such as psychology, sociology, neurosciences to explore the real behaviour of human beings and how economic decisions are taken or dictated in the economic, cultural, and social context where they live.[19] Under this perspective, traditional financial data may only give a partial or fragmented picture of a customer's story or situation. They may present a distorted impression of individuals, not because the data are incorrect but for presenting a piecemeal picture making it seem incomplete and incorrect. In simple language, it is like taking a few silvers of a person and presenting that as the whole her/him.

Many other questions arise on the viability and assessment of those who are not in the databases. Arguably, those who are not in the databases or lack information for not having incurred into any financing operation are not negligible in numbers. Such a data sharing seems to penalise those segments of the population with a weaker financial history notwithstanding their personal circumstances, or ignoring behavioural biases or unstandardised conducts. From this point of view, the resulting theories appear to some extent artificial. The inability of these systems to detect atypical behaviours raises questions and problems because they also make

[19] The literature on behavioural economics is copious. Examples are JOLLS, SUSTAIN, THALER, *A behavioral approach to law and economics*, Stanford Law Review, 50, 1998, p 1471; DIAMOND and VARTIAINEN (edited by), *Introduction to behavioural economics and its applications* , 2007, Princeton University Press; CAMERER, ISSACHAROFF, LOEWENSTEIN, O'DONOGHUE, RABIN, *Regulation for conservatives: behavioral economics and the case for asymmetric paternalism*, University of Pennsylvania Law Review 151, 2003, p 1211; HANSEN and KYSAR, *Taking behaviouralism seriously: the problem of market manipulation*, New York University Law Review, 74, 1999, p 630. For literature specifically addressing borrowers' behavior see AGARWAL and ZHANG, *A review of credit card literature: perspectives from consumers*, 19 October 2015, at https://www.fca.org.uk/publication/market-studies/review-credit-card-literature.pdf; LEA, *Behaviour Change: Personal Debt*, no date, The British Psychological Society, at www.bps.org.uk/ behaviourchange; XIAO, *Consumer Economic Wellbeing*, 2015, Springer; WRIGHT, *Behavioral law and economics, paternalism, and consumer contracts: an empirical perspective*, NYU Journal of Law and Liberty, 2, 2007, p 470.

assumptions about what ‘normal’ behaviour is, where deviation from the established pattern is seen as undesirable or questionable, with all the following implications.

The use of personal data in the same financial product line - combined with the limitations or errors in the data and in the analytic tools – could also raise questions around the relationship between the data and pricing practices, for example making use of analytical data showing a consumer’s degree of willingness to pay more, liaising higher prices to higher perceived risks of a consumer, or demonstrating their inertia to switch products or services. In this respect, the biases behind the classic economic theories go against the foundations of human behaviours as heterogeneous and unpredictable.

2.2. As the underwriting of financial services and technologies evolve, and finance adapts to changing economic cycles and demographics, new business models recognise the limits of traditional data.

A limit of traditional data is that they are largely of historical nature. As they make use of a limited number of categories of data, they do not provide a reliable picture.

Technological innovation thus becomes the key to develop new models in the provision of personal finance.[20]

Technologically enabled financial innovation in consumer financial services (‘fintech’) capable of making use of large datasets from various unrelated sources (‘big data’) are one important facet of late innovations that is generating significant interest in financial markets for its possible disruptive effects in the sector.[21] Many Fintech developments are based on proprietary artificial intelligence systems (AI) and

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[20] BASKERVILLE, CAPRIGLIONE and CASALINO, *Impacts, challenges and trends of digital transformation in the banking sector*, Law and Economics Yearly Review, 9(2), 2020, 341.

[21] EUROPEAN BANKING AUTHORITY, *Discussion Paper on innovative uses of consumer data by financial institutions*, London, 4 May 2016; EUROPEAN BANKING AUTHORITY, *EBA Guidelines on creditworthiness assessment”, Final Report on Guidelines on Creditworthiness Assessment*, London, 19 August 2015; THE FINANCIAL INCLUSION CENTRE, *FinTech – Beware of the “Geeks’ Bearing Gifts?*, A Financial Inclusion Centre Discussion Paper, January 2018.

associated innovative uses of data. AI embraces different forms of computer systems that are able to learn from the data and their own experiences to solve complex problems or uncover patterns to predict future data or perform decision-making tasks (also known as machine-learning powered by mathematical algorithms able to create further algorithms based on accumulated data).[22]

As technologies evolve, and standards and appetite for financial services adapt to changing economic cycles and shifting demographics, a wider array of new data become available for analysis. These other data are those data gathered from diverse sources outside the standard product lines that financial institutions used to evaluate their clients. Their volume is greater than that of the traditional sources as they are usually taken from several data points mined from consumers' digital or offline activities. Even if such big data are not intuitively related to the product line and specific transactional risk, all data become financially relevant data with an open nature as to their sources. This also enables the leverage of a large volume of data from diverse sources and generated from various transactions to create new products or business models. The analysis of big data, increasingly in real time, drives knowledge and value creation across society in the fashion of a so-called 'open innovation', that is an innovation ecosystem where ideas and knowledge flow across firm boundaries sourced from both internal and external sources by means of sharing knowledge and information.[23]

These innovative techniques are capable of reshaping business models, underwriting criteria, and customer experiences. Their innovations associate the commoditization of big data analytics with an understanding of demographic changes, borrower needs, and how to connect to customers through new

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[22] CAPRIGLIONE, *Law and economics. The challenge of artificial intelligence*, Law and Economics Yearly Review, 10(2), 2021, p 189. See also MURPHY, *Machine Learning: A Probabilistic Perspective*, 2012, MIT Press, 2012; LANDAU, *Artificial Intelligence and Machine Learning: How Computers Learn*, 17 August 2016, Tech Innovation, at https://iq.intel.com/artificial-intelligence-and-machine-learning/

[23] CHESBROUGH, *Open Innovation: The new imperative for creating and profiting from technology*, 2003, Harvard Business School Press.

technological channels.[24] Reportedly, the 2008 financial crisis first, and the COVID-19 pandemic next, also have played an accelerating role marking the impetus and arrival of new market players pushing for competition over innovation to lower costs and gain market share.[25]

The fundamental drawback of the resulting market physiognomy is that data holders could legitimately refuse access to their data infrastructures on grounds of intellectual property protection, data protection concerns, security risks, or the permanence of unclear rules over liabilities towards the customers.[26]

The fintech ecosystem thus risks displaying low competition characterised by low elasticity of demand, lock-in problems, and exclusivity of services of mainstream providers,[27] as well as a legal vacuum of an alternative market operating outside the relationship between the traditional incumbents and their customers.[28]

3. Regulation can take a key role in enabling innovation in financial services and opening financial markets.

So far, in the EU this targeted regulation has been limited to the banking payments sector.

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[24] PricewaterhouseCoopers, *Is it time for consumer lending to go social?*, February 2015, at https://www.pwc.lu/en/fintech/docs/pwc-fintech-time-for-consumer-lending-to-go-social.pdf

[25] ZETZSCHE, BUCKLEY, ARNER and BARBERIS, *From FinTech to TechFin: The Regulatory Challenges of Data-Driven Finance*, 2017, EBI Working Paper Series n. 6; MALVAGNA and SCIARRONE ALIBRANDI A (edited by), *Sistema Produttivo e Finanziario Post COVID-19: dall'Efficienza alla Sostenibilità*, 2011, Pacini Giuridica.

[26] EUROPEAN COMMISSION, *Towards an integrated European market for card, Internet and mobile payments*, COM (2011) 941 final. See also COLANGELO and BORGOGNO, *Data, Innovation and Transatlantic Competition in Finance: The Case of the Access to Account Rule*', European Business Law Review, 31, 2020, p 573.

[27] EUROPEAN COMMISSION, *Commission staff working document Impact Assessment accompanying the Proposal for a directive on payment service in the internal market*, SWD (2013) 288 final; EUROPEAN CENTRAL BANK, Financial Stability Review – Special Feature, 2016, at https://www.ecb.europa.eu/pub/pdf/fsr/financialstabilityreview201611.en.pdf; UK COMPETITION AND MARKET AUTHORITY, *The Retail Banking Market Investigation Order 2017*, 2017, at https://www.gov.uk/government/publications/retail-banking-market-investigation-order-2017; THE NETHERLANDS AUTHORITY FOR CONSUMERS AND MARKETS, *Barriers to entry into the Dutch retail banking sector*, 2014, at https://www.acm.nl/sites/default/files/old_ publication/ publicaties/13257_barriers-to-entry-into-the-dutch-retail-banking-sector.pdf.

[28] EUROPEAN BANKING AUTHORITY, *Discussion Paper on the EBA's approach to financial technology (FinTech), EBA/DP/2017/02*, 4 August 2017.

As the data business permeates the global economy, banking and electronic payment services represent a frontier very exposed to competitive pressures from the infant fintech industry. For some time, payments have been characterised by electronic fund transfer systems having gone through the transition from paper payment services (e.g. cash, bank cheques, traveller's cheques, etc.) to electronic means. In the digital economy, payment accounts and data have become an essential source from which services can be provided, not only by banks but also by new market players capable of extracting value from them competitively.[29]

The thrust towards innovation and competition in a market traditionally dominated by the banking sector has motivated the substantial revision and reordering of the regime formerly established by the foregoing Payment Services Directive ('PSD1').[30] The late legislative intervention of the Payment Services Directive 2 ('PSD2')[31] has modernised the regulation of payment transactions and consumer protection to the changing needs brought by digitalisation.[32] It intervenes in the single payments market enabling a new banking model called 'Open Banking'.

Open Banking is not a technology-based concept but one of legal derivation. This model refers to the obligation under the PSD2 for banks to open access to their customers' payment accounts, banking transactions, and other financial data using interoperable interfaces ('Application Programming Interfaces') to third-party service providers ('TPP'). The PSD2 lays down the normative terms for the achievement of

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[29] MAVROMATI, *The Law of Payment Services in the EU: The EC Directive on Payment Services in the Internal Market*, 2008, Alphen aan den Rijn: Kluwer Law International; JANCZUK-GORYWODA, *Evolution of EU Retail Payments Law*, European Law Review, 40, 2015, p 858; GRIMIGLIANO, *The Lights and Shadows of the EU law on Payment Transactions*. In *Money, Payment Systems and the European Union*, 2016, Cambridge: Cambridge Scholars Publishing, p 25; VARDI, *Regulation of Payments after the PSD: Is there still a Role for Domestic Law*. In G *Money, Payment Systems and the European Union*, 2016, Cambridge: Cambridge Scholars Publishing, p 39.

[30] 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, OJ L 319, 5.12.2007, 1–36.

[31] 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, OJ L 337, 23.12.2015, 35–127.

[32] See, in particular, Recital 95 PSD2.

integrated retail payments in the EU that are inclusive of existing and new payment services delivered by new market players. Its ambitious goal is to take advantage of innovative technology-enabled solutions (fintech) to generate efficiencies and reach a broader market with more choice and integrated services. At the same time, it aims to pursue transparency and consumer protection.[33]

Thus, regulation has not just allowed, but it has mandated data access and sharing to develop a novel market model in the area of payments, in which traditional banking meets and is transformed by the data economy and the competition of innovative fintech firms. Mandating data access and sharing through regulation, the EU shifts the single market approach towards digitalisation and competition. Customers are required to grant consent to let the bank allow such access. Third-party providers can then use the customer's shared data. So doing, this model breaks the concentration of information in traditional banks, and allows the networking of accounts and data across a novel sector made of traditional and new service providers. Fresh competition is created for a more efficient provision of existing services, as well as the development of new ones.[34]

Examples are new methods of mobile payments or the delivery of complimentary personalised financial services such as financial advice, loans, insurance products. New uses may include comparing the customer's accounts and transaction history to a range of financial service options, aggregating data to create marketing profiles, or making new transactions and account changes on the customer's behalf. Shared data can facilitate the process of switching from using one bank's account to another bank's account. Financial service providers can look at

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[33] Recital 6, PSD2.

[34] On Open Banking see e.g. COLANGELO and BORGOGNO, *Data, Innovation and Transatlantic Competition in Finance: The Case of the Access to Account Rule*', cit.; EUROPEAN BANKING AUTHORITY, *Discussion Paper on innovative uses of consumer data by financial institutions, EBA/DP/2016/01* (4 May 2016); RABITTI and SCIARRONE ALIBRANDI, *I servizi di pagamento tra PSD2 e GDPR: Open Banking e conseguenze per la clientela*, in *Liber Amicorum Guido Alpa*, 2019, CEDAM, p 711; CIRAOLO, *Open Banking, Open Problems. Aspetti controversi del nuovo modello dei "sistemi bancari aperti"*, Rivista di Diritto Bancario, IV, 2020, p 611.

consumers' transaction data to identify the best financial products and services for them, such as new accounts that would earn a higher interest rate than the current account or different credit cards with a lower interest rate. Providers may get a more accurate picture of a consumer's financial situation and risk level to offer more profitable financial terms. New services may help consumers get a more accurate picture of their own finances before taking on debt or other financial services.

Broadly, the PSD2 operates on two interrelated levels.

At first, it intervenes in the establishment, authorisation, and supervision of payment firms and the regulation of payment transactions. Adjusting to the digital market, it enlarges the scope of coverage of the law, it clarifies the extent of consumer rights and service provider obligations, and it reinforces security and authentication requirements.[35]

Next, it recognises and regulates those TPP emerging from new fintech realties in payment services, bringing them under the same harmonised standards, requirements, and obligations on an equal footing with the traditional payment providers regardless of the business model they apply.[36] Introducing the so-called ‘access to account rule’, it opens the market to new services by granting TPP access to the customers’ payment accounts held in the banks. The latter must allow TPP authorised by the competent authority in their home Member State[37] access to the data contained in payment accounts in real time on a non-discriminatory basis.[38] By accessing and exploiting the large quantity of real-time data of the banking realm, technology firms have started disrupting retail financial markets.[39]

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[35] See the various provisions of Titles II, III and IV of the PSD2.
[36] Recitals 27-33 PSD2.
[37] Art. 36 PSD2.
[38] Art. 64 to 68 PSD2.
[39] BORGOGNO and COLANGELO, *The data sharing paradox: BigTechs in Finance*, European Competition Journal, 16, 2020, p 492; BORGOGNO and COLANGELO, *Consumer Inertia and Competition-sensitive Data Governance: The Case of Open Banking*’, Journal of European Consumer and Market Law 4, 2020, 143; DI PORTO and GHIDINI, *I access your data, you access mine. Requiring data reciprocity in payment services*, IIC - International Review of Intellectual Property and Competition Law, 51, 2020, p 307.

The 'access to account rule' has therefore become the tool to unlock the data power of banks over innovative fintech firms. Access by TPP is to 'payment accounts' only, defined as accounts "held in the name of one or more payment service users *(…)* used for the execution of payment transactions".[40] Savings accounts and other non-payment accounts seem therefore excluded from the application of the PSD2.[41]. Access to payment accounts shall take place in a secure way under the guidelines laid down by the European Banking Authority.[42] Any access may occur only upon conclusion of a contractual relationship between the account holder and a TPP, unusually framed as 'explicit consent' by the PSD2, precisely for the purpose of providing those kinds of services that need the data contained in the account.[43] Under the PSD2, TPP are subject to conduct of business restrictions and requirements that do not allow them to hold the payer's funds in connection with the service, store sensitive payment data of the service user, or process data beyond that necessary to provide the service.[44]

These provisions have given rise to a market model that shifts from the money business to the data business and vice versa, where account data are shared with new market players of the fintech industry capable of capturing or creating value

[40] Art. 4(12) PSD2.

[41] This circumstance also finds support in Case C-191/17, *Bundeskammer für Arbeiter und Angestellte v ING-DiBa Direktbank Austria Niederlassung der ING-DiBa AG* [2018] EU:C:2018:809 where the Court confirmed that accounts which allow for sums deposited without notice and from which payment and withdrawal transactions may be made solely by means of a current account do not come within the concept of payment account.

[42] Art.95 PSD2, followed by European Banking Authority, *Final draft RTS on SCA and CSC under PSD2 (EBA-RTS-2017-02)* (23 February 2017); 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 C/2017/7782, OJ L 69, 13.3.2018, p. 23–43; EUROPEAN BANKING AUTHORITY, *Opinion of the European Banking Authority on the implementation of the RTS on SCA and CSC (EBA-Op-2018-04)*, 13 June 2018.

[43] For Payment Initiation Services, see Art. 66 PSD2, stating that "when the payer gives its explicit consent for a payment to be executed and (*omissis*)"; for Account Information Services, see Art. 67 PSD2 providing that "the account information service provider shall: (a) provide services only where based on the payment service user's explicit consent; (*omissis*)".

[44] Art. 66(3) PSD2.

around existing un- or under-exploited assets.[45]

In the Open Banking model, therefore, the new paradigm reflects the unbundling of the provision of financial services in more market segments, and the disintermediation of the banking industry. The latter, however, becomes key in the Open Banking ecosystem, assuming a new form of forced intermediation between the service user (the account holder) and the fintech TPP. The services can only exist via the traditional providers, creating a new market structure where the latter become digital platforms for the distribution of financial services. They facilitate and create a dependency for the contractual interactions of two or more market agents, but without having any contractual relationship with one of them (the TPP), at the same time allowing the other one (the customers) to continue the fruition of their own services.

The Open Banking environment thus generates indirect network effects, making possible bilateral ventures otherwise not attainable with other means,[46] at the same time producing new dependencies.

In this way, the Open Banking market structure moves towards a confluence between traditional financial service providers becoming technological firms (but still on the money business) and technological firms entering the financial services market, where the latter may be infant fintech businesses or established technological giants already dominating the data service market (the so-called 'Tech-Fin' or 'Big-Tech').[47]

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[45] CHESBROUGH, *Business Model Innovation: Opportunities and Barriers*, Long Range Planning, 43, 2010, p 354.

[46] ZACHARIADIS and OZCAN, *The API economy and digital transformation in financial services: the case of Open Banking*, SWIFT Institute Working Paper No. 2016-001, at https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2975199; MILANESI, *A new banking paradigm: the state of Open Banking in Europe, the United Kingdom and the United States*, TTLF Working Papers No. 29, Stanford-Vienna Transatlantic Technology Law Forum, 2017, from https://law.stanford.edu/publications/a-new-banking-paradigm-the-state-of-open-banking-in-europe-the-united-kingdom-and-the-united-states/

[47] ZETZSCHE D ET AL, *EBI Working Paper Series n. 6*, 2017; DI PORTO and GHIDINI, *I access your data, you access mine. Requiring data reciprocity in payment services*, cit.; STULZ, *FinTech, BigTech, and the future of banks*', NBER Working Paper No. 26312, 2019, at https://www.

From this angle, the PSD2 is the law that encourages an expanding use of personal data and enables a vast array of newcomers to access increasingly more data sources for novel purposes.

True, payment accounts contain a vast amount of data for analysis, from financial data relating to incoming and outgoing transactions, balances, preferences, patterns, dependencies, behaviours, aspects of the social life, etc. They can be an exceptional tool for consumer profiling and predictive purposes. At the same time, however, they can also reveal behavioural biases and vulnerabilities in all aspects of consumers' life, especially if integrated with data from other unrelated sources and processed by algorithms powered by artificial intelligence technologies.

4. Following the opportunity provided by the PSD2 of opening-up bank account data for TPP access, the EU legislator plans to extend the Open Banking model gradually in a transition to data-driven finance to a broader range of financial services. As part of the priorities of the Digital Finance Strategy to promote data-driven innovation in finance, the EU aims to establish a common financial data space through a number of more specific measures.[48] Of relevance here is the priority to create enhanced data sharing and access to, and reuse of, data in the financial sector paving the way to 'Open Finance'.

Upon enabling legislation, Open Finance will be the next step in the evolution of Open Banking, whose reach becomes expanded by empowering consumers with further control over their data and granting TPP access to more data sources for a wider range of financial services such as savings, mortgages, consumer credit,

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nber.org/papers/w26312. For example, note that Google has secured an e-money license after Lithuania granted authorisation. The license enables the company to process payments, issue e-money, and handle electronic money wallets. It gives permission to operate across the EU via the passporting rights system. Likewise, Facebook and Amazon obtained licenses in Ireland and Luxembourg. See SEPUTYTE and KAHN, *Google Payment Expands With E-Money License From Lithuania*, Bloomberg, 21 December 2018, at https://www.bloomberg.com/news/articles/2018-12-21/google-payment-expands-with-e-money-license-from-lithuania.

[48] Digital Finance Strategy, cit.

investments, pensions, insurance, financial advice, etc. It extends the delivery of digital financial services via interoperable interfaces, creating new fintech industries, and developing further service disintermediation and new forms of data intermediation. With Open Finance it is created a networked system that is no longer limited to payment services but that relies on the ability to leverage a broad range of financial institutions' infrastructures to provide a financial service that the provider does not offer to consumers outside of its existing footprint.

As for Open Banking, the key element to enable Open Finance is the regulation to be implemented.

4.1.The starting point about the nature of a legislative framework for Open Finance is rooted in the consolidation and extension of Open Banking-like legislation, as well as overlapping legislation relating to data.

As a consumer-centric business model, from the angle of consumer protection the most important building block of Open Finance is that of consumers' control of the data pertaining to them.

Consumer financial data processing triggers the application of the GDPR, thus overlapping with a PSD2-like and creating a legal environment where financial regulation and data regulation blend. Therefore, the question of whether this blended regulation is robust enough to foster a transition to Open Finance becomes essential.

As a EU Regulation, the GDPR has direct effect designed to eliminate risks of national particularities and diversity of practices, which would frustrate the goal of achieving uniformity.

Prima facie the principal purposes of the PSD2 model and the GDPR are in contrast one another, with the former endorsing the stimulus for expansive data sharing, whilst the latter protecting and restricting the freedom to share them.

In the absence of derogations, it is in light of the significance of data protection legislation that one should read the processing of big data in financial services, including data in Open Finance.[49]

The GDPR formulates the conditions under which data processing is legitimate.

Among the many aspects regulated by the GDPR, some require attention for their overlap with the PSD2 model.

Within the respect of the key principles of purpose limitation and data minimisation,[50] the GDPR sets the legal requirements for a valid basis for legitimate data processing. A data controller must be able to provide a base for the processing activity only if it can claim that the processing relies on one of the criteria established by the law.[51] The set of criteria is exhaustive, so that if a data controller is unable to rely on one of them the processing is unlawful. Financial data are considered of non-sensitive nature.[52]

For Open Finance, the relevant legal bases for a legitimate processing under Article 6 GDPR are in principle that the data subject has unambiguously given consent or that the data processing is necessary for the performance of a contract to which the data subject is party or to take steps at the request of the data subject prior to entering a contract. The complications surrounding the choice between the two legal bases will be discussed in the next Section.

Moreover, in the case at study fintech solutions make an extensive use of profiling techniques which constitute the business model. Where profiling occurs, the GDPR requires for an additional layer of control. It postulates that individuals have the right not to be subject to a decision based solely on automated processing to

[49] See also Recital 90 PSD2.
[50] See Art. 5 GDPR, in particular where it states "personal data must be collected for specified, explicit and legitimate purposes and not further processed in a manner that is incompatible with those purposes" (purpose limitation) and "personal data must be adequate, relevant and limited to what is necessary in relation to the purposes for which they are processed" (data minimisation).
[51] Art. 6 GDPR.
[52] This is so as they are not included in the exhaustive list of sensitive data of Art. 9(1) GDPR.

evaluate certain personal aspects of a person.[53] Profiling can be used if it is necessary for contractual necessity, it is authorised by EU or national law, or it is based on the data subject's ‘explicit consent’. In the case of automated decisions based on ‘explicit consent’ or contractual fulfilment, controllers must respect a right for data subjects to obtain human intervention, express their point of view, and contest decisions.[54]

Another important provision of the GDPR to empower data subjects is the right to data portability, i.e. their right to transmit or have the data transmitted to another controller where the processing is based on the legal bases of ‘consent’ or on a contract.[55] Consent and contract necessity are only two of the grounds for lawful data processing as per Article 6 GDPR. The processing grounds of compliance with a legal obligation, protection of vital interests, the performance of a task carried out in the public interest, and the pursuit of legitimate interests of data controllers or third parties are therefore excluded from the data portability right. This narrow scope of the right is further restricted to data which data subjects have provided themselves to the data controller—so-called volunteered data. The scope of the provision includes active observation of the data but excludes derived or inferred data, or anything resulting from the analysis of the data.[56]

From these norms of the GDPR related to the PSD2 model, it emerges that in principle the two laws are not necessarily in conflict - as it may have *prima facie* appeared – since they both aim to grant transparency and user control.

However, inconsistencies arise from their cohabitation and coordination, starting from the legal basis legitimising the use of relevant financial data and the ensuing rights and obligations of the parties.

The leitmotiv of ‘consent’ in the two laws has already triggered discussions and uncertainties within Member States and stakeholders regarding the correct

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[53] Art. 4(4) GDPR.
[54] Art. 22 GDPR.
[55] Art. 20 GDPR.
[56] ARTICLE 29 WORKING PARTY, *Guidelines on the right to data portability*, Adopted on 13 December 2016, last Revised and adopted on 5 April 2017.

implementation of the PSD2, especially in relation to measures concerning the protection of personal data.[57]

As far as data protection is concerned, Article 94(2) PSD2 stipulates that "payment service providers shall only *access, process and retain* personal data necessary for the provision of their payment services, with the *explicit consent* of the payment service user" (emphasis added). Moreover, other provisions of the PSD2 refer to 'consent' as regards authorisation of a payment transaction. Under Article 64 PSD2 "a payment transaction is considered to be authorised only if the payer has given *consent to execute the payment transaction*" (emphasis added). This 'consent' to authorise a payment is later referred as 'explicit consent' in Articles 65 and 66 PSD2 when specifying the actions that banks need to perform to ensure the payer's right to use a Payment Initiation Service[58] or an Account Information Service.[59] Arguably, the 'consent' referred in these provisions do not relate to access or processing of data but to the authorisation of a service. It signifies contractual agreement albeit equivocally normed as 'explicit consent' in the realm of contract law.

4.2. In the thrust towards innovation and competition, the European Commission has recently unveiled a proposal for a Regulation on fair access to and use of data, the so-called 'Data Act' (or 'Proposal')[60] pursuant to the European strategy for data.[61]

The Proposal addresses market concentration and it has the aim of ensuring

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[57] See e.g. EUROPEAN DATA PROTECTION BOARD, *Letter to Sophie in 't Veld, Member of the European Parliament*, 5 July 2018; BEUC, *Consumer-Friendly Open Banking*, 20 September 2018; EUROPEAN BANKING FEDERATION, *European Banking Federation's comments on the Article 29 Working Party guidelines on consent* (wp259), 23 January 2018.
[58] Art. 66 PSD2.
[59] Art. 67 PSD2.
[60] European Commission, Proposal for a Regulation of the European Parliament and of the Council on Harmonised Rules on Fair Access to and Use of Data (Data Act), COM/2022/68 final.
[61] Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions: A European Strategy for Data, COM/2020/66 final.

fairness in the allocation of value from data and foster access to and use of data, creating a horizontal cross-sectoral governance framework. To achieve its goal, it ensures that a wider range of stakeholders gain availability of more data for innovative uses.

Of relevance here are the generalised rules on making data generated using a product or service mandatorily available to their users.[62] Products shall be created, and services provided, in such a manner that by default data generated by their use are easily, securely and directly accessible to the users.[63] When users wish to transfer these data to other providers, the data holders need to ensure that the data are shared transparently in fair, reasonable and non-discriminatory conditions.[64] To do so, the Proposal prohibits unfair contracts relating to data-related obligations and introduces a new unfairness test to protect weaker commercial parties such as SMEs.[65] The sharing may occur only upon request by users.[66] This requirement accords to them a portability right, extending the portability right already conferred to data subjects by Article 20 GDPR (above). This new extended portability right grants users the right to access and make available to third parties to any data irrespective of their nature as personal or non-personal, of the distinction between 'actually provided' or 'passively observed' data, and of the limited legal basis of the processing under Article 20 GDPR. Moreover, unlike the GDPR that reduces the reach of the right by providing that controllers may transfer data where it is 'technically feasible', the Proposal mandates such a technical feasibility.[67]

As a horizontal proposal, the Data Act envisages the above basic rules for all sectors as regards the rights to use data, but it leaves to vertical legislation the establishment of more detailed rules for the achievement of sector-specific

[62] Art 1 Data Act.
[63] Art 3 Data Act.
[64] Art 8 Data Act.
[65] Art 13 Data Act.
[66] Art 5 Data Act.
[67] Art.5 See also Recital 31 Data Act.

regulatory objectives. For Open Finance, therefore, it will not yet introduce new data access rights in the financial sector, but it hints at a subsequent legislative vertical initiative aligned with the horizontal principles provided by the Data Act.[68] The anticipated review of the PSD2[69] and future framework for Open Finance would need to converge with the horizontal rules of the Data Act, provided that the latter will be confirmed through the EU legislative process.

In any event, the provisions of the Data Act on the binding nature of data transfer clearly generalise the mandatory data sharing already adopted by the PSD2 upon consent of the customer.

As a consumer-centric initiative focusing on consumer empowerment, therefore, the key questions remain whether the PSD2 model and the Data Act are robust enough for consumer protection beyond the alleged benefits of Open Finance, and what the risks for consumers are.

4.3. While in the EU the PSD2 enabled Open Banking contemplating both retail and corporate banks, in the UK the Competition and Market Authority ('CMA') launched it by first mandating to the country's nine largest banks only to open to TPP regulated by the Financial Conduct Authority ('FCA'), and providing standardised rules subject to the consent of their customers.[70] Through this experience it has led the public debate on Open Finance and the set-up of an advisory group to drive forward the strategy for its implementation.[71]

The UK approach is grounded on principles and conduct of business rules,

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[68] Data Act, explanatory memorandum p. 5.

[69] European Commission, Consultation Document Targeted Consultation on the Review of the Revised Payment Services Directive PSD2,(2022), available at https://finance.ec.europa.eu/regulation-and-supervision/consultations/finance-2022-psd2-review_en.

[70] COMPETITION AND MARKET AUTHORITY, Retail Banking Market Investigation Order 2017, at https://assets.publishing.service.gov.uk/media/5893063bed915d06e1000000/retail-banking-market-investigation-order-2017.pdf.

[71] FINANCIAL CONDUCT AUTHORITY, *Business Plan 2019/20*, 2019, at https://www.fca.org.uk/publication/business-plans/business-plan-2019-20.pdf; FINANCIAL CONDUCT AUTHORITY, *Advisory Group on open finance*, at https://www.fca.org.uk/firms/adv isory-group-open-finance.

where the latter are best seen to adapt to the specific mechanisms of Open Finance.

In the draft principles of Open Finance, it has been set out that regulation would be needed to ensure that consumers are protected, data is used ethically and in a way that they have consented to and expect, and that liability is clear and effective redress ensured when problems occur.

To achieve the goals, the debate focuses on TPPs being authorised and held to appropriate standards. They should be subject to appropriate threshold conditions on financial resources, appropriate systems and controls, operational resilience requirements and security architecture. Regulation of TPPs and their activities emerges in the public debate to ensure consumers do not face a patchwork of regulated and unregulated activities, which could also help ensure that consumers have access to the Financial Ombudsman Service when needed. Concerns are express with regard to the UK data protection legislation. Accordingly, the UK GDPR is not considered to be designed and adequate to support a full Open Finance framework. Therefore, any new regulation needs to work with UK GDPR.[72] The Information Commissioner's Office (ICO) itself agrees that the UK GDPR applies to the general process of personal data rather than providing for any specific sector. To the extent that the UK GDPR proves insufficient, therefore, the approach is that any additional regulation should be focused on the specific mechanisms of Open Finance.[73]

Hence, the general theme in the UK differs from the EU debate in that the experience of Open Banking should be the starting point in terms of liability, data rights, standards and ethics. At the same time, however, the specific risks in each financial sector should be considered and integrated in the regulation of Open Finance. From this perspective, additional layers of consumer protection are needed in the form of conduct of business rules.

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[72] FINANCIAL CONDUCT AUTHORITY, *Open Finance, Feedback Statement FS21/7*, March 2021, at https://www.fca.org.uk/publication/feedback/fs21-7.pdf

[73] INFORMATION COMMISSIONER'S OFFICE, *The Information Commissioner's response to the Financial Conduct Authority's call for input on open finance*, 2020, at https://ico.org.uk/media/about-the-ico/consultation-responses/2617565/ico-response-fca-open-finance-20200313.pdf

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5.1. As noted, Open Finance is meant to be customer-centric and rest on consumers' control of the data.

It is therefore essential to determine what is the legal basis for data processing, and how consumers are empowered and remain effectively in control.

Under the PSD2 it is already unclear whether the processing of account data finds its legal basis in the contractual necessity under Article 6(1)(b) GDPR or though the consent of the customer under Article 6(1)(a) GDPR.

Article 94(2) PSD2, under Chapter 4 titled "data protection", stipulates that "payment service providers shall only *access*, *process and retain* personal data necessary for the provision of their payment services, with the *explicit consent* of the payment service user" (emphasis added). In so doing, the PSD2 seems to qualify the basis for processing account data with 'explicit consent'. However, the EDPB in a letter addressed to a European Member of Parliament (i.e. not laid down in the form of official guidelines) considers the 'explicit consent' of Article 94(2) PSD2 as contractual consent, thus not interfering with contractual necessity. According to the Authority,

"article 94(2) of PSD2 should be interpreted in the sense that when entering a contract with a payment service provider under PSD2, data subjects must be made fully aware of the purposes for which their personal data will be processed and have to explicitly agree to these clauses. *Such clauses should be clearly distinguishable from the other matters dealt with in the contract* and would need to be *explicitly accepted by the data subject*. The concept of explicit consent under Article 94(2) of PSD2 is therefore *an additional requirement of a contractual nature and is therefore not the same as (explicit) consent under the GDPR*"[74] (emphasis added).

Arguably, holding the 'explicit consent' as contractual would not explain why it

[74] EUROPEAN DATA PROTECTION BOARD, *Letter to Sophie in 't Veld, Member of the European Parliament*, cit.

has been expressed in the norm addressing data protection under a separate dedicated heading of the PSD2. In addition, this interpretation not only would dispute the letter of the norm where it affirms that 'explicit consent' is required for the access, processing and retention only to the extent necessary for the provision of the services, but it would also overlap with the contractual meaning of 'consent' used in Articles 64-67 PSD2. These other provisions of the PSD2 refer to 'consent' as regards authorisation of a payment transaction. Under Article 64 PSD2 "a payment transaction is considered to be authorised only if the payer has given *consent to execute the payment transaction*" (emphasis added). This simple 'consent' to authorise a payment is later referred as 'explicit consent' in Articles 65 and 66 PSD2 when specifying the actions that banks need to perform to ensure the payer's right to use a PIS.[75] Equally, AIS "shall provide services only where based on the payment service user's *explicit consent*".[76] (emphasis added). The 'consent' and 'explicit consent' referred in these provisions do not relate to access or processing of data but to the authorisation of a PIS or AIS service. It signifies contractual agreement albeit equivocally normed in the 'simple' versus 'explicit' dichotomy in the realm of contract law.

Likewise, the Data Act is silent on the legal basis for data processing, referring to a "request" by the user.[77] Where such user is not a data subject, the Data Act makes express reference to "a valid legal basis under Article 6(1)" of the GDPR.[78] True, the Data Act is meant to complement and be without prejudice to the GDPR,[79] although it would be clearer and desirable if it explicitly and unequivocally specified that in case of conflict between the two the provisions of the GDPR should prevail.[80]

[75] Art. 66 PSD2.
[76] Art. 67 PSD2.
[77] Articles 4 and 5 Data Act; Recital 31 Data Act.
[78] Article 4 Data Act.
[79] Article 1(3) Data Act; Recital 7 Data Act.
[80] This is to avoid risks of interpretation regarding e.g. the special law vs general law or posterior vs anterior law relationship between the two. See also EDPB-EDPS, *Joint Opinion 2/2022 on the Proposal of the European Parliament and of the Council on Harmonised Rules on Fair Access to and Use of Data (Data Act)*, 4 May 2022, p 10.

At any rate, the legal uncertainty over the use of ‘consent’ or ‘contractual necessity’ remains. Either way, moreover, both legal bases for data processing could be problematic to ensure consumer control in an Open Finance ecosystem.

5.1.1. The legal basis of contractual necessity needs to be considered in the context of the obligations of purpose limitation and data minimisation laid down by the GDPR. Data needs to be as little as possible and they must be collected for specified, explicit and legitimate purposes. They should not be further processed in a manner that is incompatible with the initial purposes.[81] These requirements already pose some problems as to their suitability with Open Finance, since the data were originally collected under a different set of contracts in different product lines.

At any rate, data processing must be objectively “necessary” for the performance of the contract or for taking steps prior to entering into a contract. It is established case-law that the requirement of ‘necessity’ does not equates to what is permitted by or written into the terms of a contract, especially consumer contracts that typically are not negotiated on an individual basis.[82] Instead, the assessment needs to be fact-based vis-à-vis the objective pursued. If there are other realistic less intrusive alternatives the processing is not necessary. Therefore, it does not include processing which is useful but not objectively necessary.[83]

Contractual necessity must be interpreted strictly with particular regard to the aim, purpose or objective of the product or service. A controller needs to be able to demonstrate how the main subject-matter of the specific contract with the data subject cannot, as a matter of fact, be performed without the processing.[84] Moreover, where contracts consist of separate services or options that can be

[81] Article 5(1)(b) and (c).
[82] Case *Heinz Huber v Bundesrepublik Deutschland* (C-524/06) ECLI:EU:C:2008:724.
[83] Joined cases *Volker und Markus Schecke GbR* (C-92/09) and *Hartmut Eifert* (C-93/09) *v Land Hessen* ECLI:EU:C:2010:662.
[84] EUROPEAN DATA PROTECTION BOARD, *Guidelines 2/2019 on the processing of personal data under Article 6(1)(b) GDPR in the context of the provision of online services to data subjects*, 16 October 2019.

performed independently of one another, the applicability of contractual necessity needs to be assessed in the context of each of those services or options separately.[85] Crucially, if a processing is necessary for the controller's business model but not for the strict provision of the service, the requirement of contractual necessity cannot be satisfied but other legal bases must be used.[86]

Within the Open Finance ecosystem in particular, and with big data generally, all data would become 'necessary' but it is doubtful the extent to which such a necessity is for the objective delivery of the service rather than the providers' business models. Arguably, the boundaries are blurred but the suspicion is that in many cases the processing leans more towards the satisfaction of the needs of new business models. In most instances, the primary roles and functions of financial services remain the same, but the way they are undertaken is changing —payments still need to be made, loans granted, savings and investments made, etc. Those specific activities still need to be undertaken as ever and do not change. What changes is how these activities are carried out and the roles undertaken by the providers. Moreover, it has to be reminded that most of the data processing for the provision of Open Finance services rests on correlations, not on causation.

Arguably, in conclusion, contractual necessity may be a lawful basis for processing on occasions to be verified case-by-case but hardly as the one of general applicability.

5.1.2. Consent under the GDPR is probably one of the most complicated lawful bases to implement,[87] and the addition of Article 94(2) PSD2 does not help.

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[85] *Ibid* p. 11.

[86] *Ibid*.

[87] Exemplified by the many interpretative interventions of the supervisory authority for data protection, the European Data Protection Board – 'EDPB' (formerly, Article 29 Working Party): ARTICLE 29 WORKING PARTY, *Opinion 15/2011 on the Definition of Consent*, 01197/11/ENWP187, July 13, 2011; ARTICLE 29 WORKING PARTY, *Article 29 Working Party Guidelines on consent under Regulation 2016/679* , Adopted on 28 November 2017, and last Revised and adopted on 10 April 2018; EUROPEAN DATA PROTECTION BOARD, *Guidelines 05/2020 on consent under Regulation 2016/679*, 4 May 2020.

As conceived by data protection law, it is a key element that permits the processing of personal data by data controllers that would otherwise be forbidden. When a data subject gives valid consent, data controllers are released from the restrictions provided by law. The processing becomes lawful from the moment consent is unambiguously expressed.

By law, consent shall be granular and distinguished from declarations concerning other matters (Article 7[2] GDPR). It must be "freely given, specific, informed and unambiguous" (Article 4[11] GDPR). Correspondingly, the law mandates 'affirmative consent' requiring the data subject to signal agreement by "a statement or a clear affirmative action" (Article 4[11] GDPR). At the same time, it continues to distinguish between 'explicit consent' if the data in question is sensitive personal data, and 'unambiguous' consent for all the other personal data (Article 6 GDPR combined with Article 4 GDPR).

The issue of what standard of consent should apply under the GDPR was the subject-matter of intense debates and negotiations at the lengthy proposal stage of the GDPR. The legislative history of the GDPR demonstrates that the final drafting was intentional in maintaining different qualifiers of consent and making the express distinction between 'unambiguous' and 'explicit' consent depending on the ordinary or sensitive nature of the data. To the extent that the GDPR makes clear that 'explicit' and 'unambiguous' consent are not the same, the boundaries of what is 'unambiguous' remain unclear, with the additional complication that the law states that it must be given by an 'affirmative action'. For example, it is unclear to what extent implied consent remains possible.[88] While the GDPR provides that "silence, pre-ticked boxes or inactivity should not *(omissis)* constitute consent" (Recital 32 GDPR), it also states that consent can be given through "another statement or conduct which clearly indicates in this context the data subject's acceptance of the

[88] In this regard, the latest 2020 opinion of the EDPB does not help much, limiting their interpretation to "all presumed consents that were based on a more implied form of action by the data subject (e.g. a pre-ticked opt-in box) will also not be apt to the GDPR standard of consent". See EUROPEAN DATA PROTECTION BOARD, *Guidelines 05/2020 on consent under Regulation 2016/679*, cit., p 20.

proposed processing of his or her personal data" (Recital 32 GDPR). In any event, controllers must be able to demonstrate that data subjects have consented (Article 7 GDPR).

The distinction between 'explicit' and 'unambiguous' consent matters in practice as long as different models of consent translate into very different engineered solutions within financial products and services, especially online. In the 'explicit' consent model an opt-in tick box or declaratory consent statement will be necessary. However, in the 'unambiguous' consent model that dominates commercial services a prominent notice together with an 'affirmative action' may suffice to obtain an implied consent without the need for an opt-in box or declaratory consent.

In the consumer protection realm, this can make a substantial difference in terms of the way consent is collected from consumers or the interface presented to them, and the way in which they interact with the product or service provider.

Ultimately, this also makes a difference as to the real knowledge and control that consumers may have on the processing of their personal data, and the uses that can be made with the data. Consent must rely on transparency and an 'affirmative action' (whether explicitly given or inferred through conduct) but how this translates in practice remains vague, especially in the context of Open Finance and within the complexities of financial transactions.

It needs to be added that the GDPR establishes explicitly that data subjects have a subsequent right of withdrawal of consent. The data subject may withdraw consent at any time and this must be as practical as granting consent. Clearly, however, the withdrawal of consent shall not affect the lawfulness of processing based on consent before its withdrawal (Art. 7(3) GDPR).

The complexities of the Fintech business models, data-collection practices, vendor-customer relationships, or technological applications may make it impossible for consumers to understand what they are consenting. Equally, these complexities may in practice render consumers unable to freely and actively decide to accept the consequences of consenting to data processing, particularly when faced with a perceived immediate economic benefit.

Despite the apparently robust legal protection afforded to data subjects, consent may be obtained by a number of methods and has proved problematic as a basis for data processing because it can be easily abused, confused, or conflated.[89]

Treating consent as a transactional moment using standard form agreements may constitute a mechanical or perfunctory means of obtaining overarching consent for data processing.[90]

For instance, the condition of consent in the provision of financial services is a common yet elusive method of obtaining consumer consent. Consent becomes associated with the legal paradigm of contract. At the same time, the contractual relationship is a situation with a typical imbalance between the consumer and the business counterpart. Consumers are presented with no much choice but to abide by the lenders' terms if they wish to receive a service. In practice, the consumer's consent becomes either mandatory or assumed. Open Finance is based on data exploitation. As seen above, the PSD2 names contractual consent and data processing consent in the same way ('explicit consent'), albeit in two different Articles and contexts.[91]

The legal mechanism of consent becomes more confused where the GDPR further intends to protect data subjects stating that 'consent' should not be regarded as freely given if they are "unable to refuse or withdraw consent without detriment"

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[89] In theory, consent that does not meet the requirements of the law or is vitiated should be regarded as void, and should invalidate all data processing *ex tunc*—from the outset. See ARTICLE 29 WORKING PARTY, *Article 29 Working Party Guidelines on consent under Regulation 2016/679*, Adopted on 28 November 2017, and last Revised and adopted on 10 April 2018. For specific literature see e.g. MANTELERO, *The future of consumer data protection in the EU. Re-thinking the 'notice and consent' paradigm in the new era of predictive analytics*, Computer Law and Security Review, 30, 2014, p 643; KOSTA, *Consent in European Data Protection Law*, 2013, Martinus Nijhoff.
[90] BROWNSWORD, *Consent in Data Protection Law: Privacy, Fair Processing and Confidentiality*. In *Reinventing Data Protection?*, 2009, Springer, p 83.
[91] Articles 64-67 PSD2 and Article 94 PSD2.

(Recital 42 GDPR) or “where there is a clear imbalance between the data subject and the controller” (Recital 43 GDPR). Recent studies show that in order to gain specific transactional and personal advantages most consumers willingly consent or disclose information about themselves and their social activities without thinking about the effects of their disclosures, thus making consent *de facto* ineffective. Yet very few consumers understand the significant consequences of this trade-off, including how data controllers use their personal data. Not only data processing can be very complex and non-transparent, but most consumers lack both the information and the skills to properly evaluate their own decision to consent.[92]

In the end, under the discussed legal uncertainties it remains unclear how the aspirations of placing consumers in control can be effectively reconciled with the reality of Open Finance.

5.2. It has to be reminded that the expanded data processing is mostly done in the interest of the financial services industry to enlarge the customer base, minimise risks, and increase profitability. True, these elements may coincide with product innovation. At the same time, these interests may not necessarily coincide with the provision of suitable products in the interest of consumers in terms of provision of financial services at affordable costs to those who really need and qualify for them.

Open Finance relies on enhanced data sharing for personalisation and profiling purposes. Personalisation relies on profiling. The latter is about prediction, which is not the same as knowledge. Unlike knowledge, it is not neutral and it is used to determine the future. Therefore, the risk is that Open Finance will create a more

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[92] PASQUALE, *The Black Box Society*, 2015 Harvard University Press; PEPPET, *Unraveling Privacy: The Personal Prospectus and the Threat of a Full Disclosure Future*, Northwestern University Law Review, 105(3), 2011, p 1153; BORGHI, FERRETTI and KARAPAPA, *Online Data Processing Consent Under EU Law: A Theoretical Framework and Empirical Evidence from the UK*, International Journal of Law and Information Technology, 21, 2013, p 109; EDGAR, WHITLEY and PUJADAS, *Report on a study of how consumers currently consent to share their financial data with a third party*, Report provided for the Financial Services Consumer Panel, London, 19 April 2018, at https://www.fs-cp.org.uk/sites/default/files/fscp_report_on_how_consumers_currently_consent_to_share_their_data.pdf.

complex and fragmented financial environment where data analytics may exploit or manipulate consumer behaviour or biases.

The problem is that these systems are overly complex, not transparent and there are no mechanisms to safeguard against abuses and mistakes – generally known as the 'black box' problem.[93]

Most of the time not only the logics/biases of the algorithms remain undisclosed and guarded as trade secrets, but also the data sources used by the individual lenders are undisclosed. Arguably, it is very difficult to determine how the data are correlated and whether the variety of unrelated data operate as proxies for personal features – also of sensitive nature – targeting vulnerable individuals or behavioural biases. The issue of selecting qualitative in addition to quantitative data can pose the risk of unintentional or even intentional discrimination (e.g. by cherry-picking certain customers to increase profitability), especially since their choice reflect biased human decisions in the design of the algorithm, and thus of the product or service. Algorithms work on the basis of predetermined features or variables. Therefore, they are in a sense inherently biased or discriminatory. They assess the features of a person – thus his/her viability - according to the behaviour of others. In this way, the most appropriately designed algorithm is the one that can select, or discriminate, most effectively or better than others. This is a fundamental feature of algorithms that cannot be avoided. Obviously, the resulting products or services do not overtly discriminate on the basis of factors such as race, gender or age that are caught by anti-discrimination laws.[94] Nevertheless, they may instead use correlated information to build an in-depth profile of a particular customer and make

[93] PASQUALE, *The Black Box Society*, cit.

[94] E.g. see Council Directive 2000/43/EC of 29 June 2000 implementing the principle of equal treatment between persons irrespective of racial or ethnic origin, OJ L 180/22; Council Directive 2004/113/EC of 13 December 2004 implementing the principle of equal treatment between men and women in the access to and supply of goods and services, OJ L 373/37. See also *Association Belge des Consommateurs Test-Achats ASBL and Others v Conseil des ministers* (Case C-236/09), ECLI:EU:C:2011:100, where the CJEU ruled that insurers can no longer take gender into account when calculating insurance premiums.

indirect or other discriminations not explicitly covered by the law, e.g. discriminations based on behaviours, culture or wealth. Some instances of these discriminations can be re-conduced to traits of race, gender, or age but they will be very hard - if not impossible - to prove. Big data may dig-up protected information.

An indiscriminate use of data may easily lead to increased stereotypical decisions. They may respond to schemes selecting certain groups of the population posing issues of access to financial services to those groups of consumers.

In this environment, the risk of dark patterns is concrete. Dark patterns are "business practices employing elements of digital choice architecture, in particular in online user interfaces, that subvert or impair consumer autonomy, decision-making or choice. They *(…)* are likely to cause direct or indirect consumer detriment in various ways, though it may be difficult or impossible to measure such detriment in many instances".[95]

The subversion or impairment of consumer autonomy is the contrary of a consumer-centric environment and effective control. A critical point is that of attempting to empower consumers in an environment of vulnerability to dark patterns and other online perils.[96]

The Data Act attempts to fix the problem. It provides that third parties shall not "coerce, deceive or manipulate the user in any way" by subverting or impairing their autonomy, decision-making or choices, including by means of a digital interface.[97] However, it does not explicitly rule the prohibition of any form of coercion, deception or manipulation of data subjects, regardless of whether the user is also a data subject.[98] Under the Data Act, 'users' are natural or legal persons that

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[95] OECD, *Dark commercial patterns*, OECD Digital Economy Papers, No. 336, 2022, OECD Publishing, at https://doi.org/10.1787/44f5e846-en

[96] *Ibid*. See also SEIZOV, WULF and LUZAK, *The Transparent Trap: A Multidisciplinary Perspective on the Design of Transparent Online Disclosures in the EU*, Journal of Consumer Policy, 42, 2019, p 149.

[97] Article 6(2)(a) Data Act.

[98] EDPB-EDPS, *Joint Opinion 2/2022 on the Proposal of the European Parliament and of the Council on Harmonised Rules on Fair Access to and Use of Data (Data Act)*, cit.

own, rent or lease a product or receive a service.[99] The factors that may affect decision-making - hence real control of the data - may be different depending on whether or not the 'user' is also the data subject.[100]

The above difficulties could have additional counterproductive effects if a number of consumers become untrustworthy of their data being processed properly. Sections of the population may become averse to share information for fear of having their personal integrity violated. This, in a vicious circle, poses challenges to the commercial use of the data that will leave them behind or excluded.

On a related line, there are risks for those segments of the population who are un-networked or have no or limited digital presence. With Fintech development, increasing concerns are expressed by groups of consumers who face difficulties to access information, or buy and pay for goods/services in the digital domain. These include elderly persons who for various reasons do not use technologies, persons with disabilities, or persons in poverty. The causes for these difficulties may be diverse and range from a lack of digital literacy, lack of accessibility to the digital devices supporting the financial services, as well as lack of trust in digitalised services (e.g. fear around fraudulent use of identity, difficulty to identify misuse and claim redress, etc.).[101] The problems of consumer vulnerability in the digital sphere are well documented in the literature,[102] with the addition of the other layer of vulnerability in the realm of financial services.[103] As a result, significant numbers of consumers could be denied access to financial services.

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[99] Article 2(5) Data Act.

[100] EDPB-EDPS, *Joint Opinion 2/2022 on the Proposal of the European Parliament and of the Council on Harmonised Rules on Fair Access to and Use of Data (Data Act)*, cit.

[101] OECD, *G20/OECD INFE Report on Ensuring Financial Education and Consumer Protection in the Digital Age*, 2017; CENTRAL BANK OF IRELAND, *Discussion Paper: Consumer Protection Code and the Digitalisation of Financial Services*, June 2017.

[102] For all, see HELBERGER, SAX, STRYCHARZ, MICKLITZ, *Choice Architectures in the Digital Economy: Towards a New Understanding of Digital Vulnerability*, Journal of Consumer Policy, 45, 2022, p 175, and the literature there cited. See also ALPA and CARTICALA', *Diritto dei Consumatori*, 2016, Il Mulino.

[103] PAGLIETTI and RABITTI, *A Matter of Time. Digital-Financial Consumers' Vulnerability in the Retail Payments Market*, European Business Law Review, 33(4), 2022, p 581.

In any event, the concern may not be limited to those who are not digitalised. The broader question, affecting everyone, is the extent to which people remain with the liberty of being un-networked or offline, with the safeguard of not attracting negative consequences in case personal data are not available digitally or refusal to share data.[104]

All in all, these risks raise debates and concerns over the commodification of personal data, the financialisation of people's lives, and the shaping and conforming of behaviours beyond the provision of financial services. These issues have not been discussed sufficiently in the making of the PSD2 or the Data Act.

6. This work was concerned with Open Finance and the challenges facing EU regulation to adequately protect consumers. Following the opportunities provided by Open Banking via the PSD2, the EU aims to extend this data-driven financial model to the entire financial services sector.

To enable Open Finance, regulation is needed. The question is what kind of regulation. The EU places consumer empowerment and data control as the tools to achieve a consumer-centric data-driven financial market led by innovation. How factual consumer empowerment, data control and protection can be reconciled with the regulatory approach currently envisaged by the EU legislator is an open matter that raises doubts and needs to be carefully addressed.

The regulatory framework for Open Finance rests in the consolidation and extension of a sectoral PSD2-like legislation that will have to integrate the general framework provided by the proposed Data Act. Moreover, as personal data are involved, it overlaps and needs coordination with the GDPR.

An analysis of the current and proposed EU legal instruments to enable Open Finance reveals that the latter may rather open risks for consumer protection for providing legal uncertainty and failing to grant an environment where consumers are

[104] PACKIN and ARETZ, *On Social Credit and the Right to Be Unnetworked*", Columbia Business Law Review, 2, 2016, p 339.

indeed in control and find adequate protection. Black boxes and dark patterns may flourish in such an environment. In a financial services market that is mainly supply-driven and governed by the supply-side, there are conduct of business risks. Aggressive business models may expand via the digital development. Innovation and competition are welcome, but data-driven business models are complex and take new unconventional forms where data feed new scenarios and create new markets. This can result in an environment favourable for targeted individual marketing, exploitation of consumers' behavioural biases, mis-selling of financial services, or financial discrimination. Freeriding wallows in legal uncertainty and may flourish.

The identified risks stemming from Open Finance may derive from the failure of the approach taken by present and proposed regulation to deliver the goal of realistically placing consumers at the centre and put them in control. Such a goal could not happen with the usual legal instruments of consumer consent or reliance on contractual necessity for data processing. This is particularly the case already in a context of legal uncertainty over their use in the PSD2 as the proper legal basis under the GDPR.

More than in any other market, in the digital environment vulnerability is likely to be the norm rather than the exception.[105] In Open Finance, consumers face the combination of both digital and financial vulnerability. Arguably, there is a need for a paradigm shift reversing the expectations placed on consumers to be self-governing and the arbiters of markets, particularly the digital financial one. In vulnerability-sensitive markets data control should be by regulatory and technological design, and not left to the autonomy of consumers. The use of principles integrated by conduct of business rules is the leading debate taking place in neighbouring jurisdictions such as the UK.

Consumer protection concerns intensify if regulation aims to achieve autonomy through the instrument of consent. Digitalisation exacerbates the

[105] RIEFA, *Protecting Vulnerable Consumers in the Digital Single Market*, European Business Law Review, 33(4), 2022, p 607.

weaknesses of this legal technique designed to empower consumers. In addition, consumers are likely to consent too easily when faced with perceived immediate financial gains.

Thus, the overarching question is the extent to which the current regulatory approach taken by the EU is prone to sufficiently protect consumers from the fundamental problems likely to be opened by Open Finance.

All the above considerations need to go along with ever-existing problems of lack of effective supervision and enforcement in the digital domain – this is a theme that this paper has not addressed but that needs equal in-depth attention by complementing research.