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

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F. CAPRIGLIONE – R. M. LASTRA – R. MCCORMICK
C. PAULUS – L. REICHLIN – M. SAKURAMOTO

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The "Law and Economics Yearly Review" is an academic journal to promote a legal and economic debate. It is published twice annually (Part I and Part II), by the Fondazione Gerardo Capriglione Onlus (an organization aimed to promote and develop the research activity on financial regulation) in association with Queen Mary University of London. The journal faces questions about development issues and other several matters related to the international context, originated by globalization. Delays in political actions, limits of certain Government's policies, business development constraints and the "sovereign debt crisis" are some aims of our studies. The global financial and economic crisis is analysed in its controversial perspectives; the same approach qualifies the research of possible remedies to override this period of progressive capitalism's turbulences and to promote a sustainable retrieval.

Address

Fondazione Gerardo Capriglione Onlus

c/o Centre for Commercial Law

Studies Queen Mary, University of

London 67-69 Lincoln's Inn Fields

London, WC2A 3JB

United Kingdom

Main Contact

Fondazione G. Capriglione Onlus - fondazionecapriglione@luiss.it

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THE EBU AND THE 'STATE OF LAW':
TOWARDS A DIFFERENT EUROPE

Francesco Capriglione [*]

ABSTRACT: *This paper, after examining the structural changes in the European financial architecture induced after the global financial crisis of 2007, analyses the causes that prevent the realisation of an economic integration suitable to establish a political union among EU member states. The analysis highlights how the establishment of the EBU shows loopholes that limit its functionality. Specifically, the transfer of powers to the ECB results in an imbalance of the institution's power in relation to its obligations of democratic accountability to the national legislation. On this view, the Single Resolution Mechanism results ineffective because of the difficult acceptance of the criterion of the internalisation of losses which is contrary to the logic adopted in some member countries (such as Italy) of the "socialization of losses," that places the financial assistance to rescue banks in crisis at the expense of taxpayers. An issue which aligns with the limited financial availability of the Single Resolution Fund that should have been made necessary through the use of the ESM, prevented by the recent refusal of ratification of the Italian Parliament. The result is the need to make the EBU more efficient with regulatory interventions, the realisation of which finds an obstacle in the principle of unanimity that does not allow the EU to be preserved from the hazard of the 'rule of law' and autocratic forms of democracy.*

[*] Editor-in-chief

SUMMARY: 1. Introduction. - 2. The establishment of the EBU… - 3. The three pillars and their limitations: the Single Supervisory Mechanism. - 4. …the Single Resolution Mechanism - 5. … and the Single Deposit Guarantee. - 6. The missing ratification of the ESM reform: the case of Italy. - 7. The principle of "unanimity": a limitation for the functioning of the EU. - 8. … negative implications on the establishment of the 'State of law'. - 9. Conclusion.

1. The structural changes in the European financial order induced by the 2007 global crisis involved, first and foremost, the creation of supervisory system to address the questions raised by market cyclicality through the provision of "corrective measures" proportionate to the difficulties faced by operators.[1]

This led to the establishment of a network of supervisory authorities, called the ESFS, aimed at «preserving financial stability, building trust in the financial system and ensuring sufficient protection for consumers of financial services». This regulatory framework, consisting of two pillars namely, the European Systemic Risk Board (ESRB) - chaired by the President of the ECB (in charge of monitoring and assessing potential risks to financial stability arising from macroeconomic processes) - and the European authorities (EBA, EIOPA and ESMA), which are complemented by a network of national authorities that cooperate with them[2].

This organisational structure of the European banking and financial system was considered by the EU legislator to be suitable for dealing with the risks of increasingly internationally oriented operations and, therefore, to be potentially removed from national supervisory authorities. As has been pointed out by the doctrine, these disciplinary changes achieve an adequate «degree of financial integration [...] where mechanisms of cooperation and coordination between national authorities [...] (were) [...] found to be inadequate to [...] achieve

[1] MICOSSI, CARMASSI e PIERCE, *On the tasks of the European Stability Mechanism*, on *CEPS Policy Brief*, no. 235, March 8, 2011.

[2] TROIANO, *L'architettura di vertice dell'ordinamento finanziario europeo*, on AA.VV., *Corso di diritto pubblico dell'economia*, by Pellegrini, Padova, 2016, p. 505 ss.

homogeneous patterns of supervision of economic activities in the Union».[3]

In this context, the institutional prerogatives of the ESRB to the European Central Bank and the ESCB[4], as well as the acknowledgement of specific competencies aimed at ensuring the stability of the system[5]. Conversely, the European authorities in charge of micro-prudential supervision perform a function oriented toward the prevention of regulatory arbitrage and risk control (implemented through constant monitoring of markets) and the protection of market participants.

The adoption of the CRD IV (the EU Regulation No. 575/2013 and Directive 2013/36/EU) aimed at implementing the requirements established by Basel III in which reference was made both to strictly technical principles (concerning capital, risk measurement, leverage, and liquidity levels) and to organizational and management criteria (concerning governance, enforcement, and the powers of supervisory authorities)[6]. The subsequent amendment of the banks' capital adequacy requirements and the enhanced assessment of the negative implications of systemic and liquidity risks resulted in a revisiting of internal governance arrangements, impacting the board of banking groups, the liability regime in risk control, as well as the relationships between the various management bodies[7].

This impacts the efficiency of the supervisory action put in place by the national authorities, whose intervention-as is well known-could be deployed

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[3] PELLEGRINI, *L'architettura di vertice dell'ordinamento finanziario europeo: funzioni e limiti della supervisione*, in *Riv. trim. dir. dell'economia*, 2012, I, p. 54.

[4] EU Regulation No. 1092 of 2010.

[5] Among these notes the authority to issue risk warnings and recommendations of different nature (general and particular), which highlight their centrality in the redefinition of macroeconomic policy instruments (by which risks arising from the interconnectedness of markets are to be addressed).

[6] MIELI, *L'attuazione in Europa delle regole di Basilea 3*, Hearing at the Chamber of Deputies, February 23, 2012.

[7] CAPRIGLIONE, *La* governance *bancaria tra interessi d'impresa e regole prudenziali*, paper given at the Conference "*Impresa e Società, Assicurazioni, Titoli di credito*", organized by Ca' Foscari University of Venice (May 9-10, 2014), on *Riv. Trim. dir. econ.*, 2014, I, p. 66 ss.

subject to the use of appropriate management and internal control systems[8]. It is clear how the activity of supervision, in its performance of "sound and prudent management," ended up being oriented towards overcoming the fragmentation of forms of control, attributing to the ECB the typical actions of risk prevention: authorization for the operation of new credit institutions, evaluation of qualified shareholdings, assessment of minimum capital requirements, and assessment of the adequacy of capital. Hence a downsizing of national authorities which should have taken place in compliance with criteria of "cooperation" provided by the authorities in the 'single mechanism'.[9]

2. The creation of the EBU acclaimed by researchers as a challenge for a more united Europe, capable of overcoming the limitations of the forms of connection (between the different states) in promptly arranging appropriate instruments, capable of initiating processes that would ensure the overcoming of the crisis or, at least, suitable to circumscribe its effects[10]. It is aimed at marking a decisive step forward on the integration within the EU, pursuing a technical project aimed at the homogenisation of operational forms and, therefore, suitable for improving cooperation between member states, encouraging their development.

According to Article 127 of the TFEU (under which the EU Council is allowed to decide unanimously, after consultation with the European Parliament and the

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[8] MASERA R., *Corporate governance, compliance e risk management nelle grandi banche internazionali: attività illegali e illecite, multe, indennizzi e processi penali, on Riv. trim. dir. econ*., 2013, n. 2, p. 109.

[9] *La Supervisione finanziaria dopo due crisi. Quali prospettive,* introductory paper to the Conference so entitled held in Capri (June 2022), Atti in Suppl. to No. 1 of *Riv. trim. dir, econ*., 2022, p. 16.

[10] See WYMEERSCH, *The European Banking Union. A first Analysis, Universiteit Gent*, Financial Law Institute, WP, 2012-07, ottobre 2012, p. 1 ss.; CAPRIGLIONE, *European Banking Union. A challenge for a more united Europe,* in *Law and economics yearly review*, 2013, I, p. 5 ss; AA.VV., *Dal testo unico bancario all'Unione bancaria: tecniche normative e allocazione di poteri [Proceedings of the conference organized by the Bank of Italy, Rome, September 16, 2013],*on *Quaderni di ricerca giuridica della Banca d'Italia,* n. 75; IBRIDO, *L'unione bancaria europea. Profili costituzionali*, Rome, 2017.

Central Bank, to entrust the ECB with 'specific prudential supervisory tasks' over credit institutions), the EBU significantly affects the Union. In particular, the EBU increases broader (*rectius*: increasing) powers to the ECB with respect to all entities belonging to the European financial system and, therefore, also to banks with assets of less than 30 billion (the so-called "non-significant"), so as can be inferred from a ruling of the General Court of the European Union. Specifically, the relationship between the ECB and national authorities "consists in allowing the exclusive competences delegated to the ECB to be implemented within a decentralized framework"[11].

The EBU is centered on three pillars: the Single Supervisory Mechanism, the Single Resolution Mechanism and, lastly, the unrealised Deposit Protection Guarantee Scheme. They are entrusted-through the provision of an interactive interweaving, to be carried out according to a criterion of progressive use of the relevant interventionist forms-with the function of assure the "sound and prudent management" of those belonging to the credit system, an inescapable prerequisite of any process of economic growth and socio-political security.

As a result of the realisation that the "convergences" (implemented ahead of the realization of the EMU) had not resulted in an effective homogenization within the Eurozone, the way out of the "deadlocks" in which some member states appeared to be stranded was seen in the recourse to a technical solution. This is a project consistent with the "money-credit" phenomenon (to which is linked the validity of a control action, and the relation between credit and monetary liquidity). At the same time, it identifies the creation of an innovative link between economic development and the achievement of the conditions that align with the 'State of law' which is informed by democratic principles of equality and dignity.

However, the new European reality is centered on a technical neutrality that

[11] Decision of May 16, 2017 (Case T-122/15).

seems destined to replace politics; however, the deficiencies of the latter led European leaders to seek the possibility of remedying the inertia caused by the lack of democracy that features the European institutional system at the time. The consequence of this was to promote a transformation (considered suitable for facilitating the overcoming of the economic and financial crisis) that entailed a progressive loss of sovereignty of the member States in order to find in the technique the foundation for ensuring the continuity of the Eurosystem and avoiding the breakdown of the program undertaken with the Maastricht Treaty.

At the general level, therefore, a *dyscrasia* is identified between the tendency towards an attenuation of the pro-European spirit (which leads, often, member States to look critically at the encumbrances associated with membership) and the operational lines of the EU's governmental and technocratic leadership (whose action, in response to the crisis, proceeds at a driven pace towards a common goal). Hence the emergence of a increasing gap between the reform efforts-which, in the past few years, have involved the governance of the Union-and the erosion of a political union, which is increasingly circumscribed within the scope of simple, emphatic pronouncements made by governmental exponents.

As it will be highlighted in the remainder of this paper the above reality is identified in the unjustified tolerance, by the EU institutional leadership, of the continue violations of the 'State of law' implemented by certain member countries which have acted in disregard of the democratic logic or even by assuming forms of regulation within themselves that allow one to recognise, in the present case, the adoption of an autocratic regime[12].

3. The structure introduced by the European legislature for the establishment of a united banking environment is centred on three pillars (single

[12] This refers in particular to Poland and Hungary, see infra para. 9.

supervision, single resolution mechanism, and common deposit guarantee scheme), the first of which identifies an intervention scheme aimed at ensuring the financial stability of the Union through structural reforms suitable to overcome the risks arising from the crisis in a suitable and permanent manner[13].

Regulation No. 1024/2013/EU (the so-called SSM Regulation) establishes this Mechanism (MVU) which is composed of the European Central Bank (ECB) and the national competent authorities (NCAs) of the member states, after assigning specific tasks to the ECB regarding policies on prudential supervision of credit institutions. Specifically, the ECB is empowered with the task of setting the authoritative criteria provided by the measures underlying the activities that give content to the supervision of credit institutions. This regulatory policy option considers the fact that during the global financial crisis of 2007, the ECB showed an accomplished ability to assess risks, and carry out transactions aimed at stabilising liquidity in the markets, thus preventing the downturn from further turmoil.

Regulation (EU) No. 468/2014 of the European Central Bank clarifies the forms of cooperation, within the MVU, between the ECB and the competent national authorities. With respect to the distribution of competences of authorities, this Regulation specifies the methodology for the assessment of the significance of credit institutions, as a distinctive criterion for the submission to control, clarifying the limits of the supervision attributed to the national authority[14]. The inclusion in the Consolidated Banking Law, adopted in Italy with Legislative Decree No. 385/1993, of a special provision Art. 6-*bis* (introduced by Art. 1, co. 4, Legislative

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[13] CAPRIGLIONE, *L'unione bancaria europea*, Turin, 2013, *passim*; FABBRINI, *I tre pilastri per rifare l'Unione*, pubblished on *Il Sole 24 Ore* on May 7, 2014; SORACE, *I 'pilastri' dell'Unione bancaria*, on AA.VV., *L'unione bancaria europea*, Pisa, 2016, p. 91 ss.

[14] According to that criterion, banks supervised by the ECB have assets of more than Euro 30 billion (to date less than 150 and, nevertheless, able to supervise 85 percent of Eurozone banking assets); see ECB, Guide to Banking Supervision, September 2014, p. 10, where it states that the said Bank "exercises direct supervision over... about 120 groups representing approximately 1,200 supervised entities."

Decree No. 223 of November 14, 2016), reinforces the scope of participation in the MVU and the powers of the Italian sector authority, innovating the previous regulation.

It should be highlighted that the unambiguousness of the directive is aimed at the provision of "banking supervision in accordance with high common standards throughout the eurozone"[15], so the clear intent of the European legislator to downsize the discretionary powers typically belonging to national authorities for the purpose of establishing an objective supervisory system. This regulatory architecture shows specific complexity with regard to the way the powers of the ECB relate to those of the competent domestic authorities; and this is not only because of the perceived sense of "limitation of sovereignty" inherent in the activation of the SSM, but also because of the difficulty in identifying the real extent of the downsizing, by this process, brought to the aforementioned national administrations.[16] Hence the impression showed by some national authorities, such as the Italian one, that they are faced with a "substantial loss" of sovereignty, which resulted in a substantive change in their role and functions exercised, an event by which they feel affected only a few lustra after the divestment of monetary power. This is confirmed in the words of the former Italian Governor of the Bank of Italy Visco, who stated that he had run into "propositional uncertainties" and "delays" in the exercise of his duties[17], words that hint at a reality that, in the conclusions of the first conference of the Association of Teachers of Economic Law (ADDE), were defined as a kind of 'identity crisis'[18].

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[15] *Report to the* "*Proposta di regolamento del Parlamento europeo e del Consiglio*", paper COM (2012) 511, par. n. 1.

[16] IBRIDO, *L'Unione bancaria Europea. Profili costituzionali*, Turin, 2017, p. 167.

[17] VISCO, *Intervento* alla «Giornata Mondiale del Risparmio» of 2017, p. 9 delle *Bozze di stampa*, visionabile su *www.bancaditalia.it/pubblicazioni/interventi-governatore/integov2017/visco-311017.pdf*

[18] CAPRIGLIONE, *Conclusioni a margine del Convegno annuale dell'Associazione dei Docenti di Diritto dell'Economia (ADDE) su "Quali regole per quali mercati?"(11-12 dicembre 2015)*, in *Riv. trim. dir. economia*, 2015, I, p. 311 ss.

Negative implications emerge about the lack of parity between the positions of the licensed entities, which are nevertheless oriented to the achievement of objectives uniform to those pursued by intermediaries significantly different from them in terms of organizational forms and structural size. The aforementioned objectives are linked to higher 'levels of competition' and - at the same time - 'convergences', which should promote innovative sharing schemes and, more generally, the realization of conditions of stability and progress.

What is most interesting to note here is the systemic framework underlying the functions envisaged for the MVU; we can infer the recognition of an exclusive competence of the ECB that finds expression in the transfer (to the latter) of supervisory tasks concerning both decisions relating to the conduct of administrative procedures, channelled (only for the preliminary investigation) to national authorities, and the exercise of the activity carried out directly by the central offices of the appointed European institution.

On closer analysis, overcoming the fragmentation of forms of supervision (previously found in the EU) by bringing the typical interventions of supervisory action back to the ECB resulted in a significant downsizing of the scope of powers assigned to the national supervisory authority. Indeed, the intervention of the latter is reduced to a merely instrumental activity aimed at giving content to the so-called preliminary, informative, and inspective supervision exercised by it on behalf of the ECB, which is responsible for the control over the so-called significant banks and, in particular cases, also over those that do not fall into this category[19]. Hence, the domestic authorities (at which the procedures necessary to carry out the activities

[19] *Inter alia*, CLARICH, *I poteri di vigilanza della Banca centrale europea*, in *Dir. pubbl.*, 2013, p. 975 ss.; ANTONIAZZI, *L'Unione bancaria europea: i nuovi compiti della BCE di vigilanza prudenziale degli enti creditizi e il meccanismo unico di risoluzione delle crisi bancarie*, in *Riv. it. dir. pubbl. comun.*, 2014, p. 717 ff.; TOSATO, *The governance of the banking sector in the EU – A dual system*, in AA.VV., *Towards the European Banking Union: achievements and open problems*, Bagno a Ripoli, 2014, p. 23 ff.

of the competent offices of the European Central Bank are to be framed) are entrusted with a function that we could define as investigative in nature and a power of proposal for the adoption of measures of authorization and revocation for the exercise of banking activity and the acquisition of shareholdings. The European regulator wished to downgrade the actions of national supervisory bodies entrusted with the decentralised implementation of exclusive tasks of the ECB. This was also expressed by the General Court of the European Union, which rejected the hypothesis concerning the coexistence of two forms of intervention: one European (for significant credit institutions) and the other domestic (for others), confirming with regard to the exercise of supervision the uniqueness of the command to the appointed financial authority placed at the apex of the EMU[20].

Therefore, the question arises as to whether such an ordinal regime, although related to the important role played by the ECB in preserving the economic stability of the EU, does not result in an unbalancing of that institution's power with respect to its obligations of democratic accountability to the various national realities. It is worth mentioning that the management of monetary policy together with the activity of banking supervision interact on the futures of millions of European citizens without the existence of forms of democratic institutional linkage achievable, as is well known, only in the presence of functions carried out by elected bodies that are directly answerable to those who appointed them.

A further issue is the guarantee of legal safeguards (provided for in modern constitutional democracies) placed at the basis of the proper action of central banks. It is adequately reflected in the European Treaties by resolving itself, as some scholars believe[21], in forms of excessive independence (*rectius*: over-ordination) of

[20] Cause T-122/15 Landeskreditbank Baden-Württemberg – Förderbank/BCE, pubblicata on *Riv. trim. dir. dell'economia*, 2017, II, p. 45 ss., with reference to LEMMA, «*Too big to escape*»: *un significativo chiarimento sull'ambito di applicazione del single supervisory mechanism*.

[21] MOROSINI, *Banche centrali e questione democratica: il caso della Banca Centrale Europea (BCE),* Edizioni ETS, 2014.

the ECB with respect to the national institutions operationally linked to it, eventually resulting in the possibility of injury to some fundamental values (such as: fiscal equity).

From another perspective, the undifferentiated targeting to all euro area countries of the measures (*rectius*: disciplinary guidelines) taken by the ECB can often cause limited attention to the economic-financial diversities existing among them. In other terms, it is questionable whether, compared with a unified orientation of credit policies, the divergencies underlying the systemic construct that we are concerned with here, which were alluded to earlier, are not accentuated.

Finally, it is worth mentioning the need to achieve forms of greater transparency in the actions of the ECB, to ensure that its decisions are marked by clarity and, therefore, more explicit, so as to be fully intelligible to their addressees and to avoid certain criticisms that, in this regard, have been raised by distinguished academics of the subject[22]. Overcoming this operational limitation should take place in ways that allows the ECB to balance the goal of greater transparency with the complexity of the decisions to be taken, to ensure that the latter, in addition to being more understandable, retain their peculiar effectiveness. In this context, the indications of Andrea Enria, who, in an interview given in his capacity as Chairman of the Supervisory Board, refers extensively to an ECB commitment to implement forms of "greater oversight" also point in this direction[23].

4. The complex regulations concerning the second and third pillars of the UBE

[22] MASCIANDARO, *Bce, prezzi e tassi: tre errori da evitare (anche nelle polemiche). La Bce ha compiuto una inversione a U della strategia, con la politica delle decisioni "riunione per riunione"*, on *IlSole24Ore* of Jenuary 9, 2023, where precisely, reference is made to an ECB transparency deficit.

[23] Such interview, aimed at depicting what 2021 was like for ECB banking supervision, can be viewed at *https://www.bankingsupervision.europa.eu/press/publications/annual-report/html/ssm .ar2021 ~52a7d32451.it.html*

(referred to as the SRM and the SGD, respectively) appear to be less problematic, with regard to identifying the modes of intervention necessary to implement adequate efficiency gains in the banking systemic reality in question.

In fact, the Single Resolution Mechanism has intrinsic limitations, recognised by the European authorities themselves, so it is clear that it must be subjected to a thorough review in order to avoid the application distortions that, at present, prevent a positive appreciation of its implementation. Conversely, there is little to be said about the Deposit Guarantee System, since the latter has not yet been implemented.

The Single Resolution Mechanism radically innovates the regulation of bank crisis management. The Directive 2014/59/EU (so-called BRRD) brings, in fact, a profound change in perspective compared to the past, which was marked by interventionist forms that - although debatable from the point of view of "social contribution" in the compensation of losses due to forms of improvised risk-taking (i.e., to moral hazard phenomena) - reflected a solidaristic spirit, using a procedural technique aimed at the observance of criteria designed to ensure objective equality among all those operating in the market with a view to increasing competitive possibilities.

The new regulations highlight the EU regulator's overriding concern to "prevent" the crisis of credit institutions. Hence the function of the interventions provided by the regulations, intended to perform, in the face of the emergence of crisis situations, an action aimed at reducing their extent and, therefore, to prevent that they may result in imbalance to the regular conduct of banking business. It should be noted, however, that the entanglement of multiple and varied actions, related to the pursuit of the purposes targeted by the regulator, has made their

implementation problematic, given the difficulties encountered in application[24].

Alternate remedies to those previously adopted in some Eurozone countries (including Italy), are summarised in a regulatory framework construction in which the set of measures needed to counter corporate inefficiencies are brought back to a single enforcement centre. The activation of these measures is referred by EU Regulation No. 806/2014 (so-called SRM) to a Single Resolution Board that operates in close decision-making liaison with the Commission and the Council, in order to ensure greater financial stability, also in relation to the availability of common resources for financing resolution. Against this European authority, the systemic framework of the BRRD provides for the establishment of national resolution bodies, whose staff, according to Article 3(3) of the BRRD, except in exceptional cases, must be "structurally separate from, and subject to, distinct reporting lines from the staff assigned to the functions" of supervision[25].

It should, finally, be emphasised that a relevant aspect of the legislation regarding the SRM (Regulation 2014/806/EU) is the provision of a Single Resolution Fund regulated in Articles 67 ff., considered by the European legislator "an essential element without which SRM could not work adequately" (recital n. 19 cited Regulation n. 806). It appeared unquestionable, however, in the analysis of the resolution that the original threshold of Euro 55 billion of this Fund-which on December 31, 2023, reached Euro 78 billion, achieving the target level of at least 1% of the covered deposits of the member States participating in the SRM-must have been considered inadequate for the realization of an effective intervention

[24] VISCO, *Considerazioni finali*, held May 31, 2017, press drafts, p. 20; CAPRIGLIONE, *La nuova gestione delle crisi bancarie tra complessità normativa e logiche di mercato*, on *Riv. trim. dir. econ.*, 2017, I, p. 156 ss.

[25] This separation, as the regulations referred to in the text specify, is arranged "to ensure operational independence and to avoid conflicts of interest" between supervisory and resolution functions. Doctrine has justified this organizational formula in the reference to the independence of the resolution body, which is necessary because of the specificity of the function performed; cfr. *ex multis* ROSSANO D., *La nuova regolazione delle crisi bancarie*, Milan Assago, 2017, p. 64.

action[26].

The disciplinary scheme of the resolution procedure is divided into varied phases that, after the possible unsuccessful recourse to early intervention measures (taken by the authority upon the occurrence of the first signs of crisis), find expression in the possibility of using, alternatively or in combination with each other, the "sale of business" (sale of business), the "separation of business" (between a good and a bad bank), the establishment of a "bridge institution" (bridge bank) and the application of "bail-in"[27]. The three measures, while giving rise to a substantial separation of the banking enterprise, nevertheless prevent its extinction, while the fourth operates the cancellation of the losses that led to its crisis. In addition to the shareholders, certain categories of creditors identified by law according to criteria from which the authorities in charge of the procedure can derogate on the basis of choices that we could define as discretionary in nature, this refers to the determinations of the so-called Mrel (Minimum Requirement for Own Funds and Eligible Liabilities)[28].

The logic of prevention interacts on the entire structure of the regulatory construction in question, in which business conditions are prepared that should allow the effects of the crisis to be contained within tolerable limits by the affected institution. The various moments of the resolution appear to be aimed at maintaining the continuity of essential services and the overall financial stability of the sector, ruling out the possibility that the protection of depositors and investors achieved through the support of public funds (no bail-out clause) could, in any way,

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[26] CAPRIGLIONE, *Nuova finanza e sistema bancario*, Milan, 2016, p. 149 ss

[27] LOIACONO et al., *L'Unione bancaria e il possibile impatto dei nuovi strumenti di risoluzione delle crisi: un'analisi empirica*, on *federalismi.it*, 2015; ROSSANO D., *La nuova regolazione delle crisi bancarie*, cit., p. 88

[28] In applying this criterion, industry authorities can determine ex ante a kind of "bail-able zone" from which bank deposits are likely to be left out (Cfr. ROSSANO D., *Nuove strategie per la gestione delle crisi bancarie: il* bail-in *e la sua concreta applicazione*, in *Federalismi.it*, 1, 2016, p. 10 s).

result in an alteration of competitive parity. Hence the wide range of consequences arising from the rules that give content to the regulations under consideration, which routinely place the burden related to losses resulting from the pathological events on the entities to which the responsibility for the failure is attributable.

However, it cannot be omitted to consider that the system of interventions outlined above carries within it assumptions meant to make the procedure in question set for failure. In the first place, the difficult acceptance of the criterion of loss internalization, which inspires the disciplinary construction outlined above, in itself contrary to the logic that, for decades, has guided the procedural technical forms with which in some member countries (such as Italy) the crisis of banking enterprises has been dealt with. It refers, in particular, to the mechanism of the so-called "socialization of losses," so-called in the literature due to the fact that it, on the level of concreteness, placed the financial interventions preordained to rescue banks in crisis at the expense of the community[29].

This well-established practice of the credit system's upper management suggested, even in the aftermath of the enactment of the BRRD directive, that the latter would not meet with an easy reception in terms of implementation[30]. Indeed, the regulatory framework in question envisaged remedies for the solution of banking crises far removed from those that could be hypothesized by those belonging to the credit sector on the basis of consolidated expectations arising from the application of the previous regulation. This was in accordance with the guidelines issued by the supervisory authorities which have avoided for a long time the risks of contagion in the presence of cases of banking instability and unpleasant (and perhaps difficult to control) reactive situations on the part of the population,

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[29] CAPRIGLIONE, *Regolazione europea post-crisi e prospettive di ricerca del diritto dell'economia: il difficile equilibrio tra politica e finanza*, on *Riv. trim. dir. proc. civ.*, 2016, p. 537 ss.

[30] *Ex multis*, GARDELLA, *Il* bail-in *e il finanziamento delle risoluzioni bancarie nel contesto del meccanismo di risoluzione unico*, on *Banca, borsa, tit. cred.*, 2015, I, p. 587 ss.

such as are usually found following events of *'betrayed savings'*.

Certain disciplinary criteria appeared immediately inadequate, such as that of the hypothesized distinction of the roles ascribable national bodies of resolution and supervision (in order "to ensure operational independence and to avoid conflict of interest" between the related functions, such as recite the art. 3, par. 3, of the BRRD) being carried out (by the countries members) recourse to the possibility of invoking the exception provided for by the normative. What come into consideration are, on the one hand, the ambiguity of the Mrel, which in essence refers the concrete application of the bail-in to the supervisory authorities (being empowered to identify the credits to be counted as "deposits" for the purposes of resolution) and, the inadequate availability of the Resolution Fund that prevents its operation, on the other hand.

Lastly, the disciplinary logic preordained to the objective of "prevention" becomes a prerequisite for an innovative way of placing traditional interventionist procedures and, in particular, the positioning of "extraordinary administration" in a sphere that is outside of crisis management and, therefore, distorting its original function envisaged by the regulation as a substantial 'antechamber' to compulsory liquidation[31].

Hence, it is explained the failure of the aforementioned regulatory framework in application proven by the extremely few cases in which recourse to the practice of bail-in is to be found. The need to introduce appropriate changes to the Resolution Mechanism, felt by the EU leadership itself, as can be inferred from the Commission's communication concerning the review of the framework for crisis management and deposit insurance[32], as well as from the document (arranged by the same authority) accompanying the proposals submitted by the European

[31] CERCONE, *L'amministrazione straordinaria delle banche*, on AA.VV., *Trattato delle procedure concorsuali,* by Jorio Sassani, Milan, 2017, vol. IV, p. 171 ff.
[32] European Commission, Strasbourg, 18.4.2023 COM(2023) 225 final

Parliament and the Council to amend Directive 2014/59/EU[33]. These interventions reveal the intent to achieve the conditions to give way to "expansion of the scope of the resolution ...that can rely on industry-funded security bases... (with reduction of) ..., risk of losses on deposits... (and of) ... recourse to taxpayers' money"[34]. The difficulty of implementing the regulatory intent of avoiding the use of public money for the satisfactory interest of creditors, hence the clarification in the aforementioned communication that support for the Single Resolution Fund, which is provided by the European Stability Mechanism, has been agreed at the political level. It is difficult to speculate whether said reform program will be successful, given the complexity underlying the finding of a rational balance between the provision of (sometimes indispensable) State aid and a solution aimed at internalizing the bank's failing losses. Hence the significant importance ascribed, in the debate, to the public interest, whose presence conditions - as is well known - the activation of the resolution procedure[35]. Therefore, the emergence of a guideline aimed at emphasizing that the referability to the presence of such interest may be defined as the "keystone" for the admission or exclusion (as in the case of the 'crisis of the popular banks of Veneto') of the resolution procedure (with the consequent possibility, in case of denial of the latter, of policy intervention and, therefore, of a return to the much-vaunted 'socialization of losses')[36].

5. As was highlighted above, no particular observation seems conceivable with reference to the non-implementation of the third pillar. In other terms, a slowdown in the process of activating the third pillar of the EBU, reflects the lack of

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[33] European Commission, Strasbourg 18/4/2023, *Doc.* COM(2023) 226 final - {SEC(2023) 230 final - SWD(2023) 225 final.
[34] European Commission, *Doc,* COM(2023) 226 final}, cit., p. 2.
[35] ROSSANO D., *L'esclusione dell'interesse pubblico nell'interpretazione delle Autorità europee*, on *Riv. trim.dir.*econ. suppl. no. 3 of 2017, pp. 93 ff.
[36] As to the mechanism CAPRIGLIONE, *Regolazione europea post-crisi e prospettive di ricerca del diritto dell'economia: il difficile equilibrio tra politica e finanza,* cit.

willingness by the Union's top management to implement a mutualization of the risk of the member States, which is naturally linked to a similar pooling of the past debt of the national banking systems.

More specifically, it can be argued that the underlying reason for the non-establishment in the Banking Union of the Deposit Guarantee Scheme lies in the intent of a group of EU countries who believe that risk reduction should, as a priority, be provided before implementing said pillar. The rationale for this belief is related to the prospect (*rectius*: requirement) of a necessary, prior reduction (by banks) of the significant amount of sovereign bonds of high debt countries, held in their securities portfolio.

It seems unquestionable within such attitude an implicit reference to Italy and its banks; moreover, such behaviour necessarily follows a failure to strengthen the Union as a "Community entity," thus ending up disregarding, on the level of concreteness, the tendency (already present in some countries of the Union) to downplay the opposition to the sharing of obligations of a financial nature. The above considerations highlight the need to initiate appropriate regulatory changes that will enable the banking union to be completed and, therefore, achieve a more resilient, integrated and diversified financial sector that, as Christine Lagarde made clear, is capable of "unlocking the large pool of private investment at the European level that is necessary to accelerate the digital and ecological transition"[37].

6. The analysis carried out so far highlights how the European Banking Union has still not achieved the level of efficiency necessary to achieve the objectives that the EU regulator had set for itself by creating the procedural system that qualifies its contents. It is above all the SRM that has application limitations due to several

[37] The *Prefazione di Christine Lagarde, Presidente della BCE. Rapporto annuale della BCE sulle attività di vigilanza 2021*, see on *www.bankingsupervision.europa.eu/press/publications/annual-report/html /ssm. ar2021~52a7d.*

factors that impede its functionality, among which the small amount of availability of the European Resolution Fund, which appears insufficient in relation to the objectives to which its action should aim, is of primary importance. In this context, it seems appropriate to refer to the initiative in the past proposed by the Italian government authority which, following the pandemic event, envisaged the possibility of requesting the Union to use ESM for the activation of adequate support to the economic systems in crisis at the time; a request justified by the fact that the latter, due to its considerable financial availability, had been able to help the continent's economy overcome "an unprecedented global shock"[38].

This innovative hypothesis of the fruition of the ESM aroused wide perplexity in the Italian political sector, in accordance with the age-old fear of seeing, in case of need, the country subjected to a regime of reinforced surveillance (i.e. to a sort of "commissariat" of Italian economic policy). The climate of mistrust regarding the effectiveness (rectius: the benefits) of the function performed by the body in question is translated, in the European sphere, into a kind of resistance (implemented mainly by Italy) to accept the reforming logic of the Fund's operation, which after ups and downs has found expression in the Agreement, amending the Treaty establishing the European Stability Mechanism, signed in Brussels on January 27 and February 8, 2021[39].

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[38] *Coronavirus, Conte al Ft: "Attivare Mes contro shock globale senza precedenti*", visionabile su *www.adnkronos.com/fatti/politica/2020/03/20/coronavirus-conteattivare-mes-contro-shock-globale-senza-precedenti_jEL5m3NI2jVucXl9yB0WTM.html?refresh_ce,* where the contents of Premier Conte's interview with the Financial Times on March 20, 2020 are reported, from which, moreover, it is clear that it was not his intention to access the ESM under the conditions that governed its operation at the time.

[39] As per esm-treaty-amending-agreement-21_it
In that Agreement, the European Commission and the ESM share common objectives and commit to carry out specific functions related to crisis management for the euro area in accordance with European Union law and the rules agreed in that Agreement. In particular, these institutions are to cooperate closely in ESM crisis management measures, within the framework of effective governance, so as to ensure financial stability, combining their respective competencies; Cfr. European Commision, Bruxelles, 6.12.2017 COM(2017) 827 final; ID., Bruxelles, 6.12.2017 COM(2017) 827 final ANNEX.

On closer inspection, the "reformed" ESM serving the Resolution Fund appears to be preordained - as has been correctly pointed out in the literature - to provide a "guarantee ... to the resolution of systemic banking crises, a potentially serious risk even in Europe given the rapid rise in interest rates and recessionary pressures"[40]. The search for suitable financial means to make it possible to realize, in line with the indications of the BRRD[41] , the preventive objectives geared toward safeguarding the stability of the European banking system should have given an understanding of the intent of the European legislator to introduce, through the reform of the IRM, a much-needed addition to the salvific apparatus of banking crises represented by the Resolution Mechanism.

This disciplinary scheme has been by us considered positively as, in addition to be fully consistent with the principles to foundation of the EBU, results related to the need to overcome asymmetries that, in the face of the eruption of possible crisis, constitute a factor disaggregating the systemic balance of the EU. It is obvious, in fact as the reform of the ESM mentioned above present a direct referability to the resolution Fund, the cornerstone of the second pillar of the EBU, so it makes possible the execution of the directives given by the Single Resolution Committee, the decision-making body of the procedure in question.

It follows the improvement of the structural technical apparatus of the Union and, more specifically, the assurance of greater levels of stability than those guaranteed in a different disciplinary framework. In this order of ideas, we have recently represented our opposition to the non-ratification of the Intergovernmental Agreement aimed at amending the ESM founding treaty in a

[40]BORDIGNON – SCINETTI – SCUTIFERO, *Il meccanismo europei di stabilità*, visionabile on *https://osservatorio-cpi.unicatt.it/ocpi-pubblicazioni-il-meccanismo-europeo-di-stabilita*

[41] Significant, in this regard, are the words uttered by Governor Visco (see Speech at the ABI Ordinary Assembly, Rome, July 11, 2012) with regard to the prospect of the EU summits to define with the UBE an 'accomplished design', in which alongside "unitary banking supervision" are to be found "the necessary prerequisites of fiscal sharing, funds and European mechanisms for depositors' guarantees and for crisis resolution".

logic that innovates its purposes, which can now be traced back no longer to the rescue of one or more member states but to financing an EU body, so as to make possible - as previously pointed out - the realization of the primary objectives indicated by the European regulator[42].

The circumstance, then, that the Fund is covered by financial contributions from the banking sector-having aimed at achieving (over 8 years) a total amount of at least 1% of the amount of protected deposits of all licensed credit institutions in all UBE member states[43]- identifies a mode of financing according to which it must be ruled out that the aid offered to those belonging to the credit sector takes place after the use of the monetary availabilities of European citizens. Hence the unequivocal circumstance that the function assigned to the Fund is carried out without the danger posed by an Italian parliamentarian according to which, as a result of the 'ratification of the ESM', "an Italian pensioner or worker would have to pay to save a German bank"[44].

I shall refrain from addressing the possible negative implications of this refusal on the tenor of relations between Italy - which, it should be recalled, boasts the status of founder of the European Community - and the other members of the EU, on which we have dealt elsewhere, pointing out that it has, by this means, undermined the cohesion among the countries of the Union (who feel in an increasing way the need for an interaction that makes possible the coexistence of diversity in multiplicity) [45]. We would like to emphasize, moreover, the significance

[42] CAPRIGLIONE, *Una strana vicenda: la mancata ratifica del Mes*, on *Rivista di diritto bancario*, 2023, p. 589 ss.

[43] European Commission, *Finalising the Banking Union: European Parliament backs Commission's proposals (Single Resolution Mechanism, Bank Recovery and Resolution Directive, and Deposit Guarantee Schemes Directive)*, Statement/14/119, p. 3, whereas «the Single Resolution Fund will be constituted from contributions from all banks in the participating Member States. It will be administrated by the Board. The Fund has a target level of P 55 billion and can borrow from the markets if decided by the Board. It will reach the target level over 8 years».

[44] SALVINI, on *https://stream24.ilsole24ore.com /vi-deo/italia/salvini-mes-e-strumento-inutile-dannoso-e-superato/AFKoXDAC*

[45] CAPRIGLIONE, *Una strana vicenda: la mancata ratifica del Mes*, cit.

of the fact that the Italian parliamentarians-perhaps moved by a strongly ideological outlook-did not take any account of the consequences of the "unanimity principle" on their decision, which would have prevented EU banks from benefiting from the parachute represented by the interventions of the Single Resolution Fund, which at present, as noted above, has limited availability that significantly circumscribes its capacity for action.

7. The well-known “principle of unanimity”, according to Article 218 of the TFEU, instead of strengthening the joint operation of member states in line with the original spirit of that provision, ended up being an impediment to the realisation of the objectives of cooperation and union that underlie the process of European economic integration. In this regard, it is well to recall that "economic convergence" (placed at the centre of the federalist vision constituent delineated by Ernesto Rossi and Altiero Spinelli) found in concrete an adequate explanatory possibility through the methodological criterion followed by Jean Monnet for the realization of the European Community, inspired by the functionalism of Mitrany[46] and the neo-functionalism of Haas and Lindberg[47].

The episodes of realpolitik, such as the one recently implemented by the Italian parliament, remind of the words pronounced by Mario Draghi before the European Parliament in Strasbourg: "Let us change the European treaties: the EU institutions are inadequate. We must overcome the principle of unanimity; we need pragmatic federalism!" [48]. These words provide how much the consequences of the constraint in question, introduced by the Single Act, which in 1986 amended the

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[46] MITRANY D., *A working peace system*, London, 1943

[47] HAAS E.B., *The Uniting of Europe – Political, Social and economic Forces, 1950-1957*, London, 1958; ID. *Beyond the Nation State*, London, 1964**;** LINDBERG, *The Political Dynamics of European Economic Integration, London 1963.*

[48] OLDANI, *Draghi: cambiare i trattati Ue, basta con il voto unanime. Macron e Merkel lo dissero cinque anni fa. Risultato: zero,* on *www.Italiaoggi.it/news/draghi-cambiare-i-trattati-ue-basta-con-il-voto-unanime-macron-e-merkel-lo-dissero-cinque-anni-fa-risultato-2561371.*

1956 Treaty of Rome, and then strengthened in 2009 by the Lisbon Treaty, are hindering the efficiency of the procedural process of a more united and stronger Europe. Indeed, we are in the presence of a decision-making criterion according to which unanimous voting is mandatory when areas defined as strategic are under consideration, the initial number of which was then increased in 2009, thus ending up covering almost all major decisions (from economic policy to foreign policy, from social policies to common defense, and even approval for the entry of new states).

This principle has become - as a result of the progressive enlargement of the membership of the Union - an impeding factor of the European operational program. This is mainly since it is often transformed into the exercise of a "power of veto," exercised either to overcome the asymmetries of economic value that exist between the various European States, or to be able to assert ideological positions that conflict with those of the majority of the other components of the EU. The application of such a criterion is transformed, therefore, into "vetoes" put forward by some member States subjected to "infringement procedures" (for violations concerning the lack of respect for equality and the protection of fundamental rights, as in the case of Poland and Hungary[49]) in order to escape the rigors of the same, placing with their ostracism a sort of blackmail aimed at obtaining an exemption. The premises of a tension in European summits are identified that distorts the operational tools that can be implemented by the Commission to regulate access to EU funds[50], among which the conditionality

[49] European Commission, *Valori fondanti dell'UE: procedure di infrazione nei confronti di Ungheria e Polonia per violazione dei diritti fondamentali delle persone LGBTIQ,* on *https://italy.representation.ec.europa.eu/notizie-ed-eventi/notizie/valori-fondanti-dellue-procedure-di-infrazione-nei-confronti-di-ungheria_it*

[50] Significant, in this regard, is the editorial entitled Suspension of Membership and Blocking of EU Funds. Hungary could pay dearly for a new veto in Kiev, viewable at https://www.eunews.it/2024/01/29/ hungary-orban-veto-ukraine-council-eu, where it is pointed out, "[i]n Brussels, knives are being sharpened against Viktor Orbán's Hungary, ready for a new filibuster in the European Council.... a plan is being hatched within the EU institution to strike at the Hungarian economy in the event of a new Orbán veto at the Feb. 1 summit, a sort of counterattack to bend

mechanism related to respect for the 'State of law' assumes specific importance.

It is the prelude to the possible application of the provisions of Article 7 TEU, which allows the Council of the European Union to determine the existence of "a clear risk of a serious breach by a Member State" of the European values enshrined in Article 2 TEU[51], a provision that became the object of criticism on the occasion of certain events in Hungary and Poland which caused a deterioration of the 'State of law' in those countries[52]. It cannot be neglected to consider, however, that under the second paragraph of the aforementioned Article 7 the procedure in question can be activated by the European Council only after a unanimous decision. Similarly, it should be represented that, on the level of concreteness, the procedure of 'suspending the rights' of a member country - ordered by qualified majority following the establishment of a "serious and persistent" violation of the founding principles of the EU - ends up stagnating "in the rooms of the Europe Palace...(a)...confirmation of the discretionary character...(of the same)...and above all of the absence of political will on the part of the member states to 'reprimand' one of their peers"[53].

In order to dismiss possible obstacles to the realisation in the European sphere of innovative, more forms of convergence are necessary to eradicate the decision-making processes practiced in the Union from the application of the

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Budapest to reach a negotiated solution in the Twenty-Seven and to end the Hungarian game of 'unanimity in exchange for frozen funds."

[51] SADURSKI, *Adding a Bite to a Bark? A story of Article 7, the EU Enlargement, and Jörg Haider*, in *Columbia Journal of European Law*, 2010, 385 ss; RUOTOLO, *Le sanzioni dell'Unione Europea Contro La Violazione Dei Principi Fondamentali Alla Luce Del Trattato Di Nizza,* in *Annali della Facoltà di Giurisprudenza dell'Università di Foggia*, Milan, 2005, p. 1023 s

[52] For the Hungarian Case: KOVÁCS - TÓTH, *Hungary's Constitutional Transformation*, in *European Constitutional Law Review*, 7, 2011, p. 183 ss; DI GREGORIO, *L'Ungheria e i valori europei. Un matrimonio difficile*, in *DPCE online*, on *www.dpce.it,* 2018.

For the Polish case v. SADURSKI, *Poland's Constitutional Breakdown*, Oxford University Press, Oxford, 2019; MORI, *La questione del rispetto dello Stato di diritto in Polonia e in Ungheria: recenti sviluppi*, on *www.federalismi.it,* 2020, p. 166 ss.

[53] COLLI, *La corte di giustizia si pronuncia sull'art. 7, par. 1, TUE e sui limiti alla propria competenza nelle procedure "nucleari" a tutela dei valori europei: la sentenza Ungheria c. parlamento europeo,* on *Osservatorio delle fonti*, 2021, fasc. n. 2, p. 682.

"principle of unanimity" in favor of greater involvement of the European Parliament. This institution, indeed, due to the characteristic of representativeness that distinguishes its function, can ensure political decisions that are the expression of the majority of citizens, thus ensuring the positive outcomes of proper interaction between civil society and institutions to which follows an optimal performance in the realization of the general interest[54]. This preserves the EU from the danger of the *vulnus* brought to the 'State of law' by countries that, neglecting the observance of the rules typically characteristic of a participatory democracy, move towards autocratic forms in which unequivocally it is not given to configure the binomial 'autonomy/freedom' of the people.

The permanence in the Union of the aforementioned principle legitimizes the fact that some member countries feel authorized to violate the 'State of law', to be understood as the power of direct or indirect self-regulation that offers the possibility of seeing the implementation of all the freedoms (moral, juridical, economic, thought, religious) that are inherent to human existence. It is also inferred, furthermore, that the EU accepts the possibility that situations may arise within its borders that represent an open violation of human rights, as unfortunately can be seen in a recent episode in Hungary where a detainee awaiting trial was brought to court in shackles and chains[55].

Moreover, it cannot be neglected to observe that other international organizations, such as the International Monetary Fund (IMF) and the World Trade

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[54] *inter alia*, MANZELLA, *Il Parlamento*, Bologna, 1995, p. 15 ss; VATTER, *Il potere del popolo e la rappresentanza in Rawls e nel repubblicanesimo civico*, on *Filosofia politica*, 2010, n. 2, p. 263 ss; MICHETTI, *Procedimento legislativo e decisione politica,* Turin, 2023, p.p. n3/4 whereas "the idea of parliament in the modern meaning becomes something unavoidable and inescapable within the framework of state organization,...(from content to the)...Hegelian idea of a "'arcaded institution,' the place of connection between the state and civil society, the junction between the circuit of representation/legitimation and the circuit of decision-making."

[55] See Ilaria Salis affair,on the editorial titled Salis in court with handcuffs and chain "like an animal," in Corriere della sera, Jan. 30, 2024; see also the editorial Salis in chains, treated like an animal, in la Repubblica, Jan. 30, 2024.

Organization, have outgrown the reference to the principle of unanimity by resorting to deliberative mechanisms centred on the criterion of qualified majority[56]. It seems, therefore, fully enforceable what the President of the Italian Republic, during the speech on the future of the European Union given in Maastricht, argued, stressing that "unanimous voting is a largely outdated formula because it turns into a right of veto that paralyzes the Union"; a statement followed by the logical consideration: "there is a condition urged by the succession of crises and the Union needs to remove this limitation and complete its internal organizational path"[57].

8. In the preceding sections an attempt has been made to highlight what should be the technical forms of a disciplinary change suitable for allowing the conditions to be realised for giving concrete expression to a Europe with a configuration conforming to that in which a large part of the citizens living in the 'old continent' believe. Specifically, consideration has been given to a 'union of countries' which, without prejudice to the peculiarities that each of them presents, are linked by the common reference to a democratic logic that is summarised in the affirmation of the “State of law".

In the face of a political reality that, at the present time, leads to the exclusion of the possibility of arriving at a unified 'nation-state' soon, this link must be considered fundamental if the process of European integration is not to be downgraded to the level of a mere, utilitarian economic alliance aimed at the realization of a 'common market’.

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[56] *Perché in Europa si discute di unanimità,* on *www.ilpost.it/2022/05/14/ unanimita-unione-europea,* where such news is reported pointing out that "today, although the Union has not become a federal super-state, it has nevertheless developed a certain maturity and internal solidarity to consider abandoning the principle of unanimity”.

[57] *L’Unione europea e il dilemma dell’unanimità,* on *https://mondointernazionale.org/post/ lunione-europea-e-il-dilemma-dellunanimit%C3%A0*

It follows that academics cannot escape the need to research what the appropriate modalities of a common action should be indispensable in order to create an innovative relational system that interacts both on the economic-financial and socio-political levels. This is perhaps the way forward to not give up an aim that, for more than seventy years, has been in the expectations (not to say dreams) of those who strongly aspire to the constitution of a 'Europe of peoples' that would find implementation in the establishment of a federation-based state.

In this regard, it is worth noting that the European Commission's First Annual Report on the 'State of Law' points out that "the State of law is among the fundamental values of the Union, set forth in Article 2 of the Treaty on European Union. It is also the *conditio sine qua non* for the protection of all other fundamental values of the Union, starting with fundamental rights and democracy."[58]. Hence the need to comply with the rules that give content to it as they are essential to the very functioning of the Union; hence the necessary referability to the complex device of the organization of public powers and, therefore, to the differentiated ways in which they manifest themselves (i.e. principle of the uniqueness and individuality of the legal subject; legal equality of individual subjects; legal certainty; constitutional recognition of subjective rights).

In addition, there is the underlying reference to the observance of the criteria that make possible the exercise of the mentioned powers, namely relating to the delimitation of their scope, the prohibition of any interference by them on the application of the law, the separation of legislative and administrative institutions; needless to say, in this context, primary importance is ascribed to the principle of legality and the reservation of legislation, the subordination of legislative power to the protection of constitutionally defined rights; and the recognition of the autonomy of the judiciary. In this regard, Europe has manifestly

[58] European Commission, Relazione sullo Stato di diritto 2020, on www.google.it/ search?q=prima +relazione+annuale+sullo+Stato+di+diritto+della+Commissione+europea+&sca

aimed to express its full adherence to the logic that distinguishes the realization of a democratic regime, inspired precisely by the disciplinary criteria enunciated above. Thus, the 'State of law' identifies, on the deontological level, the counterpart of democracy, as can be inferred from the specific recommendations made by the Commission to member countries on the 'State of law'[59].

It should nevertheless be pointed out that some member States have adopted a behavioural line that can be defined as being at the antipodes of that required by the prescriptions under consideration. This refers, first and foremost, to Hungary. It is a very extensive narrative of the behaviour followed by that country, which, under the leadership of Victor Orban, prime minister and head of the majority Fidesz party, in recent decades has followed a path characterised by a shift from liberal ideological positions to a national conservatism typical of a radical right-wing [60]. The latter, over the course of a few decades, introduces an authoritarian breakthrough in that member State by getting the Parliament to grant him extraordinary powers to rule (for a long time on the basis of decrees), to close the Parliament itself, to amend or suspend existing laws, and to prevent the holding of new elections. It is explained, then, how in the presence of such a behavioural line, the European Union approved by a large majority (448 votes in favour, 197 against and 48 abstentions) the application against Hungary of Article 7 of the Lisbon Treaty, which, as mentioned earlier, sanctions cases of violation of the 'State

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[59] European Commission, *Relazione sullo Stato di diritto 2022,* on *https://italy. representation. ec.europa.eu/notizie-ed-eventi/notizie/relazione-sullo-stato-di-diritto-2022-la-commissione-formula-raccomandazioni-specifiche-gli-stati-2022-07-13_it,* where it is made clear that the purpose of the recommendations is to encourage member states to pursue reforms already undertaken or planned and to help them identify areas where improvements are needed.

[60] As a result of this process of ideological change Fidesz was suspended from the European People's Party in March 2019 from which it finally exited in March 2021 when the EPP with a new statute strengthened its commitment to the principle of the 'State of law', see the editorial entitled *Hungary: Viktor Orban's ruling Fidesz party quits European People's Party*, on *Deutsche Welle,* March 18, 2021.

of law'[61]. A situation is determined in Hungary that seems inescapably destined to diminish the democratic principles![62]

In other terms, Poland is also configured in line with a logic that gives room for predictable democratic drift. Heading in this direction are the decisions of the Court of Justice of the European Union, most recently in April 2023 and June s.a., which held that the judicial reform implemented in Poland in 2019 violates EU law because it implements a system of political control over the content of judicial decisions[63]. The Court of Justice in its pronouncements has set the bar high on mandatory compliance by member States with the 'State of law,' criticising both the excess of power of the Polish Supreme Court and the conceivable political interference in the work of judges which, on the level of concreteness, violates the protection of sensitive data and distorts the proper exercise of judicial power.

The literature has highlighted the possible causes of the reality that, over the past decade, has manifested itself in certain countries of the Visegrad group (i.e., belonging to the former Soviet bloc: Poland, Hungary, Czechoslovakia, which later split into the Czech Republic and Slovakia) in which there has been a substantial disapplication of the principle under consideration[64]. The causes of this have been,

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[61] ENCICLOPEDIA TRECCANI, ref. *Orban Vicor*, on *https://www.treccani.it/ enciclo-pediab /viktor-orban.*

[62] *What to do when Viktor Orban erodes democracy*, on *The Economist*, June 22, 2017.

[63] *Stato di diritto, Corte Ue: la riforma della giustizia in Polonia viola le norme dell'Unione,* visionabile su *www.eunews.it/2023/06/05/riforma-giustizia-polonia-condanna,* and the paper *Corte Ue contro Polonia: riforma giudiziaria del 2019 infrange il diritto dell'Unione,* visionabile su *www.ilsole24ore.com/ art/ corte-ue-contro-polonia-riforma-giudiziaria-2019-infrange-diritto-dell-unione,* in which they specifically state that said reform does not preserve the State of law and the effective and independent judiciary. On this subject, it is worth mentioning that already on April 29, 2020, the European Commission initiated infringement proceedings for violation of the 'State of law' against Poland in connection with the Judicial System Act of December 20, 2019, which entered into force on February 14, 2020. In the Commission's view, this law undermines the independence of Polish judges and is incompatible with the primacy of EU law (as, among other things, it would prevent Polish judges from directly applying certain provisions of EU law that protect the independence of judges, and from submitting requests to the Court of Justice for preliminary rulings regarding these provisions).

[64] KELEMEN, *Europe's Other Democratic Deficit: National Authoritarianism in Europe's Democratic Union*, in *Government and Opposition*, vol. 52, n. 2, 2017, pp. 211–238, in which the debate on the EU's democratic deficit is reported, not only highlighting the recent retreats of

among other things, seen in the tolerance of this phenomenon by some European states interested in holding on to close ties with said countries-and Hungary in particular-with a view to strengthening their moderate center-right European political force, the EPP.

Furthermore, some members of the Union, primarily Germany, looked to the Visegrad group, and especially to Hungary, as a lucrative area for investment and trade purposes. Behold, this circumstance, together with the pursuit of the aforementioned political interest, prevailed over the need to ensure the entry of countries devoted to democratic liberalism into the EU. Hence, it has long been allowed that a political and operational line could find affirmation in the States in question that did not respond to a correct adherence to the well-established principles underlying the process of European integration, a line that even ended up by allowing logics conflicting with the latter to prevail. This explains the political protection bestowed (especially on Hungary) and the economic-financial ties established with the countries of the former Soviet bloc which have resulted in detrimental conducts to European reality.

We would have encountered a different situation if the Union - at the beginning of this millennium -, in allowing the countries in question into its membership, had been less heedless of the fact that the long lapse of time they had spent under the weather of an autocratic regime might have extinguished in them (or at least in some of them) the demand for freedom and democracy that, as is well known, is an inescapable prerequisite for EU membership. In this regard, a different, more careful line of behaviour on the part of the Union would have been prudently required.

Hence, it is surprising how the need was not felt to initiate an appropriate

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democracy and the State of law in Hungary and Poland, but also reminding us that serious democratic deficits may also exist at the level of other member states in which case the EU has an appropriate role to play in addressing them.

period of preventive *vacatio* aimed at ruling out the possibility that, a few years after acquiring the status of a member country of Europe, Victor Orban as the president of the six-month term of the Union would feel empowered to be able to say: "We don't believe in the European Union, we believe in Hungary, and we look at the European Union from a point of view that if we do our job well, then that something we believe in, which is called Hungary, will have its payoff"[65].

These brief remarks on the negative implications of the 'unanimity principle' on the realization of an accountable, democratic, and pluralistic Europe demonstrate that there is still a long way to go to achieve the Union that many of us would like. Indeed, only a generalised belief regarding the need to implement the 'State of law' in all member States will enable us to see the separation of powers, the independence and impartiality of judicial bodies, together with a transparent legislative process that guarantees effective protection of rights and, above all, full respect for the dignity of individuals, fully realized in the EU.

9. The analysis carried out here highlights how the EU following the serious financial crisis at the beginning of the century, needs to modify the regulatory apparatus that presides over the exercise of public control over those belonging to the financial system. The 'principle of unanimity' for voting decisions identifies a factor that prevents the possibility of correcting some of the regulatory limitations previously mentioned; the application of this principle, as an inescapable rule of the decision-making procedure in force in Europe, is an obstacle to the adoption of regulatory measures aimed at eliminating the distorting profiles of the disciplinary mechanisms provided for by the UBE.

This principle, in diminishing the 'State of law' at the core of the EU's

[65] See statement made in 2011 in Parliament reported by *https://estjournal.wordpress.com/2011/04/11/ungheria-noi-non-crediamo-nelleuropa-a-meta-semestre-di-presidenza-dellunione-il-punto-della-situazione*

liberal-democratic system, has the dangerous effect of preventing a generalised affirmation in the European sphere of the criteria that distinguish the ordering logic typically characteristic of the Union established by its founding fathers. Thus, an institutional context comes to be configured that bears within itself the logical premise for the expectations of well-being and stability arising from the constitution of an aggregation of states, united by common socio-legal ideals inspired by equality and solidarity, to be, for the most part, disregarded. Indeed, conditions are identified that propose in the *continuum* the risks and errors inherent in the economic and monetary policies criticized by many scholars already in the aftermath of the creation of the European Union [66]. This is a dangerous reality, especially when one considers the open violation of human rights which, as the investigation highlighted, was perpetrated in one member country. From what can be deduced from the history of the EU - in which similar occurrences that resulted in clear violations of the 'State of law' ended without the execution of the sanctioning measures that were rightly adopted by the Union - it can be foreseen that such event seems destined to remain, on the level of concreteness, without any outcome against the State responsible for it.

Thus, a scenario characterised by uncertainty and perplexity is in line with the idea of a different Europe. This is also in view of the fact that further elements of concern are caused by the current geopolitical interactions that see some countries engaged in wars that are not easy to resolve as they are destined to change the geographical arrangements of large areas of Central Europe and the Near Middle East.

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[66] See DI TARANTO, *Le basi problematiche della moneta europea*, on *Aspenia*, *I futuri del capitalismo*, 2012, n. 56, 176-183; ID., *Il salvataggio temporaneo di Atene? Vantaggioso solo per Berlino*, in *Milano Finanza* March 16, 2012; ID., *L'Europa tradita,* Rome, 2014, *passim*; ID., *Così l'Italia può cambiare l'euro (e guadagnarci*), published *on line* on January 19, 2014, on sec. *Economia e Finanza* of *ilsussidiario.net*; SAVONA, *Serve un piano B per uscire dall'Euro. Da Renzi mi aspetto molto*, interview given on March 9, 2014, on *www.forexinfo.it*

This situation is then exacerbated by the outcomes of the upcoming U.S. general elections, which could lead to a change in that country's foreign policy with increasing detachment of the 'American power' from the affairs of the Union, given some previous existing disagreements with the latter on crucial issues such as, for example, the climate[67]. A conceivable isolation of the EU forced to downsize its traditional alliance with the U.S. and, therefore, to face various junctures without being able to rely on the 'protective shield' hitherto guaranteed by the U.S. In this view, however, here re-emerges the hope that Europe, will strive to achieve a greater 'strategic sovereignty' that will enable it to successfully face a new "constituent phase," as Mario Draghi recently emphasised in a speech at the Nabe, Economic Policy Conference in Washington [68]. The main issue to be resolved is the assertion of a sense of political responsibility such that "unity among and in diversity is pursued"[69]; final stage of a journey that, as has been advocated on other occasions, is aimed at renewing the community spirit, at overcoming the obstacles that "have been obstructed by the prevalence of individualisms, hegemonic tendencies and lines of behaviour adept at cunning and apathy".[70]

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[67] CAPRIGLIONE, *Clima energia finanza. Una difficile convergenza*, Milan, 2023, p. 40, where it states that "The escalation of U.S. actions contrary to preventing the adverse effects of climate change ... results in the Trump administration's declaration that the U.S. will not ratify the Paris climate accords, thereby shirking its commitment to cut U.S. emissions between 26 percent and 28 percent below 2005 levels by 2025.
[68] See the text (in Fabio Galimberti's translation) published on *IlSole24Ore,* February 16, 2024.
[69] CAPRIGLIONE – TROISI, *L'ordinamento finanziario dell'UE dopo la crisi*, Milan, 2014, p. 171.
[70] CAPRIGLIONE – IBRIDO, *La Brexit tra finanza e politica*, Milan, 2017, p. 163.

SUSPENSION OF VOTING RIGHTS IN THE REGULATION OF BANK OWNERSHIP STRUCTURES: A CASE FOR MORE INTEGRATION?

Vincenzo Troiano *

ABSTRACT: *This paper examines a specific aspect of the European regulation of bank ownership structures whether, in cases where an existing qualified shareholder is deemed unsuitable, and the competent authority intends to take action against this shareholder (e.g., a suspension of voting rights), a revocation of the qualifying holding (QH) decision is necessary. The analysis points to the assessment of acquisition decisions and, in particular, of the preventive revocation of the decision and evaluates the rationale for the different regimes in the Capital Requirements Directive (CRD) between the withdrawal of the authorisation to conduct banking business and the withdrawal of the authorisation to acquire a significant shareholding. The paper aims to analyse what is the nature of the suspension of voting rights in the European legal framework and how this is integrated into the relevant tools of the supervisory authorities. The analysis of the European regulation, also in terms of evolution thereof, and the observation of the relevant degree of fragmentation of the national regulations, also with respect to the Single Supervisory Mechanism, questions the need to achieve a further desirable harmonisation on the discipline of bank ownership structure as far as regards the specific issue of the link between suspension of voting rights and reassessment of*

* Full professor of Financial Markets and Intermediaries Regulation in the Department of Economics of the University of Perugia.
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the suitability of qualifying shareholders.

SUMMARY: 1. Introduction: suspension of voting rights and prudential assessment of acquisition decisions. - 2. The doctrinal debate. - 3. The development of the European framework on the assessment of acquisition decisions: objective and tools. - 4. Revocation (and suspension) of the acquisition decision. - 5. Suspension of voting rights. - 6. Regulatory fragmentation in the EU. - 7. Possible levels of harmonisation: a cost-benefit analysis of the harmonisation. - 8. Conclusion.

1. The rules governing the ownership structure of financial intermediaries and, in particular, of banks have been regulated at a European level since the last decades of the last century because of the specific relevance of this matter in the context of the rules of access to the financial services market and how regulated activities are carried out. The evolution over the years of the discipline has revealed various aspects of clarification; the result has been a complex set of rules that have been the result fruit of successive regulatory interventions of both hard law and soft law. With respect to the credit sector, the implementation of the Single Supervisory Mechanism (SSM) in the Eurozone has determined a network of powers and sources of reference, resulting in a substantive harmonisation of the disciplinary regimes.

This article focuses on some specific aspects of regulating this phenomenon, particularly the operational response to the subsequent assessment of the unsuitability of a qualified participant in the capital of a credit institution rather than on a comprehensive examination of all the relevant issues. This privileged angle of observation addresses the general issue at hand, providing insight into the subject matter's problem profiles.

More specifically, the preliminary question to answer is whether in cases where an existing (qualified) shareholder is deemed unsuitable, and the competent authority intends to take action against this shareholder (e.g., a suspension of

voting rights), a revocation of the QH decision is necessary. Ultimately, this is a question of the legal nature of QH assessments. In other words, the question to address is whether they should be regarded as point-in-time checks (linked to ongoing supervision) or as ongoing authorisations. Moreover, in this respect, whether there is room for different answers depending on the applicable national legislation or whether this is a case of maximum harmonisation.

More generally, we can extend the question to consider how this affects the allocation of responsibilities in the SSM, where the European Central Bank (ECB) maintains exclusive competence over the common procedures. At the same time, national competent authorities retain responsibilities concerning the ongoing supervision of the less significant institutions (LSIs).

This specific aspect requires a broader and more articulated consideration of the underlying issues. It is examined, on a preliminary basis, albeit in broad outline, the evolution of the European regulatory framework on shareholding structures in the capital of banks, taking into account both the dimension of integration between legislative discipline and soft law rules and as well as the relevant graft generated by the introduction of the SSM.

Having thus established the conceptual framework, the analysis will proceed as follows. First, we will examine in detail the provisions of the European regulation concerning suspending the exercise of voting rights or other measures against existing qualified shareholders of credit institutions deemed unsuitable. In this context, we will pay particular attention to reviewing the scope and application of Article 26 CRD.[1] Similarly, the examination must consider the discipline related to the suspension and revocation of QH decisions.

The analysis will devote particular attention to the rationale for the different

[1] Reference is made to the Capital Requirement Directive IV, Directive 2013/36/EU of 26 June 2013, on the access to the activity of credit institutions and the prudential supervision of credit institutions and investment firms, as subsequently amended.

regimes in the Capital Requirements Directive (CRD) between the withdrawal of the authorisation to conduct banking business and the withdrawal of the authorisation to acquire a significant shareholding and, consequently, what is the nature of the suspension of voting rights in the possible different qualification as a supervisory measure or as an integral part of the prudential assessment of QH.

In addition to the general considerations outlined above, others touch on more detailed and applicative aspects.

The first consideration is whether the suspension of voting rights is a measure that subjectively relates to the shareholders or is necessarily linked to a relationship between the shareholder and the credit institution. In the first case, the existence of such a scenario that may lead to the suspension affects all the QHs held by that shareholder; in the second case, it operates exclusively in the relationship with a given credit institution. The degree of harmonisation becomes ever greater if one considers the possibility of holding multiple QHs in credit institutions established in different jurisdictions, both within and outside the SSM.

On a different note, the question arises as to how the suspension of voting rights should work in the case of indirect shareholdings, where the event giving rise to the suspension concerns the indirect and not the direct shareholder. The alternative to be considered is whether the suspended voting right relates to the direct shareholders or the one exercised by the indirect participant.

To understand the relevance of the issues at stake, it may be helpful to briefly examine what are the rules applicable in the main European jurisdictions on the suspension and withdrawal of authorisation to acquire significant holdings in the capital of banks, also concerning the question of whether the suspension of shareholders' voting rights presupposes the suspension or withdrawal of QH assessment.

These considerations relate to the appropriateness of a maximum harmonisation regime in this area. This discussion will be complemented by a cost-

benefit analysis (for intermediaries, supervisors, and shareholders) associated with an assessment of the maximum harmonisation regime concerning the suspension and withdrawal of QH assessments. All this also verifies whether the above conclusion remains valid in the light of its application in the SSM.

2. First of all, it should be noted that the academic literature on the subject, while dealing extensively with the issues of ownership structures in general, has not yet paid specific attention to the issues relating to the interaction between the suspension of voting rights and the prior suspension or withdrawal of the QH assessment.

Studies on this issue have generally found that "shareholders" remain largely outside the scope of the CRD framework, with the obvious exception of the set of rules on the notification and assessment of proposed acquisitions of qualifying holdings in a credit institution.[2] Most of the contributions examine the different assessment criteria that the legislation introduced over time, in particular after the adoption of Directive 44/2007[3]. Some authors have also assessed the consistency between the authorisation and qualifying holdings regimes over time.[4]

Directive 44/2007 maintains parallels between the authorisation requirements for credit institutions and the prudential assessment of acquisitions and increases of holdings in order to avoid regulatory arbitrage (i.e., individuals and institutions wishing to engage in banking activities circumventing the initial conditions for authorisation by acquiring a qualifying holding in a target entity at a later stage).

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[2] See Ferrarini and Recine, *The Single Rulebook and the SSM: Regulatory Polycentrism vs. Supervisory Centralisation*, in *European Banking Union*, 2nd ed., Busch-Ferrarini, Oxford University Press, 2020, p. 242.
[3] Lackhoff, *Single Supervisory Mechanism. European Banking Supervision by the SSM*, Beck-Hart-Nomos, 2017, p. 171 ff.
[4] Kerjean, *The legal implications of the prudential supervisory assessment of bank mergers and acquisitions under EU law*, in *ECB Legal working paper series*, no. 6, June 2008, p. 54.

Notwithstanding the above, commentators raised the question as to whether this parallelism is justified, given that the rules applicable to an acquisition or an increase of shareholding do not necessarily square the same pattern as the authorisation rules and that this type of transaction could legitimately be subject to less onerous constraints than the conditions for the authorisation of a credit institution.[5] However, very few contributions have yet to be found in the literature that thoroughly analyse the reasons for the different treatment between the withdrawal of a credit institution's authorisation and the withdrawal of the QH assessment, insofar as these are the two cases of common procedures under the SSM. This aspect will, as anticipated, be the subject of specific attention in the research, given its relevance to the overall reconstruction of supervisory powers in this area.

In addition to the above, the literature analysing Art. 26(2) CRD has pointed out that this provision states that where the influence exercised by the "proposed acquirer" of a bank is likely to operate to the detriment of the prudent and sound management of the institution, the competent authorities shall take appropriate measures to put an end to that situation and that the CRD gives supervisors broad discretion in determining what constitutes appropriate measures, including the suspension of the exercise of voting rights.[6] The scope of such provision, particularly whether or not a suspension or revocation of the QH assessment should necessarily precede the suspension of voting rights, has not been fully considered.

3. Today's European regulation of bank ownership structures results from a long regulatory journey.

The regulation of ownership structures has historically safeguarded two

[5] Kerjean, *The legal implications of the prudential supervisory assessment of bank mergers and acquisitions under EU law*, in *ECB Legal working paper series*, no. 6, June 2008, p. 54.

[6] Kern, *Regulating Bank Governance and the EU Capital Requirements Directive*, in *European Business Law Review*, 2017, Volume 28, Issue 6.

primary objectives: on the one hand, to insulate the management of credit institutions from the influence of ownership that could interfere with the pursuit of sound management objectives; on the other hand, to eliminate or reduce barriers to market entry.

The EU principles of competitiveness in the internal market and the free movement of services and capital constitute the conceptual framework setting the relevant provisions.

The control of qualifying holdings is part of a more general framework of interventions in the structure of credit institutions, the first fundamental moment of which is market access, with a view to the authorisation of banking activities. Indeed, one of the requirements for the granting of authorisation to carry on business, as currently regulated by CRD[7], is the suitability of shareholders and members, with an explicit reference to the criteria laid down by the same directive concerning projects for the acquisition of qualifying holdings[8] .

The close link between the phase of the initial authorisation and that of the control of the ownership structure of banks is also reflected in the connection recognised in the context of the SSM between these different areas of control over the activities. As it is clarified by the recitals of Regulation (EU) No. 1024/2013, on the one hand, it is evaluated that the prior authorisation of access to the activity of a credit institution reflects a fundamental prudential safeguard to ensure, among other things, that such activity is carried out only by operators with a sound economic base (recital No. 20), while, on the other hand, it is considered necessary to assess the suitability of a new owner before the same one acquires a significant share in the credit institution (recital No. 22). In both cases and as an exception to

[7] Capital Requirement Directive IV, Directive 2013/36/EU of 26 June 2013 on the access to the activity of credit institutions and the prudential supervision of credit institutions and investment firms.

[8] See on this point Guarracino, *Il controllo degli assetti partecipativi delle banche. Contributo all'analisi della funzione e delle relative fattispecie*, Utet, 2023, p. 3 ff.

the usual structure of the division of powers between the NCAs and the ECB, the prerogatives of the ECB to intervene in these matters have been recognised *according to the common procedures*.

The conceptual embedding of the issue of ownership structures in the broader logic of access to credit activity is clear. Having said that, it is worth noting that the banking sector is not the only one in the financial field in which there is a regulation of ownership structures in pursuit of objectives that are entirely comparable to those observed in the banking sector. The reference is specifically and primarily to the investment services and insurance sectors.

Even the first European regulations, adopted in the various sectors, show a considerable degree of commonality in the basic principles borrowed from each other[9]; no specific definitions are provided even for the relevant parts of the provisions introduced; the procedural areas remain in the shadows, entrusted as they were considered to be at the time to national clarification[10].

Through harmonisation of the conditions for the exercise of activities, the framework introduces a system of prior assessment for the acquisition of qualifying holdings, which has been included in the subsequent revisions of EU instruments.

Indeed, with the adoption of Directive No. 44 of 2007[11] the issue of control of ownership structures acquires a more substantial dimension and relevance. From the regulatory perspective, for the first time, a Community legislative instrument crosses the various harmonised sectors of the financial field in order to achieve the

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[9] The reference is, in the banking field, to Directive 89/646/EEC, Art. 11; in the insurance field to Directives 92/49/EEC, Art. 15, for non-life insurance and 2002/83/EC, Art. 15, for life insurance; in the investment services field to Directive 93/22/EEC, Art. 9.

[10] On these aspects, see Troiano, *Acquisti di partecipazioni nel settore finanziario tra disciplina europea e regolamentazione interna*, in *Rivista trimestrale di diritto dell'economia*, no. 1/2023, p. 64 ff.

[11] See Directive 2007/44/EC of the European Parliament and of the Council of 5 September 2007 amending Council Directive 92/49/EEC and Directives 2002/83/EC, 2004/39/EC, 2005/68/EC and 2006/48/EC as regards procedural rules and evaluation criteria for the prudential assessment of acquisitions and increase of holdings in the financial sector (from now on “Directive 44”).

greatest convergence concerning the subject under consideration in pursuit of the objectives of free access to the market throughout the Union and in all types of companies in which financial operations may be carried out.

Directive 44 was based on the consideration that the legal framework in force did not provide detailed criteria for the prudential assessment of proposed acquisitions nor a procedure for their application. It was, therefore, necessary to clarify the relevant aspects and, in particular, to define the criteria and the procedure for prudential assessment. This was done to provide the necessary legal certainty, clarity and predictability regarding the assessment process and its outcome (recital No. 2).

In this context, Directive 44 seeks to harmonise the assessment criteria, which are clearly identified as strictly prudential in nature and are to be applied by the competent authorities in the context of both domestic and cross-border transactions (recital No. 3). Five specific criteria are identified, based on which the sectoral authority should assess proposed acquisitions.[12]

Specifically, Directive 44 regulates the procedural aspects of the assessment of proposed acquisitions, also in terms of the time profile of the preliminary and decisional phases[13]; it introduces the concept of concerted acquisition and specifies

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[12] These are (i) the reputation of the proposed acquirer; (ii) the good repute, integrity, professionalism and competence of those who, following the acquisition, will perform administrative and management functions in the intermediary; (iii) the financial soundness of the potential acquirer (iv) the ability of the intermediary to comply, following the acquisition, with the provisions governing its activities, including the suitability of the structure of the group of the potential acquirer to allow the effective exercise of supervision; (v) the absence of a well-founded suspicion that the acquisition is related to money laundering or terrorist financing operations.
See, in the literature, Lackhoff, *Single Supervisory Mechanism. European Banking Supervision by the SSM*, Beck-Hart-Nomos, 2017, p. 171 ff.

[13] Also originating in the Directive in question is the requirement that the competent authority, in the presence of two applications for authorisation relating to the same intermediary, must operate in a non-discriminatory manner, *also in* terms of the time required for the preliminary investigation. See, on this point, European Commission, *Commission staff working document accompanying document to the Proposal for a Directive of the European Parliament and of the Council amending Council Directive 92/49/EEC and Directives 2002/83/EC, 2004/39/EC, 2005/68/EC and 2006/48/EC as regards procedural rules and evaluation criteria for the prudential assessment of*

the configuration of the proposed acquirer.

The homogenisation is intra-sectoral and inter-sectoral. Intra-sectoral because, sector by sector, there was an asymmetry in the manner and type of assessment with which the competent national authorities exercised their prerogatives. Inter-sectoral because the difference in the assessment criteria used in each sector was further accentuated between sectors.

As mentioned above, there is also an explicit link between the authorisation phase to carry on business and the phase of prudential assessment of proposed acquisitions. Indeed, the Directive aims to prevent “any circumvention of the initial conditions for authorisation through the acquisition of a qualifying holding in the entity concerned, to which the proposed acquisition relates” (recital No. 3). In this respect, Directive 44 does not limit the power of the competent authorities to take into account commitments made by the proposed acquirer to comply with prudential requirements under the assessment criteria laid down in that directive, provided that the rights of the proposed acquirer are not affected.

Another aspect that Directive 44 clarifies is the relationship between the prudential assessment of a proposed acquisition and the prudential supervisory requirements. This is in the sense that the former should in no way suspend or replace the existing prudential supervisory requirements and other rules that have applied to the entity concerned since its initial authorisation (recital No. 4). Thus, in the context of the present analysis a relevant profile emerges, namely the link between the prudential assessment of participatory structures and the prudential supervisory tools.

The need for maximum harmonisation in this area – regarding the profiles regulated explicitly by the legal instrument in question – stems from the consideration that, in increasingly integrated markets where group structures may

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acquisitions and increase of shareholdings in the financial sector - Impact assessment (COM(2006) 507 final), nt. 16.

extend across several Member States, the acquisition of a qualifying holding is the subject of in-depth scrutiny in several Member States, which could only be adequately addressed by the introduction of uniform rules and assessment criteria (recital No. 6).

The logic of harmonising application criteria in the implementation phase of prudential assessments is also evident in strengthening the interaction and cooperation phase between the various parties involved in implementing sectoral rules.

On the one hand, the relationship between the proposed acquirer and the supervisory authorities comes to the fore. This is supported, for example, by the preamble to Directive 44 provision, which states that "[t]he cooperation between the proposed acquirer and the competent authorities would thus remain an inherent feature of the entire assessment period. Regular contacts between the proposed acquirer and the competent authority of the regulated entity to which the proposed acquisition relates may begin even before the formal notification. Such cooperation should include a genuine effort to provide mutual assistance, for example, to avoid unanticipated requests for information or late submission of information during the assessment period" (recital No. 7).

From another perspective, interaction is measured by the relationship between the competent authorities. In this view, it is "essential that the competent authorities cooperate closely when assessing the quality of a proposed acquirer that is a regulated entity authorised in another Member State or another sector. While it is considered appropriate that the responsibility for the final decision on the prudential assessment remains with the competent authority responsible for the supervision of the entity in which the acquisition is proposed, that competent authority should take into full account the opinion of the competent authority responsible for the supervision of the proposed acquirer, particularly as regards the assessment criteria directly related to the proposed acquirer" (recital 10).

As far as the banking sector is concerned, Directive 44 brought about a new cross-sectoral harmonisation provisions into the sectoral regulation in the credit sector, at the time contained in the Directive 2006/48/EC[14].

CRD does not change the structure proposed by Directive 44. It includes a disciplinary system based on prior notification and assessment of the so-called proposed acquisition by a proposed acquirer (i.e. any natural or legal person) who has decided, alone or in concert with others, to acquire, directly or indirectly, a qualifying holding[15] in a credit institution or to further increase, directly or indirectly, such a qualifying holding[16] .

To ensure the sound and prudent management of the credit institution in which an acquisition is proposed, and having regard to the likely influence of the proposed acquirer on the credit institution, the competent authorities shall assess the suitability of the proposed acquirer and the financial soundness of the proposed acquisition against the criteria set out in Article 23 CRD.[17]

The competent authorities may contrast the proposed acquisition only if

[14] The European directives that have followed one another over the years in the various sectors of the financial sector - and which, if we want to proceed by leaps and bounds, are today grouped in the CRD for the banking sector, in Midif II for investment services, in Solvency 2 for the insurance sector and in more sectorial directives such as PSD 2 and EMD 2 - each contain the decline of discipline with more or less homogeneous sources, given the regime mentioned above of maximum harmonisation provided for by Directive 44.

[15] As defined in point 36 of Art. 4.1 of Regulation (EU) 575/2013.

[16] In such a way that the share of voting rights or capital held by it reaches or exceeds 20%, 30% or 50%, or that the credit institution becomes its subsidiary.

[17] The criteria are the following: (a) the good repute of the proposed acquirer; (b) the knowledge, skills and experience of the members of the management body who will determine the direction of the business of the credit institution as a result of the proposed acquisition; (c) the financial soundness of the proposed acquirer, in particular in view of the type of business pursued and envisaged in the credit institution in which the acquisition is sought (d) whether the credit institution will be able to comply and continue to comply with the prudential requirements applicable to it, including whether the group of which it will become a part has a structure that makes it possible to exercise effective supervision, effectively exchange information among the competent authorities and determine the allocation of responsibilities among the competent authorities; (e) whether there are reasonable grounds to suspect that, in connection with the proposed acquisition, money laundering or terrorist financing has been committed or attempted or that the proposed acquisition could increase the risk thereof.

there are reasonable grounds to do so under the criteria set out therein or if the information provided by the proposed acquirer is incomplete.

According to Article 22(6) CRD, it shall be deemed approved if the competent authorities do not oppose the proposed acquisition in writing within the assessment period. Thus, a principle of silent consent operates, and instead of an authorisation procedure, a non-objection regime applies[18]. Also, given the maximum harmonisation regime in this area, Member States may not impose more stringent requirements than those laid down in the Directive.

As it will be discussed later, the prior assessment phase may be followed by a subsequent withdrawal or suspension, which may also affect the exercise of the shareholders' voting rights. However, before describing the evolution and structure of this specific part of the disciplinary framework, it is necessary to consider, still at a general level, two different profiles of relevance: on the one hand, the impact of the soft law rules that have supplemented the provisions contained in the regulatory sources, and, on the other hand, the application of the SSM rules in the field.

As far as the first profile is concerned, it should be underlined that, although Directive 44 aimed to promote maximum harmonisation and homogenisation in all Member States of the methods of applying the system of control of ownership structures, it did not provide details even on essential aspects of the discipline, such as the identification of relevant cases. It was, therefore, necessary to embed *soft-law* instruments for this purpose. In 2008, the first guidelines on the prudential assessment of acquisitions and increases of shareholdings were adopted by the three so-called third-level committees – later replaced by the three European Authorities (EBA, ESMA and EIOPA) – envisaged at the time by the Lamfalussy

[18] On these profiles, also about interactions with national regimes, see the considerations of Guarracino, *ult. op. cit.*, p. 23 ff.

procedure, namely CEBS, CESR and CEIOPS (also "3L3 Guidelines")[19]. The 3L3 Guidelines focus on the objective of creating a uniform way of applying the assessment criteria set out in Directive 44, while less attention is placed to the contribution to the substantive profiles of the discipline revised by the 2007 Directive, such as the concepts of acting in concert, significant influence, and unintentional crossing[20] .

In 2016 - with entry into force in 2017 - the now-established European Supervisory Authorities (ESAs) adopted, per Article 16 of their respective founding regulations, new Joint Guidelines on the Prudential Assessment of Acquisitions and Capital Increases in the Financial Sector (the Joint Guidelines). In general terms, joint ESAs guidelines represent the ESAs' view on the appropriate supervisory practices within the ESFS or how Union law should be applied in a particular sector. By empowering the ESAs to adopt guidelines, the European legislator intended to confer powers of stimulus and persuasion distinct from the power to adopt legally

[19] See CESR CEBS CEIOPS, *Guidelines for the prudential assessment of acquisitions and increases in holdings in the financial sector required by Directive 2007/44/EC* (CEBS/2008/214 CEIOPS-3L3-19/08 CESR/08-543b).

[20] The *glossary* attached to the 3L3 Guidelines, on the subject of *acting in concert*, limits itself to indicating as relevant the decision taken by several persons to exercise the rights deriving from the shareholdings acquired based on an express or implied agreement between them; as to *significant influence, it* considers as a qualifying element the possibility of appointing a member of the *board*; finally, concerning the *unintentional crossing of thresholds*, the purchase of treasury shares and the capital increase in which some shareholders did not participate are identified as (exclusive) relevant hypotheses of this phenomenon (with the effect of increasing the holdings of the remaining shareholders).

Although the 3L3 Guidelines suffer from the fact that they are not binding sources and do not add much to the normative data contained in the Directive, they are still relevant today: indeed, as an instrument in force until 2017, it is taken into account in all events concerning the ownership structures of supervised intermediaries that have then had judicial repercussions in the following years: see, for example, the EU General Court of 11 May 2022 in Case T-913/16 Fininvest and others v ECB (in OJEC, 11 July 2022, C 266), paragraphs 151 ff., in which one of the grounds analysed concerned precisely the applicability of the 2008 guidelines to complainants: see, for a preliminary comment, Annunziata, *Qualifying shareholders and the fit and proper assessment. A new chapter in Fininvest-B. v. ECB (CASE T-913/16 - Decision of the General Court)*, in *Le Società*, no. 7/2022, p. 827 ff., and Spolidoro, *"Mediolani mira omnia". Fusioni e acquisizioni di partecipazioni rilevanti in enti creditizi*, *ibid.,* p. 830 ff.

binding acts[21] . Nevertheless, the national competent authorities concerned are obliged to comply with the guidelines by making every effort to integrate them appropriately into their supervisory practices (e.g. by amending their legal framework or supervisory procedures)[22]. This is the case even though the joint guidelines are primarily addressed to financial institutions.

The Joint Guidelines which aim to clarify "the procedural rules and assessment criteria to be applied by competent authorities for the prudential assessment of acquisitions and increases of qualifying holdings in the financial sector" (cf. p. 2/45) - are intended to enhance legal certainty, clarity and transparency of the approval process for proposed acquisitions and to ensure consistent treatment across the EU and sectors[23] .

It is worth noting that the Joint Guidelines, which build on the conclusions of the European Commission's 2013 report on the application of Directive 44 in the various Member States[24], focus mainly on two macro-issues with a significant impact on achieving a system of maximum harmonisation, namely the introduction of harmonised criteria for the analysis of the notions of "indirect qualifying holding" and "persons acting in concert"[25] on the one hand, and the application of the notion

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[21] As also recently reaffirmed by the Court of Justice (with reference to the EBA, but with a principle that can be extended to all ESAs): see Court of Justice (Grand Chamber), Judgment of 15 July 2021, in Case C-911/19, FBF v ACPR, paragraph 48; see also Perassi, *Sanzioni e procedimento sanzionatorio Banca d'Italia/BCE*, speech at the Consob-Bocconi Seminar on *Supervisione finanziaria e sistema sanzionatorio*, Rome, 28 October 2022.
The lack of binding effect means such acts cannot be subject to an action for annulment under Article 263 TFEU.

[22] *See*, EBA ESMA EIOPA, *Final Report. Joint Guidelines on the prudential assessment of acquisitions and increases of qualifying holdings in the financial sector*, December 2016 JC/GL/2016/01 (the "Final Report"), p. 8.

[23] See, EBA ESMA EIOPA, *Final Report*, p. 5.

[24] See European Commission, *Report from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions. Application of Directive 2007/44/EC amending Council Directive 92/49/EEC and Directives 2002/83/EC, 2004/39/EC, 2005/68/EC and 2006/48/EC as regards procedural rules and evaluation criteria for the prudential assessment of acquisitions and increase of holdings in the financial sector,* Brussels, February 2013 COM(2013) 64 final (the "2013 Report")

[25] The 2013 Report indicates that the competent national authorities used different methods, often based on concepts in the respective national laws, to establish the existence of indirect participation

of “acquisition decision” in cases where a relevant holding is unintentionally exceeded, on the other.

Without going into the content of the Joint Guidelines in detail here, it is worth considering insofar as it may be relevant to the analysis that follows, the fact that the Final Report states that it has carried out preliminary analyses of the regulatory options under consideration, assessing their impacts on credit and financial institutions and on competent authorities[26]. As reported elsewhere, the failure to assess the possible impact on potential acquiring candidates and, more generally, on investors proposing to initiate acquisition projects in target companies is surprising. Indeed, at a time when the scope of the relevant cases subject to prudential supervision is being redefined, apart from the impact on the workload of the supervisory function (which may increase as the number of situations to be assessed increases), the group most affected is precisely that of potential acquirers (who may also be financial intermediaries), who are exposed to a possible increase in the administrative burden for the realisation of their investments. And if it is true that the focus of the ESAs analysis is on preserving the sound management of the target companies, the introduction of measures that make the inflow of third-party financial resources into the capital of such companies less attractive or more complex determines an overall situation that would probably deserve to be evaluated according to the logic of costs and benefits[27].

The second significant change in the control system on access to the credit market and the related control of ownership structures concerns, as already anticipated and known, the implementation of the SSM.

In particular, Regulation 1024/2013 indicates that authorisation prior to

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or concerted action and, as a result, there were different interpretations as to whether a plan to acquire or increase participation had to be notified in such circumstances (see p. 5 f.).

[26] See, Final Report, p. 49.

[27] See on this point Troiano, *Acquisti di partecipazioni nel settore finanziario tra disciplina europea e regolamentazione interna,* cit. p. 72 ff.

access to the activity of credit institution constitutes a fundamental prudential safeguard to ensure that such activity is carried out only by operators with an adequate economic base, an organisation capable of managing the specific risks inherent in the activity and suitable managers (*recital* no. 20). Hence the appropriateness to confer on the ECB the exclusive power to grant and withdraw authorisation in respect to all credit institutions (and thus also the LSIs) of the countries participating in the SSM (see Regulation 1024/2013, Art. 4.1.a). This power must be exercised per the rules of the so-called common procedures, which consider the role of the national authorities in this matter (see Regulation 1024/2013, Art. 14 and Regulation 468/2014, Art. 73 ff.). Along its powers, the ECB applies all relevant Union law and, where that law consists of directives, the national legislation transposing those directives (see Regulation 1024/2013, Art. 4.3).

Similarly, in the matter of the authorisation of significant shareholdings, Regulation 1024/2013 indicates that, in order to ensure that the ownership of a credit institution remains appropriate and financially sound at all times, it is relevant to assess the suitability of any new owner before it acquires a significant shareholding in the credit institution. As a Union institution, the ECB is considered well-placed to carry out the necessary assessment without imposing undue restrictions on the internal market (*recital* 21). It is therefore appropriate to confer on this authority the exclusive competence to assess the acquisition and disposal of significant shareholdings (see Regulation 1024/2013, Art. 4.1.c), except in the context of bank resolution, in respect of all credit institutions (and thus also the LSIs) of the countries participating in the SSM. Also, this competence must be exercised following the rules of the so-called common procedures, which take into account the role of national authorities (see Regulation 1024/2013, Art. 15 and Regulation 468/2014, Art. 85 ff.). Also in this case, the ECB will apply all relevant Union law, according to Article 4.3 of the Regulation 1024/2013.

4. The CRD does not regulate in any way the cases of possible (suspension and) withdrawal of consent to the acquisition or increase of participation in the capital of a credit institution, unlike the case of the authorisation to take up banking business. In the latter case, Article 18 of the CRD provides that the competent authorities may revoke the authorisation granted to a credit institution in certain circumstances, which explicitly include the case where the credit institution no longer fulfils the conditions to which the authorisation was subject (including the conditions relating to the quality of the shareholders)[28].

The correlation mentioned above between the phase of the credit institution's access to the market and the phase of verification of the adequacy of its ownership structure makes it necessary to examine the rationale underlying the different treatment of the two situations and, in particular, the silence of the European legislator about the possible withdrawal of the consent to the acquisition of a qualifying holding.

At first sight, the absence of an explicit rule on withdrawal would be due to the need to consider the differences in the various national systems concerning the forms of supervisory activity. Given that the CRD only requires prior notification of the acquisition decision but not the form in which the assessment should be concluded (unlike in the case of the authorisation to conduct business), it would follow that not all Member States would have to follow this notification with the initiation of an explicit procedure, the adoption of a final measure and a possible power of withdrawal of the same[29].

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[28] See in this respect the *Pilatus* case, *Pilatus Bank Plc and Pilatus Holding Ltd. v ECB,* General Court – Case T-27/19 – Judgement of 2 February 2022 –ECLI:EU:T:2022:46; see also, Gardella, *Withdrawal of authorisation for lack of good repute of shareholder with qualifying holdings,* in D'Ambrosio, Chirico, Droghini and Pala (eds.), *Pandectae. Digest of the case-law on the Banking Union,* Quaderni di Ricerca giuridica della Banca d'Italia, N. 92, Jan-Jun 2022, p. 24.

[29] See Venturi, *Commento all'articolo 19*, in *Commentario al testo unico delle leggi in materia bancaria e creditizia*, directed by Capriglione, 2018, t.1, p. 226 ff.

Against this approach, which reduces the distinction between the regimes to a purely formal one, it has been rightly pointed out that the structure of CRD, in the provisions of Article 22(6) and (8), expressly presupposes an "approval" of the acquisition. Hence, from a more general perspective, a different reconstruction has been put forward to justify the absence of an express rule on revoking the approval of the acquisition of qualifying shareholdings. According to this different approach, such absence would be justified by the fact that, under European law, in the event of the failure of the conditions of sound and prudent management, where the disruptive cause of the bank sound and prudent management cannot otherwise be removed, as a last resort the withdrawal of the authorisation to exercise the activity would be envisaged[30].

This interpretation has the merit of recomposing the systemic framework offered by the European legislator.

The fact remains that the hypothesis of the withdrawal of the authorisation to carry on business as a reaction to the failure to meet the conditions relating to the quality of the shareholders appears to be an instrument which, in terms of proportionality and reasonableness, may prove to be excessive concerning its purpose[31].

Moreover, without prejudice to the need for an assessment on a case-by-case basis, it may be evaluated that the scenario of withdrawal of authorisation may find its justification in terms of proportionality in the event of loss of the requisites on the part of a lone participant (as in the *Pilatus case*) or of the widely controlling participant, much less so in different cases and even less so, almost to the point of

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[30] *See*, Guarracino, *Il controllo degli assetti participativi delle banche. Contributo all'analisi della funzione e delle relative fattispecie,* cit., p. 72, which in this regard highlights the parallelism with what the Court of Justice has indicated in relation to the loss of the requirements of good repute of persons in charge of the effective management of the activity of investment firms: ECJ. EU, 13 September 2018, C-358/16, *UBS Europe SE*, ECLI:EU:C:2018:715, paragraph 46.

[31] See, Cases C-750/21 P and C-256/22 Pilatus Bank plc v ECB, *Opinion* of Advocate General, 25 May 2023.

being able to exclude it in general terms, in the scenario in which the loss of requisites concerns a minority participant, all the more where it is not an initial participant but a person who has subsequently entered into the shareholding structure.

The consequence is that the absence of an explicit rule at the European level opens the way to the definition of different application rules at the national level. For example, regarding the Italian legal system, Article 19(5) of the Consolidated Banking Act provides that the authorisation to acquire a qualifying holding may be suspended or revoked if the conditions or requirements for its grant are no longer met or are modified. In this case, following general proportionality principles, it is possible to consider that in the event of the disappearance of a condition for the authorisation of a qualified participant, the revocation (or suspension) of that authorisation should be activated instead of proceeding with the revocation of the authorisation to engage in the activity, as is now expressly stated by Article 14(3-bis) of the Consolidated Banking Act.

5. Moving to the analysis of the voting rights suspension regime, we will focus on the situations where the participant (i) has freely acquired a holding in the capital of an entity, provided that the size of the holding is below any relevant threshold or (ii) holds a qualifying holding in respect of which the competent authorities already released a favourable assessment. Thus, the position of a prospective acquirer who has requested an assessment of its position but whose assessment is pending or has been unfavourable remains outside the scope of this analysis.

The above clarification is necessary given the construction of the CRD provisions under consideration.

In this respect, successive European regulations have maintained an almost unchanged regime, demonstrating the permanence and relevance of credit

institutions' ownership structure in the sector's regulatory construction.

Directive 89/646/EEC already indicated that - while expressly empowering the home Member State to lay down stricter rules than those provided for, among other things, in Article 11, concerning institutions authorised by its competent authorities (recital 9) - Member States had to provide that, where the influence exercised by persons wishing to acquire, directly or indirectly, a qualifying holding in a credit institution is such as to constitute an obstacle to the prudent and proper management of that institution, the competent authorities were to take appropriate measures to put an end to that situation (Article 11).

Such measures could, in particular, take the form of injunctions, sanctions against managers or suspension of the exercise of the voting rights attached to the shares or units held by the shareholders or members concerned. Similar measures will be taken against natural or legal persons who fail to comply with the *prior information* obligations laid down in the framework. In the event of the acquisition of a holding despite the opposition of the competent authorities, Member States shall provide for the suspension of the exercise of the relevant voting rights, the nullity or the possibility of the annulment of the votes cast, without prejudice to any other sanctions to be adopted.

Directive 2000/12/EC and later Directive 2006/48/EC maintain the structure of the original framework.

As mentioned above, directive 2007/44/EC aims to harmonise the rules for the prudential assessment of proposed acquisitions. In line with this approach, the recitals explicitly state that “in increasingly integrated markets and where group structures may extend across several Member States, the acquisition of a qualifying holding is subject to in-depth scrutiny in several Member States”. It is, therefore, essential to harmonise the procedure and prudential assessments as far as possible across the EU without Member States introducing stricter rules. The thresholds for the notification of a proposed acquisition or disposal of a qualifying holding, the

assessment procedure, the list of assessment criteria and the other provisions of this Directive applicable to the prudential assessment of proposed acquisitions should, therefore, be subject to harmonisation to the greatest possible extent. As a result, subsequent directives replaced the provision allowing Member States to adopt stricter rules in cases where, among other things, the acquiring candidate would adversely affect the sound and prudent management.

The CRD also proposes in Article 26 the provision that the Member States shall provide that where the influence exercised by the persons referred to in Article 22(1) is likely to operate to the detriment of the prudent and sound management of the institution, the competent authorities shall take appropriate measures to put an end to that situation. However, the provision is more explicit in linking the exercise of the prerogatives established to the sectoral authorities, stating that such measures may consist of injunctions and penalties, subject to Articles 65 to 72[32], against members of the management body and managers, or the suspension of the exercise of the voting rights attached to the shares held by the shareholders or members of the credit institution concerned. Similar measures shall apply to natural or legal persons who fail to comply with the obligation to provide prior information referred to Article 22(1) and subject to Articles 65 to 72.

From a strictly literal point of view, the provision of Article 26 of the CRD considers the position of the *proposed acquirer, i.e.* the person who, before acquiring a qualifying holding, has an obligation to notify such intention to the competent authority. Such a limitation of the subjective scope of application of the provision would, however, be inconsistent with the overall logic of the system since it would limit the moment of application of the regime described above to a phase

[32] Article 66(2), f) of the CRD establishes that "Member States shall ensure that in the cases referred to in paragraph 1, [including acquiring a qualifying holding] the administrative penalties and other administrative measures that can be applied include at least the following: [...] suspension of the voting rights of the shareholder or shareholders held responsible for the breaches referred to in paragraph 1".

prior to the acquisition of the holding (or, in any case, to a stage prior to the completion of the QH assessment: i.e., until the natural or legal person may still qualify as a proposed acquirer). This is the moment when the identification of the possible forms of influence on the sound and prudent management of the entity appears to be residual (the case of the holder of a non-qualifying holding who applies to increase the holding, the case of the person linked by financial or other ties to the entity who applies to acquire a qualifying holding, the case where the proposed acquirer acquires the qualifying holding after the notification to the authority but before the completion of the assessment by the latter). From the point of view of a finalistic interpretation of the provision, it can be argued that the provision may also cover the much more substantial hypotheses of situations in which the proposed acquirer has passed the assessment by the authority and is exercising its rights as a qualified participant and that the assessment of the impact on the sound management of the institution may be based on observation of how the rights deriving from the qualified participation are exercised.

Turning the discussion to the power of suspension, this is configured, *inter alia*, in two specific cases[33]: (i) where the exercise of influence by the *investor* may be detrimental to the sound and prudent management of the institution (*detrimental influence suspension*) and (ii) where the proposed acquirer has failed to comply with the prior disclosure requirements laid down by the relevant rules (*omission suspension*).

These two cases differ significantly in terms of the conditions for their activation although they are similar in terms of possible outcomes (including the suspension of voting rights). If the *suspension by omission* seems to be complete in the identification of the hypothesis valid for its activation (failure to comply with

[33] Article 26 (2) of the CRD, also provides that if a holding is acquired despite opposition by the competent authorities, Member States shall, regardless of any other penalty to be adopted, provide either for the exercise of the corresponding voting rights to be suspended, or for the nullity of votes cast or for the possibility of their annulment.

the timely fact of prior notification), the same cannot be said about the first situation considered (in the sense preferred here, according to which the provision applies not only to the candidate purchaser but also to the participant).

As far as the structure of the discipline is concerned, it should be underlined that, in both hypotheses the European legislator does not define the applicable discipline precisely, leaving it to the Member States to determine the concrete modalities of application of the discipline in question; nor does it define the essential elements through which the provision is to be precisely applied.

For the sole purpose of enumerating the qualifying points in which the limited preceptive scope of the European provisions is unravelled, it is worth considering that (i) there are no detailed indications as to the criteria based on which the *influence* of a participant in the relevant capital is to be identified to trigger the discipline, nor are any indices or presumptions of the recurrence of such influence identified; (ii) it is not specified what the obstacle to the sound and prudent management of the institution must or may consist of[34]; (iii) the measures that the authorities may take if they find that the conditions for a significant obstacle to sound and prudent management exist are listed very generally, without any criterion prioritising one measure over another. This last profile is particularly relevant in our analysis since it also marks the absence of criteria to define when the suspension of voting rights can or should be resorted to instead of, for example, the application of a fine.

There is a very significant difference in the impact on the management of the entity and the exercise of the prerogatives associated with share ownership resulting from the application of a measure affecting the exercise of the rights associated with share ownership, as opposed to an intervention of a purely financial

[34] From this point of view, even in the assessment for the acquisition of a qualified shareholding, the impairment of the sound and prudent management of the participated entity is relevant. However, in that hypothesis, such circumstance is well circumstantiated in light of the well-known criteria to which the competent authorities must adhere in performing their activities.

nature. In this context, is not surprising that European legislation is also silent on the procedural profiles that may lead to the adoption of a measure against the participant, which may harm the sound management of the entity. This applies to the procedural process that may lead to adopting one or other of the measures provided for in the rules and to the most relevant profile here, whether or not the suspension of voting rights presupposes the suspension or revocation of the qualifying holding assessment.

The fact that the CRD does not expressly provide a measure of suspension and revocation of the QH assessment and the fact that Article 26 of the CRD does not contemplate the adoption of the measures to such intervention, leads to the conclusion that the EU regulatory framework remains agnostic on the issue of the link between the QH assessment and the adoption of a measure in response to conduct of the participant relevant for Article 26 CRD.

The fact that, in a set-up such as the one described, the rules introduced in the regulations of the various Member States are fragmented and do not present elements of substantial homogeneity is a predictable outcome.

Another aspect that the European rules do not address is how to apply the suspension of voting rights in the case of indirect shareholdings. In the design of the European legislation, the detrimental influence concerned is exercised by the participant (in our preferred sense of potential acquirer) in the entity. There is *no question in the case of* direct shareholdings since, in this case, the relationship between the participant and the entity is not mediated by an intermediate entity; in such cases, therefore, the suspension of voting rights relates to the shares or quotas held directly by the participant. However, as is well known, the system of ownership structures of banks also considers indirect shareholdings, both in cases where the shareholding is held through a controlled entity (control criterion) and where the different multiplication criterion applies. Whichever criterion is applied to the position of the indirect participant, the question arises as to how the

suspension of voting rights is to be applied. Given the silence of the European legislator and in the absence of any guidance from soft law sources (such as the Joint Guidelines), at least two different hypotheses can be configured in the abstract: (i) that the suspension concerns the voting rights exercisable by the indirect participant in the downstream entity (subsidiary or investee) in the chain of connection with the institution, or (ii) that the suspension concerns (also) the voting rights of the direct participant in the credit institution.

In order to test hypothesis (i) at a systematic level, it has to be assumed that the indirect participant, through the exercise of voting rights in the entity down the chain of ownership, can exercise a (negative) influence on the management of the target entity. This is certainly more likely in situations where the indirect participant is identified based on the control criterion than where, on the contrary, the indirect participant is identified based on the multiplication criterion.

In all cases where the shareholding whose voting rights are suspended is not the shareholding directly owned by the participant to whom the detrimental influence is attributed, it is doubtful whether a measure of constrain of the governance rights (i.e. voting rights) attached to the shareholding is in line with the principles. Let us consider the case of the indirect participant (A) identified based on the multiplication criterion and of a measure of suspension of voting rights applied to the shares in the entity (C) held by the intermediate entity (B) in which the indirect participant has a participation. In this scenario, B could be participated not only by A but also by many other shareholders, including controlling shareholders, and therefore, notwithstanding the possible influence that A could exert on C through B, the constrain of the latter's voting rights in respect of the shareholding in C would result - (already) from the perspective of all the other shareholders of B, but also from the point of view of the sound management of C itself - not compatible with the principles of reasonableness and proportionality. And this, without wishing to disregard the protection of the property rights of the

other shareholders of B, who would be affected, in a manner impacting their prerogatives as shareholders of B by a measure intended to protect C from the influence of A.

A possible solution lies in the suspension of voting rights which applies to the shareholding directly held by the indirect participant (in the above example, the shareholding of A in B). However this case raises a few concerns. For the sake of simplicity, A and B are companies established in Member State X, while institution C is established in Member State Y. In this case, the need to protect the sound and prudent management of institution C operating in Member State Y would lead to adopting a measure suspending the voting rights exercisable by a person resident in another Member State in a company also resident in another Member State. The difficulty of reconciling the requirements of sectoral protection with the rules applicable in the various Member States, including company law, is manifest.

In this complex situation, we can derive a possible point of orientation from the recently introduced special regime for financial holding companies and mixed financial holding companies (Art. 21a CRD). It provides that where the *consolidating supervisor* has determined the conditions for *approval*[35] are not or are no longer met, the financial holding company or mixed financial holding company shall be

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[35] According to Art. 21-bis para. 3, approval may only be granted to a financial holding company or mixed financial holding company if all of the following conditions are met: (a) the internal arrangements and the distribution of tasks within the group are adequate to comply with the requirements of CRD and the CRR on a consolidated or sub-consolidated basis and, in particular, are adequate to: (i) coordinating all subsidiaries of the financial holding company or mixed financial holding company, including, where necessary, through an appropriate distribution of tasks among the subsidiary entities; (ii) preventing or managing intra-group conflicts; and (iii) enforcing within the group the policies established at group level by the parent financial holding company or mixed financial holding company; (b) the structure of the organisation of the group of which the financial holding company or mixed financial holding company is a member does not hinder or otherwise prevent the adequate supervision of subsidiary or parent institutions in respect of the individual, consolidated and, where applicable, sub-consolidated obligations to which they are subject. The assessment of this criterion shall take account in particular of (i) the position of the financial holding company or mixed financial holding company in the context of a multi-tiered group, (ii) the shareholder structure, and (iii) the role of the financial holding company or mixed financial holding company within the group.

subject to *appropriate supervisory measures* aimed at ensuring or, as the case may be, restoring the continuity and integrity of supervision on a consolidated basis and in compliance with the requirements of the CRD and the CRR on a consolidated basis. Such measures may include, inter alia, *suspending the exercise of voting rights attached to shares in subsidiary institutions held by* the financial holding company or mixed financial holding company[36], issuing instructions or guidelines to the financial holding company or mixed financial holding company to transfer shares in its subsidiary institutions to shareholders, and requiring financial holding companies or mixed financial holding companies to divest or reduce holdings in institutions or other entities in the financial sector.

The provision in question has its specificity linked to the fact that, although the financial holding company or mixed financial holding company is characterised by the fact that it has a (direct or indirect) participation in the capital of an entity, the implications of the measures provided for by the legislation do not relate to the effects on the sound and prudent management of the entity in which it has a (direct or indirect) participation, but rather and primarily to interests linked to the role played by the entities in question in the exercise of adequate supervision on a consolidated basis.

With all the limitations linked to the specificity of the case in question, we may underline that the provision of Article 21a of the CRD, limited to the provision of the measure represented by the suspension of voting rights (while not thinning out all the interpretative issues that may arise) proposes an element of clarification on a critical point, relating to the application of the suspension in the case of indirect

[36] This also includes the issuance of injunctions or sanctions against the financial holding company, mixed financial holding company or members of the management body and executives, the temporary designation of another financial holding company, mixed financial holding company or group entity as responsible for compliance with the requirements of CRD and the CRR on a consolidated basis, or - again - the restriction or prohibition of distributions or interest payments to shareholders.

participation. Indeed, the provision under review explicitly states that the suspension applies to exercising voting rights attached to *shares in subsidiaries* held by financial holding companies or mixed financial holding companies. Thus, while some doubts remain as to the application of the provision in the case of indirect shareholdings since the term "*held*" could be understood as being limited to direct shareholdings, the essential point is that, even if the provision were to be interpreted as applying also to indirect shareholdings, the conclusion would be that the exercise of the voting rights affected by the suspension would be that of the shares of the subsidiary institutions.

The difficulty in applying the measure of suspension of voting rights in indirect shareholdings is also shown in the domestic debate.

A relevant example can be found in the Italian legal system.

During the consultation on the new administrative discipline on the ownership structure of banks and other intermediaries (the "Bank of Italy 2022 Regulation"), some respondents requested clarification that the measure of suspension of voting rights is applicable only in the case of direct participation in the supervised entity, while it is not applicable in the case of indirect participation. The Bank of Italy replied that: (i) Italian law provides for the suspension of voting rights in the event of breach of authorisation requirements (i.e. absence or revocation of authorisation) in respect of any qualifying holding, without distinguishing between direct and indirect holdings; (ii) the suspension of voting rights is an automatic consequence of recourse to the legal requirements; (iii) the authority is not entitled to regulate the scope of its application in its secondary regulation, nor is it called upon to intervene by administrative means to produce the effect of suspension. However, the Bank of Italy stated that "sharing the need for greater clarity expressed by the respondents, and bearing in mind that there is no guidance from the case law, it will be possible to carry out further reflections on this aspect and properly evaluate the results (e.g., to identify hypotheses for

possible legislative changes)".

To conclude, it remains the absolute complexity of finding a balance in the modalities of application of the suspension of voting rights in the case of indirect shareholdings. From this point of view, the provision of Article 26 of the CRD, which lists in non-specific terms the possible reactive measures in the face of detrimental influence, may also be considered an appropriate instrument at the disposal of the Member States (and the competent authorities) to have recourse to alternative measures to the suspension of voting rights in such cases.

A further applicability issue concerns the hypothesis that the participant whose suitability is considered inadequate is the holder of several qualified participations. In this case, the problematic question arises as to the relevance of situations in which the negative assessment relates to objective situations concerning the position of the participant, which are therefore detached from the specific interaction with the participated credit institution (and therefore the relevance in terms of the sound and prudent management of the latter derives solely and exclusively from the fact that the participant holds a participation exceeding the relevance threshold provided for qualifying participations). In such situations, in the absence of operational coordination tools between the different competent authorities (assuming that the investee institutions are located in different jurisdictions, e.g. inside and outside the SSM), a situation could arise where the same fact could be considered as giving rise to the suspension of voting rights or not.

As can be seen, the European rules on the suspension of voting rights have some shortcomings in their overall structure.

Nevertheless, the EBA report on the peer review of the ESAS Joint Guidelines on the prudential assessment of the acquisition of qualifying holdings (JC/GL/2016/1 August 2021 EBA/REP/2021/24) the issue of the scope and harmonisation of the rules on the suspension of voting rights was not a specific

object of analysis. There may be elements in the overall regulation of the phenomenon of ownership structures that require a more urgent response (e.g. the application methods of the criteria for granting authorisation or, again, the unresolved issues relating to acting in concert) and that, more generally, attention should be placed on identifying and assessing the relevant cases.

However, it remains the case that the post-assessment phase and the ongoing monitoring of the appropriate ownership structure of the institution represent an area of intervention that is gradually gaining importance and relevance both in terms of methodology and the concrete regulatory instruments that can be used. Moreover, particularly in the context of the SSM, the specific value of interventions in this area as purely prudential supervisory instruments rather than as elements functionally linked to the discipline of assessing potential purchasers marks a difference with significant implications in terms of application competencies and, therefore a clarification on this point is also essential in order to avoid possible conflicts of attribution between the various authorities potentially involved in this matter.

For these very reasons, and to reconstruct the nature and function of the suspension of voting rights in the context of the regulation of ownership structures and, more generally, of the instruments of prudential supervision, it seems appropriate to advance a few considerations.

The rationale of the measure of suspension of voting rights is to intercept the primary expression of the intervention of the participant in the capital of a bank in the life of the company by depriving him of the possibility of voting (for the fraction of shareholding in respect of which the measure of suspension is applied) on the decisions which under the rules applicable to the entity whose corporate structure is at issue, are the responsibility of the general meeting. Thus, the concrete application of the measure of suspension modifies, to pursue the interest of the sound and prudent management of the company, the rules according to

which the shareholders participate in the determination of the corporate governance. In any case, from the point of view of the company, the suspension of voting rights represents an element of alteration in the proper functioning of the company's bodies since - temporally but structurally - not all of the corporate structure will determine the decisions of the general meeting. It is, therefore, desirable that the suspension of voting rights should be limited in time so that the rules of the physiological functioning of the corporate body can be restored within a reasonable time.

On a different note, the suspension of voting rights is a measure that removes the main instrument of intervention in the life of the company. However, it does not appear to be an instrument capable of eliminating the ability of a participant to influence the life of the company, something that could well be achieved by other modalities than the exercise of voting rights. The fact that the regulation of ownership structures takes into account not only the share of voting rights that the potential acquirer can exercise, but also the share of capital, is evident. It follows that the ability to influence the sound and prudent management of the company derives not only from the possession of a fraction of the voting rights that can be exercised at the shareholders' meeting but also from the mere possession of a fraction of the share capital. If we consider the company an enterprise in which several investors participate, it is the capital contribution as such that marks the central moment that testifies to the presence and the degree of influence of an investor in the life of the company.

Given the above, i.e. (i) on the one hand, the suitability of the suspension of voting rights to change the physiological governance of the company and (ii) on the other hand, the unsuitability of the measure, in concrete terms, to sterilise *in toto* any influence that the participant may have over the company, the sectoral authorities should consider very carefully the use of the measure. Moreover, the mere indication in the CRD that the suspension of voting rights is one of the possible

measures that the sectoral authorities can adopt when they intend to counteract one of the situations covered by Article 26 shows that, for the EU legislator, there is a hypothetical equivalence between a financial sanction and a measure excluding the exercise of voting rights.

More concretely, this could lead to the conviction that the measure of disqualification from voting should be the *ultima ratio* to be resorted to when the other measures provided for in Article 26 are inappropriate or considered insufficient to restore the company's sound management conditions.

It is now necessary to consider the possible link between the suspension of voting rights and the suspension or withdrawal of the QH assessment. Indeed, the suspension or withdrawal of the QH assessment (where provided for by the various national laws) leads to the suspension of voting rights. What we are discussing here, however, is the opposite scenario, i.e. whether a prior suspension (or revocation) of the QH assessment is necessary to have access to the measure of suspension of voting rights.

This question does not so much concern with the interpretation of Article 26 of the CRD (since, as already indicated, this provision is sufficiently general in its wording that it does not in itself impose the need for a prior suspension or revocation of the QH assessment), but rather the systematic framing of the authorities' powers of intervention in the field of ownership structures, and it is particularly relevant from the perspective of cases of greater harmonisation of the European regulation in this area. In this respect, the suspension of voting rights should be seen as an integral part of the function of controlling the ownership structure of banks. The supervisory authorities shall not oppose acquisition proposals to the extent that the acquisition proposal, assessed based on the criteria set out in Article 23 of the CRD, is compatible with ensuring the sound and prudent management of the institution to which the proposal relates. This assessment shall consider the likely influence the potential acquirer can exercise over the credit

institution. The achievement of the QH assessment is linked to the free exercise of voting rights in proportion to the acquired shareholding. Conceptually, the prior review of the acquisition of qualifying holdings implies monitoring the development of the relationship between the participant and the investee institution, of which the hypotheses envisaged in Article 26 CRD and the measures regulated therein are a natural development. Injunctions and sanctions reflect the authorities' assessment of the lesser importance of the obstacle to the sound and prudent management of the institution caused by the participant's influence. If, on the other hand, this influence (or obstacle) takes on more significant proportions, to the extent that the authority envisages adopting the measure of suspending voting rights, this outcome cannot be dissociated from a reassessment of the QH assessment itself (to the initial attainment of which, as mentioned above, the free exercise of voting rights is anchored). When applied to the SSM's operational logic, the conclusion links the prerogatives and competencies underlying the *common procedures* throughout the ownership control management phase.

6. As warned, the circumstance that, at the level of European regulation, the subject of the suspension of voting rights of qualified participants is not particularly structured, opens the way to the possibility of a fragmentation of the disciplinary regimes introduced in the regulatory systems of the various Member States.

A very high-level observation of the relevant disciplines in some European jurisdictions, aimed at identifying the main aspects related to the internal implementation of Articles 26 and 66 of the CRD, including the modalities for exercising the power to suspend voting rights, confirms such an impression.

We may summarise as follows the outcome of our observation.

An express power to suspend and revoke QH authorisation exists in some but not in all jurisdictions. Where such a power exists, the consequence would be the suspension and loss of the shareholder's voting rights.

Only in limited cases, a link exists between the suspension of the shareholder's voting rights and the suspension/revocation of the QH authorisation. In addition, the power to suspend the voting rights of a qualifying shareholder, which, as mentioned above, is not necessarily recognised as subordinate to the suspension or revocation of the QH assessment, is variously shaped. In fact, in some cases, it is a power exercised by administrative action by the competent authority, in others by appeal to the court, or in still others, by direct legal effect.

We may further observe that in the EU Member States participating in the SSM, the competence of the authorities to exercise the power to suspend voting rights is shared between the national authorities and the ECB, following the classification between significant – less significant, although this competence is not always formalised in the national regulation.

Again, having regard to the reasons for the suspension of a shareholder's voting rights, the link to the detriment of the sound and prudent management of the credit institution prevails (while in some cases, the *actual* or *potential* relevance of this detriment is debated) but also the (subsequent) loss *per se* of the shareholder's subjective requirements (e.g. fit and proper, etc.) is considered. In relation to the duration of the suspension of the shareholder's voting rights, we can observe that some EU Member States provide for a maximum period of suspension (e.g. up to 3 years).

A mention should be made to the possibility, provided for in some jurisdictions, to allow for an application to the court to appoint a trustee to exercise a shareholder's voting rights.

Considering this in general terms, let us now look more closely at the Italian national regime (the Italian case).

As mentioned above, Article 19.5 of the Italian Consolidated Banking Law provides that the authorisation to acquire shareholdings may be suspended or revoked if the conditions and requirements for its granting are no longer fulfilled or

have changed.

Article 24 of the Consolidated Banking Law provides that (i) the voting rights and other rights conferring influence on the credit institution conferred by the shareholdings for which authorisations have not been obtained or have been suspended or revoked or for which the required communications have been omitted may not be exercised; (ii) the shareholdings for which authorisations have not been obtained or have been revoked must be disposed of within the term established by the Bank of Italy.

Article 25 of the Consolidated Banking Law - which contains provisions on the fit and proper requirements and criteria for shareholders of credit institutions, including concerning ongoing supervision - provides that, in the event that the fit and proper requirements and criteria are not met, shareholders of credit institutions may not exercise voting and other rights that allow them to influence the credit institution.

As far as shareholders are concerned, Article 20, paragraph 2-bis, of the Consolidated Banking Law, requires them to notify the Bank of Italy of any act or fact that may result in modifying the conditions and requirements based on which the authorisation was granted.

Within this general legal framework, the suspension of voting rights operates *ex lege*.

The Bank of Italy 2022 Regulation[37] provides that: (i) the suspension of the authorisation to acquire qualifying holdings shall be ordered by the competent authority if one or more of the requirements or conditions under which the authorisation was granted are no longer fulfilled, and the party concerned is in a position to fulfil them again in a short period; (ii) the revocation of the authorisation shall be ordered if the fulfilment of the requirements or conditions based on which

[37] See Bank of Italy, *Disposizioni in materia di assetti proprietari di banche e altri intermediari*, July 2023.

the authorisation was granted is not possible or feasible within a short period (grounds for revocation shall include, among other things: repeated conduct aimed at circumventing the regulations; breach of any undertaking given in connection with the granting of the authorisation; and disclosure of untrue information).

In addition, the Bank of Italy has ruled that, in the case of concerted action, if only one of the participants in the concerted action fails to comply with the requirements or condition under which the authorisation was granted, the suspension or revocation measure shall also apply to all other participants, unless the concerted action fails.

The Italian regulations indicate that the competent authority for less significant credit institutions is the Bank of Italy "unless otherwise determined by the European Central Bank."[38]. For significant credit institutions, the competence lies within the ECB. A supervisory procedure of up to 120 calendar days is to be initiated, which may lead the authority to take a measure to suspend and/or revoke the authorisation to acquire qualifying holdings. As mentioned above, the authority will have the discretion to decide whether or not to suspend or revoke the authorisation to acquire qualifying holdings based on its assessment of the shareholder's ability to resume its requirements for the holding in the credit institution in a short period.

7. The analysis carried out so far has shown, firstly, the absence of a specific discipline on the relevant issue of the suspension of voting rights by a qualified participant, also concerning the profile of more significant impact in terms of the overall construction, linked to the fact that a suspension or revocation of the QH assessment must (always) precedes the suspension of voting rights. Secondly, there is a situation of high fragmentation at the level of national regulation of the issues

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[38] See Bank of Italy, *Elenco 1a. Elenco dei procedimenti relativi alle funzioni di vigilanza bancaria e finanziaria*, March 2023, p. 26.

at stake, with even very different jurisdictional choices in terms of the forms and measures of intervention granted to the sectoral authorities.

This situation of disciplinary fragmentation presents elements of further complexity if one focuses only on the jurisdictions falling within the scope of the SSM. In this case, on the one hand, the absence of an explicit provision stating that the suspension of the right to vote is subject to the prior suspension and revocation of the QH assessment makes it complex to bring such interventions under the general discipline of common procedures. On the other hand, if the phenomenon is framed in the more general logic of the prudential supervisory instruments, it determines a relevant fragmentation of the type of application, taking into account the well-known division of competencies between the ECB and the NCAs, based on the significance of the institutions.

Hence, there is a need to assess the appropriateness of a regulatory intervention that could reduce or even eliminate the current jagged disciplinary framework. Two policy options can be compared: (a) maintain the current regulatory environment and (b) provide for further harmonisation.

The second option has, at least, the following further possible ramifications: (i) inclusion of detailed provisions at the legislative level (i.e., CRD); (ii) inclusion of specific provisions in the ESAs joint guidelines; (iii) inclusion of specific provisions in the ECB guide on the assessment of QH.

The analysis, having regard to the economy of this paper, is based exclusively on a qualitative assessment, in particular on the assumption that (A) in the case of legislative provisions, each Member State fully implements the rules in the national regulation; (B) in the case of guidelines, each Member State can implement the relevant provisions at a national level.

In this way, the analytical framework is set up to analyse the pros and cons (where relevant) in terms of (*i*) readiness for the adoption of the new regime, (*ii*) creation of a new, genuinely harmonised supervisory regime, (*iii*) costs and benefits

for competent authorities, credit institutions, and qualifying shareholders.

The first of the options considered to maintain the current regulatory regime clearly reflects the inefficiencies and significant regulatory fragmentation identified in the preceding pages. It does not consider the time and cost of adaptation, as the current *status quo* would be maintained. The uncertainty in the enforcement associated with a regime that is essentially based on domestically defined regulatory solutions would continue to generate costs and operational complexities, particularly for the competent authorities of SSM countries in defining the enforcement competence of the disciplinary regimes under consideration, especially concerning less significant entities. Similarly, the fragmentation of national regimes leads to additional compliance costs for investors, especially if they are professionals investing in entities established in different jurisdictions. On the contrary, the impact of a solution that maintains the current status for entities (if they are not themselves participants in other entities, and thus for target entities) appears to be neutral since - beyond the profile of the competent authority for the adoption of measures to protect a sound ownership structure - they would continue to be recipients of the domestic regime applied to their shareholders. In fact, the possible impact on the competitiveness of the markets for the exercise of reserved activities resulting from the differences in the regimes for combating the detrimental influence of qualified shareholders is not particularly significant.

With regards to the second policy option, which consists of defining a regime of greater harmonisation of the rules on the suspension of voting rights of qualified shareholders, the prevalence of the different hypotheses considered is measured entirely in terms of overcoming the inconsistencies and disciplinary asymmetries of the current regime, as indicated above. The preference for a more harmonised regime compared to the current one is also a consequence of the underlying idea of the usefulness of more or less integration of national banking systems, both within and outside the SSM. A more harmonised regime would reduce the domestic

discretion that today allows each national regime to be tailored to the specific situation based on disciplinary options that are also the result of the sensitivity of the approach to the balance between different instances at the crossroads between the protection of sectoral interests and the general ones of safeguarding the prerogatives of the dominical rights connected to participatory ownership (think of the fundamental differences that underlie regimes that provide for measures of an administrative nature compared to those that require the intervention of the judicial authority).

Bearing in mind this vital profile, it must be pointed out first of all that the request for greater harmonisation may, in terms of content, be declined in greater or lesser detail and may concern, for example, the specific cases in which the suspension of voting rights is mandatory or not; the determination of whether a prior suspension or revocation of the QH assessment is necessary or not; the precise regulation of the procedure leading to the adoption of the suspension measure, etc. Each of these possible calibrations of harmonisation may give rise to specific considerations in terms of impact assessment; this is not the place for such a detailed analysis.

Staying at a higher level of analysis, the ramifications articulating the disciplinary option of greater harmonisation consist, on the contrary, in the different dislocations of the provisions to be adopted, as already mentioned. It is evident that the inclusion of detailed provisions in the CRD entails an indeed not short timeframe for implementation but results in a greater level of disciplinary rigidity (and compulsoriness), which is also a consequence of the level of detail of the provisions to be adopted. Reversed considerations follow the hypothesis of including specific provisions in the ESAs Joint Guidelines. In contrast, the hypothesis of introducing ad hoc provisions in the ECB guide on the assessment of QH suffers – in addition to the not mandatory nature of the same – from the obvious limitation of the scope of application, which refers only to the SSM system. At the level of

concreteness, a regulatory intervention that starts with the Joint Guidelines and then, for those profiles that cannot be implemented at the sub-legal level, is integrated at the level of a directive is a satisfactory solution.

8. The European rules on the suspension of voting rights of holders of qualifying holdings in banks are extremely meagre and do not address the preliminary and relevant aspect of the link between the suspension of voting rights and the suspension and/or withdrawal of the QH assessment.

The interests protected at the European level by the ownership structure regulation led to the conclusion that the suspension of voting rights is a measure resulting from the prior assessment of the retention of ownership of a stake in a bank's capital.

Given the current disciplinary framework, the regulatory solutions provided by the various national jurisdictions vary widely because of what also follows on the more general issue of creating a common regulatory framework in the context of the European banking market. The implications in the context of SSM are obvious, if only for the purpose of bringing such a matter back into the context of common procedures or not. The need for greater harmonisation is already evident in the possibility of overcoming the inefficiencies created by the current fragmented disciplinary environment.

Different policy options and ramifications may be followed; the most appropriate form of intervention may be the integration of the CRD provisions. Given the longer timeframe such an intervention entails, the possibility of intervening for the permitted profiles by supplementing the ESA's Joint Guidelines is an appropriate and proportionate solution.

MICAR AND CRISIS MANAGEMENT RESOLUTION (BRRD)

Diego Rossano [*]

ABSTRACT: *This paper has aim to analyze a topic that is largely unexplored, involving the coordination of the MiCA regulation with the EU regulatory framework in the context of Bank Recovery and Resolution. We are faced with a regulatory framework that requires coordination with the existing regulations on bank crisis management; a not easy coordination that - I consider - will have to be promptly carried out by the sector authorities.*

SUMMARY: 1. Introduction. - 2. MiCAR vs BRRD … - 3. … In the context of implementing resolution measures for a credit institution issuing crypto-assets. – 4. Conclusions.

1. The connection between financial system stability and technological development is a prominent topic, not only in terms of operational risks[1]. As highlighted in technical discussions, (in 2022) the European Central Bank stated that cryptocurrencies are not widely used in traditional banking operations[2]. The Bank of Italy's survey on FinTech in the Italian financial system (in 2021) found that no intermediaries have crypto-assets on their financial statements, either as direct exposures, underlying derivatives, or investment assets in mutual funds[3]. Only a few intermediaries provide their clients services related to crypto-assets. These services

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[*]Full professor in Economic Law at the "Parthenope" University of Naples.
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[1]L. DONATO, *Cripto-asset e banche. Rischi per la stabilità finanziaria e regolamentazione*, in *Bancaria,* 5, 2023, p. 52 ff.

[2]ECB, *Study on the payment attitudes of consumers in the euro area (Space)*, 2022.

[3]BANK OF ITALY, *Indagine Fintech nel sistema finanziario italiano*, 2021.

are offered by these intermediaries through commercial partnerships with third-party operators who provide wallets for custody, trading, and utilization. The Silicon Valley Bank's liquidity crisis has exposed new risks to market stability associated with the financial aspects of technological innovation[4].

The MiCA Regulation has the potential to bring about change, contingent upon effectively mitigating the risks of financial instability associated with technological innovation. It is crucial to precisely define the scope of MiCAR from the outset. The regulation is structured around separating financial crypto-assets and non-financial crypto-assets, with exclusive coverage for the latter. "Common" market law continues to apply to the former[5]. It won't be easy to distinguish between the two in practice, which will make it challenging to coordinate with existing financial regulations. In particular, I find questionable to delegate to credit institutions issuing asset-referenced token through a "legal opinion" the determination of whether a product introduced to the market should or should not be subject to MiCAR (art. 17, paragraph 1, letter b). In my view, this possibility indicates the inherent fragility of the regulatory framework in this matter.

The program mandates my focus on a topic that is largely unexplored, involving the coordination of the discipline under investigation with the EU regulatory framework in the context of Bank Recovery and Resolution. Specifically, this pertains to Directive 2014/59/EU and Regulation 806/2014, as subsequently amended in 2019. It is important to point out that the principles that guide the latter are the same as the ones that underlie MiCAR. MiCAR aims to ensure legal certainty, adequate support for innovation and fair competition, as well as investor protection and market integrity. Recital No. 45 of the Bank Recovery and Resolution Directive (BRRD) states that the

[4] L. DONATO, *Cripto-asset e banche. Rischi per la stabilità finanziaria e regolamentazione*, cit., p. 59.
[5] M. CIAN, *La nozione di criptoattività nella prospettiva del MiCAR. Dallo strumento finanziario al token, e ritorno,* in *Osservatorio del diritto civile e commerciale*, 2022, p. 59 ff.

crisis management framework also aims to avoid adverse effects on financial stability. It seeks to protect public funds by minimizing reliance on extraordinary public financial support and safeguarding the interests of investors. Despite the shared objectives and the significance of the issue we are discussing today, the Bank Recovery and Resolution Directive (BRRD) and, especially, its successor BRRD 2 (Directive 2019/879/EU) have not adequately addressed the crypto-assets and their interaction with the regulations concerning banking crises.

2. The legislator's focused attention on preventing pathological situations is a shared aspect in both MiCAR and BRRD disciplines. MiCAR, in particular, outlines specific organizational and capital requirements that issuers and service providers are obligated to meet. For example, according to recital 45, «asset-referenced tokens … could … be widely adopted by users to transfer value or as a means of payments and thus pose increased risks in terms of consumer protection and market integrity compared to other crypto-assets. Issuers of asset-referenced tokens should therefore be subject to more stringent requirements than issuers of other crypto-assets». In the event that the issuer of asset-referenced tokens is a credit institution, the latter «should not need another authorization … In those cases, such credit institutions are only required to notify their respective competent authorities of their intention to issue an asset-linked token at least three months before the planned issuance date. The issuer of such asset-referenced tokens should be still required to produce a crypto-asset white paper to inform buyers about the characteristics and risks of such asset-referenced tokens and to notify it to the relevant competent authority, before publication». So, credit institutions are subject to fewer strict restrictions under MiCAR regulations than other potential issuers. This is because banks are already governed by specific regulations that are highly focused on preventing unstable situations. As

known, BRRD dedicates a significant portion of its provisions to preventing phenomena of failure and, more generally, systemic damage, granting public authorities extensive intervention powers.

Furthermore, specific measures are included in the legislation on bank crisis management to counteract mismanagement by credit institution administrators. The same logic of protecting the interests of third parties is reflected in the provision contained in MiCAR, according to which «issuers of asset-referenced tokens should have robust governance arrangements, including a clear organisational structure with well-defined, transparent and consistent lines of responsibility and effective processes to identify, manage, monitor and report the risks to which they are or might be exposed. The management body of such issuers and their shareholders should have good repute and sufficient expertise and be fit and proper for the purpose of anti-money laundering and combatting the financing of terrorism» (recital n. 34).

Therefore, administrators of banks issuing electronic money or Art are expected to possess specific and relevant skills in addition to the ones currently required. Consequently, if a credit institution shows initial signs of crisis due to bad management by administrators, according to the BRRD, it could be subject to an early intervention measure. At the first signs of crisis, the banking supervisory authority can take these measures, which will greatly affect the rights of shareholders and the organizational structure of the banking institution. These measures are invoked in response to infringement (or a risk of non-compliance) of prudential requirements by banking institution, leading to the implementation of arrangements set out in recovery plans. The Supervisory Authority can request (to the management body of the banking institution) to "examine the situation" (in order to draw up an action programme) and "convene a meeting of shareholders", pursuant art. 27, letters a, b and c of the BRRD). Naturally, the Supervisory Authority also holds the power to alternatively require

changes to the institution’s business strategy and, most importantly, to remove or replaced one or more members of the management body (commonly referred to as the power of removal). According to the Article 28 of the BRRD, these meausures can also be applied in case of serious infringements of law or of regulations. This could potentially apply even if the provisions outlined in MiCAR regarding organizational structures are violated once they come into effect.

On this point, it should be noted that the proposed amendment to the regulatory framework on bank crises, know as CMDI proposal, involves eliminating the internal sequence of early intervention measures, removing administrators and appointing a temporary administrator. Under the CMDI proposal, these measures are all subject to the same trigger factors. However, competent authorities are mandated to adhere to the principle of proportionality when selecting the most suitable measure for each situation. This innovation appears fitting and effective in addressing critical situations in banks stemming from the mishandling of crypto-assets by the relevant entity, necessitating tailored measures for resolving each specific case.

3. In the context of implementing resolution measures for a credit institution issuing crypto-assets, it is crucial to note the following: the regulatory framework for both financial and non-financial crypto-assets does not clearly specify whether they constitute legal assets or represent a creditor's right in favor of the investor. Clarity on this matter can be found in MiFID II (Article 16, paragraphs 8 and 9) but not in MiCAR. These regulations, as adopted in Italy, govern the separation of financial instruments and client money, both among themselves and in relation to those of intermediaries. These rules prevent the concurrence of the intermediary's creditors or those of any potential depositary or sub-depositary, recognizing ownership of the financial instrument based on the intermediary's account records. Restitutions are subject to

the provisions outlined in Article 91, paragraphs 2 and 3, of the Italian Banking Act.

Certainly, the precise identification of the legal nature of crypto-assets also impacts the regulations to be applied to them. Pertinent to this, significant insights come from New Zealand case law (April 2020) which, specifically addressing the possibility of endowing cryptocurrencies in a trust, clarified how these (para. 120) are «*a type of intangible property as a result of the combination of... certain... interdependent characteristics*». In contrast, the Tokyo District Court (in 2015) had ruled that bitcoins could not be considered piece of property.

That being said, MiCAR does not expressly clarify whether tokens are to be considered an object of rights or give rise to a claim in favour of the investor. Specific indications can be taken from the provisions on payment tokens and hence with reference to asset-referenced tokens and e-money tokens.

With respect to asset-referenced tokens, the issuers of such tokens, and consequently also the credit institutions, should set up (see recital 37(thirty-seven)) and maintain at all times a reserve of assets as security for such crypto-assets. This reserve of assets represents a guarantee against the liability of the issuer represented by the asset-linked token. According to Section 35(1a) (thirty-five, paragraph one a), any asset-referenced token that does not offer a permanent right of refund to all holders is precluded. It follows that those who purchase ARTs should have a direct claim against the issuer.

With reference to e-money tokens, MiCAR clarifies (see recital 10, ten) that issuers of such e-money tokens should ... should grant the users of such tokens with a claim to redeem their tokens at any moment and at par value against the currency referencing those tokens. It follows that the purchaser of e-money tokens also has a claim against the issuer.

4. That being said, it is necessary at this point to verify whether and which parties, purchasers of tokens, may be involved in the banking crisis management procedures that, as is well known, involve in various ways the DGS, according to Directive 2014/49/EU (twenty-forteen number fourty-nine), and the resolution authorities, which, according to the BRRD, may adopt specific resolution tools, including the bail-in.

Now, Article 11 of the DGS Directive clarifies the terms of use of the aforementioned guarantee schemes and reaffirms their primary function of ensuring the repayment of depositors of insolvent banks. It also considers certain additional forms of intervention that, in various ways, interact with banking crisis and state aid provisions. The DGS Directive expressly states that the guarantee scheme provides "*for alternative measures in order to prevent the failure of a credit institution*" (Art. 11(2), eleven paragraph two). It follows that this guarantee scheme can be used in the early intervention phase; since the latter is aimed at overcoming situations of difficulty of the bank that are not yet considered to justify the initiation of resolution procedures.

It is well known that e-money may not be treated as a deposit, with all the implications in terms of the regulations applicable to it. Among other things, Article 2(2) (two paragraph two) of the MiCAR clarifies that the regulation does not apply to cryptocurrencies that are covered by the definition of deposits under Article 2 paragraphs one and three of Directive 2014/49/EU. It will, however, be necessary to examine in the future the implications of the recently proposed amendment in the EU in the area of DGS. In particular, recital 13 of that proposal specifies that '*Financial institutions are excluded from deposit protection. However, certain financial institutions, including e-money institutions ... deposit the funds received from their clients in bank accounts, often on a temporary basis, to comply with safeguarding obligations in line with sectorial legislation ... . Considering the growing role of such*

financial institutions, DMSs should safeguard such deposits provided that these customers are identified or identifiable'.

In addition, the implications of another recent amendment in the CMDI proposal will have to be evaluated in the future. According to this proposal, the coverage level of EUR 100,000 (one hundred thousand) per depositor and bank, as stated in the DGS Directive, is confirmed for all eligible depositors in the EU and will be extended to public entities such as hospitals, schools and municipalities, as well as to e-money institutions deposited by customers.

In my opinion, the aforementioned provisions, if approved, should also be apply to e-money tokens and their issuers due to the principle of technological neutrality; a principle which, however, sometimes appears to be disregarded precisely because, as recital 49 (fourty-nine) of MiCAR makes clear, Issuers of such significant e-money tokens should therefore be subject to additional requirements. Issuers of e-money tokens should in particular be subject to higher capital requirements than other e-money token issuers, to interoperability requirements and they should establish a liquidity management policy, notwithstanding the respect of custody requirements for the reserve assets, investment rules for the reserve assets and the obligation to establish an orderly wind-down plan. As a result, we can say that e-money tokens can be covered by the rules on e-money as well as the stricter rules on crypto-assets with the aim of protecting consumers and market integrity; this, however, in spite of the principle of technological neutrality. That said, at the present time, it should be concluded on this point by clarifying that cryptoasset depositors do not have the same protection as bank deposit systems. Remedial intervention may have to be considered in the future[6].

[6] In the same terms, I. KOKORIN, *The anatomy of crypto failures and investor protection under MiCAR*, Hazelhoff Research Paper Series No. 15, Leiden Law School, 2023.

With specific regard to asset-referenced tokens, as mentioned above, issuers, and thus also credit institutions, should establish (see recital 37) and maintain at all times a reserve of assets as security for such crypto-assets. This asset reserve constitutes a guarantee against the issuer's liability represented by the asset-linked token. As is well known, the European framework requires credit institutions to hold a minimum amount of liabilities subject to bail-in (Mrel); an amount in which, inter alia, secured liabilities (including covered bonds) are not to be included.

How will asset-referenced tokens be considered? Eligible or not eligible for MREL? Eligible or not eligible for Bail-in? Can the guarantee to be provided by the issuer allow them to be counted as a secured liability? Could we evaluate these crypto-assets in the same way as covered bonds? Once again, the primary and secondary sector regulations offer no particular support to the interpreter.

The reference contained in the MiCAR recital 65 (sixty-five) is generic as it sheds light on "*Where the issuer of asset-referenced tokens is a credit institution or an entity falling within the scope of Directive 2014/59/EU, the competent authority should consult the responsible resolution authority. That resolution authority should be permitted to examine the redemption plan with a view to identifying any elements in it that might adversely affect the resolvability of the issuer, the resolution strategy of the issuer, or any actions foreseen in the resolution plan of the issuer*". This is a generic forecast confirming the impact that tokens may have on financial stability.

In matters of banking, then, the public authority retains such powers as to significantly affect the decision-making autonomy of the institution. In fact, the resolution authority should also be permitted to consider whether any changes are required to the resolution plan or the resolution strategy.

This latter eventuality certainly has an impact on the strategic policies adopted by the institution in the ordinary course of its banking activity, and thus on its private

autonomy. On the other hand, such powers, assigned to a public authority, are functional in preventing crises of a systemic nature. Not by chance, the doctrine (Kokkorin) hoped that, in the future, such resolution procedures and deposit guarantee systems provided for in the banking sector will also be applied in the other sectors in which crypto-asset issuers work. In fact, the different treatment in these instances between a crypto-asset issuer not under BRRD and a bank covered by BRRD, which enjoys a well-tested crisis management discipline able to protect the financial stability of the system and, at the same time, the needs of investors, is evident.

In conclusion, we are faced with a regulatory framework that requires coordination with the existing regulations on bank crisis management; a not easy coordination that - I consider - will have to be promptly carried out by the sector authorities. I conclude on this point by recalling a phrase by Oscar Wilde: "*Discontent is the first step in the progress of a man …*".

PREDICTIVE ANALYTICS AND ARTIFICIAL INTELLIGENCE IN INSURANCE CONTRACTS AND RISK CULTURE

Sara Landini * – Emilia Giusti ** – Teresa Franquet Sugrañes ***

ABSTRACT: *Predictive analytics can use statistical techniques to predict future events through data mining, predictive modelling, machine learning, etc. Thus, predictive analytics is having an impact in legal matters too and especially in risk distribution in contract law. What are the limits of predictive analytics in this field? The paper considers InsurTech as an example of predictive analytics applied to legal matters.*

SUMMARY: 1 Introduction. - 2. Predictive analytics in short. - 3. Application of predictive analytics to legal issues: managing risk. Certus ex incertis. 3.1. Data Analytics, Big Data, AI and information asymmetry 4. Predictive analytics and InsurTech. 4.1. Impact on production. Examples in the motor insurance and agricultural insurance sectors. 4.2. Impact on distribution. 4.3 Data Sharing and Open Insurance. 5. Conclusions.

1.Risk can be defined as the danger of an unplanned occurrence.[7] It finds its

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*Full professor of Economic Law at the university of Florence

** Research Fellow at the University of Florence (she worked particularly on paras. 3).

***Full professor of Derecho Mercantil, Universitat Rovira i Virgili.

The paper is an output of the projects “Sostenibilidad, digitalización e innovación: nuevos retos en el derecho del seguro” (PID2020-117169GB-I00); “Insurance Solutions to enhance crop production resilience to extreme climatic events by means of blockchain and IOT technologies” - Next Generation EU.

*Sara Landini is a full professor of Economic Law at the university of Florence, Emilia Giusti is a Research Fellow at the University of Florence (she worked particularly on paras. 3) Teresa Franquet Sugrañes is a full professor of Derecho Mercantil, Universitat Rovira i Virgili.

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[7] M. Henssler, *Risiko als Vertragsgegenstand*, Mohr Siebeck Verlag, Tübingen 1991.

causes in human failure, but more often in natural causes and, generally speaking, in the inevitable uncertainty of the future.

Over time, some dangers recede, but in the meantime, others arise and risk prevention becomes the guiding principle. Since around 1990, legal scholars have also stressed this point. In his book *Risiko als Vertragsgegenstand*, Martin Henssler analyses the risk distribution concept applied to the interpretation of contracts. One of the most relevant problems addressed in the book is the determination of the legal limits to risk distribution. The assessment of the fairness of the assumption of risk can rely on the criterion of the "equivalence check" according to § 138 BGB (German Civil Code). A look at the development of modern capital and financial markets reveals the importance of an interpretation of civil law provisions (§§ 762-764 BGB), in which it is possible to find a basic regulation of aleatory contracts. What Martin Henssler wrote in 1993 is going to become more and more evident and important in the present time.

As the sociologist Ullrich Beck said in 1986, whilst the problem of class society was the distribution of wealth, the new problem is the distribution of risk, understood as "a systematic way of dealing with the insecurities and risk of losses induced and introduced by modernity itself". The changing nature of society's relation to production and distribution is related to the globalising economy based on scientific and technical knowledge that become more central to social organisation and social conflict.[8]

More recently, in 2007, Zigmut Bauman noted in his book *Liquid Times: Living in an Age of Uncertainty* that the movement from 'solid' to 'liquid' modernity has created new challenges never before encountered. Social forms, norms and institutions have not had enough time to solidify and cannot serve as frames of reference for human actions and long-term life plans, so individuals have to find other

[8] U. Beck, *Risikogesellschaft Auf dem Weg in eine andere Moderne*, Suhrkamp, 1986.

ways to organise their lives through unending series of short-term projects and episodes. This situation requires individuals to be flexible and adaptable, ready and willing to change tactics at short notice, under conditions of endemic uncertainty.[9] Can predictive analytics help? What is the impact on risk distribution in contracts? How can data analytics change the concept of information asymmetry in insurance (the insurer is less informed than the insured about the risk, so the insured has a duty of disclosure) and the concept of insurance itself?

2. Data Analytics permits the analysis of raw data to make conclusions about information obtained. In the last ten years, most of the techniques and processes of data analytics have been automated into mechanical processes and algorithms that work on raw data useful for human beings.

Data analytics is of course fundamental in decision-making generally speaking: marketers utilise customer data, industry trends, and performance data from past campaigns to plan marketing strategies; product managers analyse market, industry, and user data to improve their companies' products, and finance professionals use historical performance data and industry trends to forecast their companies' financial trajectories. HR managers gain insights into employees' opinions, motivations, and behaviours and pair them with industry trend data to make meaningful changes within their organisations. And what about legal professionals? Legal professionals are involved in decision-making processes. As some scholars have said "the business of law is the business of making decisions. Decisions are made at every step of the legal process, though obviously some are weightier, more consequential for the individual, than others"[10]; we must underline that this insight does not concern only judges and

[9] Z. Bauman, *Liquid Modernity*, Cambridge, 2000.
[10] Keith Hawkins, *On Legal Decision-Making*, in *Wash. & Lee L. Rev.*, 43, 1986, p. 1161.

judgments, but all the actors involved: parties to contracts, litigants, lawyers, and notaries, who have to make decisions concerning the legal effects of their actions .

Data analytics techniques are distinguished into several types:

1.Descriptive analytics is the simplest type of analytics. It allows us to derive trends from raw data and describe what happened or is going to happen. Descriptive analytics answers the question "What happened?"

2. Data visualisation consists in communication by means of charts, graphs, and maps to show trends in data in a clear, easily understandable way.

3. Diagnostic analytics helps in finding a causal nexus and answers the question "Why did this happen?"

4. Predictive analytics is used to make predictions about future trends or events and answers the question "What might happen in the future?" It operates by analysing historical data in order to make informed predictions about what the future could hold for a company.

5. Prescriptive analytics answers the question "What should we do next?"

Prescriptive analytics takes into account all possible factors and designs the future scenario while suggesting actionable takeaways. It helps decision-makers to consider all aspects of current and future scenarios and plan actionable strategies. This type of analytics can be especially useful when making data-driven decisions.[11]

These four types of data analysis should be used in tandem to make informed decisions.[12]

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[11] F. Acito, V. Khatri, *Business Analytics: Why Now and What Next?,* in *Business Horizons*, 57 (5), 2014, pp. 565-570; V. Dhar, *Data Science and Prediction*, in *Communications of the ACM*, 56 (12) (2013), pp. 64-73.

[12] H. Chen, R.H.L. Chiang, V.C. Storey, *Business Intelligence and Analytics: From Big Data to Big Impact*, in *MIS Quarterly*, 36 (4), 2012, pp. 1165-1188; A. McAfee, E. Brynjolfsson, *Big Data: The Management Revolution*, in *Harvard Business Review*, 90 (10), 2012, pp. 60-68; Bange, C. and N. Janoschek, *Big Data Analytics 2014 - Towards a Data-Driven Economy*, BARC Institute, Würzburg, May 2014, p. 9 ff.; H. Kościelniak, A. Puto, *Big Data in Decision Making Processes of Enterprises*, in *Procedia Computer Science*, 65, 2015, pp. 1052-1058; M.G. Guillemette, M. Laroche, J. Cadieux,

3. With regard to contract law matters, we have to consider that civil cases which reach formal adjudication in the courtroom are statistically highly exceptional.

Legal decisions are not only solemn adjudications by judges, but are also decisions made mostly by individuals: parties to a negotiation, lawyers, notaries, administrative officials, etc. The decisions made are usually not the product of adjudication, but rather mostly of negotiation.

In contrast with adjudication, negotiation is a means of solving problems and reaching decisions in the absence of an authoritative imposition. It is a flexible system of decision-making relying upon bargaining. Negotiation does not involve an authoritative decision-maker because there is at least some degree of consensus and commitment to the outcome of the decision-making process felt by both parties.

In decision-making by negotiation, individuals find "a solution to an interest conflict that is based on the reciprocal adjustment of needs" and, as Aubert said, negotiation "is ill-suited to the promotion of predictability".[13] In negotiation processes there is not only a flow of information to each decision maker, but also the possibility of a variety of interactional effects between them which need to be addressed.

Some assume that "[t]he law is a problem solving mechanism, but in order to do its work it must compact reality into manageable molds. Hence the law prefers to address the world with the rigors of a system of binary logic. Thus one is in law married or not, unemployed or not; or one does, or does not, have a right or a duty. In reality,

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Defining Decision Making Process Performance: Conceptualization and Validation of an Index, in *Information & Management*, 51 (6), 2014, pp. 618-626.

[13] V. Aubert, *In Search of Law*, WileyBlackwell: Hoboken, 1984 and P. Gulliver, *Case Studies of Law in Non-Western Societies*, in L. Nader (ed.), *Law in culture and society*, 1969, p. 11.

of course, people would often find it difficult to describe their position in such uncompromising categories. Binary logic is particularly evident in the way in which the law provides answers to problems—that is, in the way in which it produces decisions—but it also emerges in the reasoning which allows those decisions to be produced.”.[14] It may be that the process is more complex than a binary logic and that categories, especially in civil law countries, are more “liquid”.[15]

The binary logic is consistent with a conflict-based perspective, while presently most legal problems are settled by bargaining.[16]

Predictive analytics uses machine learning and artificial intelligence as tools to parse data and predict possible outcomes. The most important difference between AI and predictive analytics is that AI can be autonomous and learn on its own. Predictive analytics often relies on human interaction to help query data, identify trends, and test assumptions. This difference is important, but it is not an obstacle to the interaction between predictive analytics and AI, as we are going to see with regard to insurance.

With regard to negotiation and contracts, data analytics, together with AI, is able to reduce the uncertainty that dominates contracts, and this can be observed particularly in one of the types of contracts that see “risk” as an essential element: the insurance contract in the new InsurTech perspective.

Data analytics also impacts on the information flow and the problem of information asymmetry, which usually finds a solution in the concept of informed consent.

Informed consent was introduced into our European civil law systems, especially in the medical area, because of the influence of the Anglo-Saxon world, in

[14] Keith Hawkins, *On Legal Decision-Making*, in *Wash. & Lee L. Rev.* , 43, 1986, p. 1161.
[15] N. Lipari, *Le categorie del diritto civile*, Milan: Giuffré, 2013.
[16] M. Henssler - S. Landini, Introduction, *Lawyers in Italy. Challenge the change*, Martin Henssler, Sara Landini (eds.), *DeutscherAnwaltVerlag*, 2020.

which case studies on this topic began in the 18th century, with a focus solely on the patient's right to give their consent to healthcare action, and then developed conceptually through case-law until arriving in the 20th century at the principle of informed consent, which combines patient autonomy and information.[17]

In the Italian context, by contrast, deep-rooted cultural traditions, moral ideas and religious beliefs prevailed which were not at all conducive to the acceptance of the notion of a patient's autonomy over his or her own health and life; patients' consent was considered included in their request for care.

It was not be until the twentieth century that Italian legal scholars began to analyse the issue more carefully, especially in relation to the compliance with legal requirements in terms of informed consent.

4. The term InsurTech refers to the application of digital technologies to the insurance world. In particular, InsurTech is marked by an innovative use of big data and predictive analytics. The areas of application range from production to distribution to insurance governance itself.

From the production point of view, digital technologies have affected the insurance world due to the new coverage needs mainly tied to data security. Here the real novelty concerns the application of blockchain technology to insurance contracts. An innovative frontier on the production side could be represented by open insurance.

The insurance industry 4.0 includes all the technologies that have led to a digitisation of relationships, thereby facilitating automation processes, thanks also to the use of algorithms, and accelerating the conclusion and fulfilment of contracts.[18]

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[17] V. Millard, *Le origini del consenso informato*, in *Acta otorhinolaryngol Ital*, 25, 2005, p. 320

[18] With regard to contracts, Savelyev, *Contract law 2.0: 'smart' contracts as the beginning of the end of classic contract law*, in Higher School of Economics Research, Paper No. WP BRP 71/LAW/2016; Bertani, Butkute, Canessa, *Smart Flight Insurance InsurETH*, at www.mkvd.s3.amazonaws.com; Huckstep, *What does the future hold for Blockchain and insurance?*, in *Daily Fintech*. September 15, 2016, at www.dailyfintech.com; Gatteschi, Lamberti, Demartini, Pranteda, Santamaria, *Blockchain and Smart Contracts for Insurance: Is the Technology Mature Enough?*, in *Future Internet*,10, 2018, p. 20;

In the insurance sector, digitalisation has allowed the exploitation of data collected from customers together with big data to perform clustering operations capable of profiling customers and improving the adherence of products to their insurance needs.

The use of big data becomes important in the insurance industry. As is well known, the term "big data" indicates an enormously large, complex set of data that can be used to form new knowledge through the relationships between knowable data. This is information that, due to its volume and speed of acquisition, has a heuristic value as it represents the starting point for identifying correlations that may be relevant for future developments.[19]

There are different techniques used:

1- "Data mining" is the process of analysing data from different points of view in order to obtain useful information. It is the process of searching for correlations or patterns between data collected in relational databases.

2- "Data fusion" is the process of integrating multiple data and knowledge. The expectation is that the "merged" data will contain information that is superior to the original data.

3- The "clustering" procedure aims to group data and organise them into groups so that the data contained in the same cluster are more similar to each other than those contained in different "clusters".

4- "Regression analysis" is used to estimate the strength and direction of the relationship between variables that are in a linear relationship to each other.[20]

Chekriy, Mukhin, *Blockchain Platform for Insurance-related Products*, 2018, at www.icosbull.com.

[19] Ashton, *That 'internet of things' thing*, in *RFID journal*, 2009; Atzori, Iera, Morabito*, The internet of things: A survey, Computer networks*, 2010; A.C. Nazzaro, *L'utilizzo dei Big data e i problemi di tutela della persona*, in *Rass. dir. civ*., 2018, p. 1239 ff.

[20] J. Manyika, M. Chui, B. Brown, J. Bughin, R. Dobbs, C. Roxburgh, and A. Byers, *Big data: The next frontier for innovation, competition, and productivity*, The McKinsey Global Institute 2011; A. McAfee and E. Brynjolfsson, *Big Data: The Management Revolution*, in *Harvard Business Review*, 2012, p. 13.

In the overall conclusion to its "Report on Best Practices on Licensing Requirements, Peer-to-Peer Insurance and the Principle of Proportionality in an InsurTech Context" (Luxemburg 2019)[21], EIOPA (European Insurance and Occupational Pensions Authority) stressed that "«InsurTech have an impact across all steps of the value chain in the insurance and pension sectors, including through the emergence of start-ups, often in cooperation agreements with incumbent undertakings. The business models of undertakings and the consumer experience are being transformed as a result of the proliferation of financial innovations and technology. Based on the evidence gathered, the EU InsurTech market is at an early stage, but evolving. Most NCAs [national competent authorities] have limited experience with InsurTech companies, or they do not differentiate those with 'digital' business models from others. However, the ITF's [InsurTech task force's] work on Innovation Facilitation found that 24 NCAs have implemented an innovation facilitator. This implies that most NCAs within the EU are well aware of the importance of innovative technologies and new market players, and the need to understand well risks and benefits."

EIOPA focuses on the importance of regulation, as facilitating innovation is not about de-regulation. A key word in regulation is technological neutrality in legislation. The principle of technology neutrality has been enshrined as one of the key principles of the European regulatory framework for electronic communications, first introduced in 2002 and reinforced in the 2009 telecom package.

According to this regulatory framework, Member States must ensure that national regulatory authorities take utmost account of the desirability of making regulation technologically neutral, that is to say, it should neither impose nor discriminate in favour of the use of a particular type of technology.

[21] See more recently the Eiopa Discussion paper on blockchain and smart contracts in insurance, 2021, at www. Eiopa.europa.eu

Another key aspect is the application of a proportionate approach in the assessment of conformity with the conditions for authorisation (e.g. in terms of expectations regarding governance processes, systems and controls requirements, which take into account the specificities and risks inherent to InsurTech).

For these reasons the use of best practices is important. In its report EIOPA maps out some best practices, namely that: "1. NCAs, taking into account their exact mandate, are encouraged to use available measures to facilitate general consumer awareness (e.g. through publishing circular letters and issuing notices or warnings etc.) on non-supervised P2P insurance platforms, where possible. 2. NCAs could encourage pure P2P insurance platform providers to disclose to consumers clearly and prominently that they are not providing or selling any insurance cover and hence are not under insurance regulation and to clearly disclose to consumers on their lack of access to the usual consumer safeguards such as independent dispute resolution and protection scheme, if applicable. 3. NCAs exchange views on treatment of different P2P business models and national licencing approaches to those business models."

4.1. From the production point of view, digital technologies have impacted the insurance world: firstly, due to the new coverage needs mainly tied to data security.

Secondly, in the realm of production, the real novelty concerns the application of blockchain technology to insurance contracts.[22]

With regard to the first point, an innovative frontier on the production side could be represented by open insurance.

Awareness of cyber risk is growing and with it the search for tools to confront

[22] Zhao, *The analysis of application, key issues and the future development trend of blockchain technology in the insurance industry*, in *American Journal of Industrial and Business Management*, 10(02), 2020, 305–314. About smart contracts, see Murphy, Cooper, *Can Smart Contracts Be Legally Binding Contracts?,* white paper, R3cev and Norton Rose Fulbright, 2016.

it. For their own part, insurers seem to have identified the coverage of cyber risk as an important sector of activity, but they have also taken note of some critical issues that make it difficult to apply traditional risk management models. For both policyholders and insurers, technology can be either a disruptive element or a driver for development. Everything will depend on the resilience capabilities of the market, operators and individuals.

Cyber risk is prominently on the international agenda. The accessibility, reliability and security of cyberspace were considered by the G7 Leaders' Summit in 2016 as an "essential foundation for the economy, growth and prosperity".

Insurance companies and insurance intermediaries, in relation to their management of policyholders' data, will be among the actors on which civil or administrative liability may be imposed pursuant to the GDPR.

One of the great opportunities for insurers, however, is represented by the possibility of placing on the market functional products to cover cyber risk.[23]

Insurance contracts can represent an answer, not only in terms of insurance coverage but also in terms of risk management tools and the implementation of prevention systems.

Due to the aspatial and atemporal context within which it develops, it will be difficult to find solutions for cyber risk when it results in the production of concrete damage that can also trigger an interminable chain of losses and prejudicial events. Damage compensation is not the answer. Cyber risk should be addressed through measures to prevent and contain the harmful effects.

The services offered by insurers for the prevention of cyberspace violations

[23] Eiopa, *Cyber risks: what is the impact on the insurance industry?*, 2021 www. Eiopa.europa.eu; Eling -Schnell, *What do we know about cyber risk and cyber risk insurance?,* in *JRF*, 17, 2016, pp. 474-491.

operate on three fronts.[24]

• Technical-IT security, consisting in testing information systems to verify their vulnerability through essentially two types of service:

- verification of the security status of a network by searching for and identifying system vulnerabilities, thereby allowing the identification of elements potentially subject to attacks or intrusion attempts;

- simulation of an attack against a site, portal or web application.

• Planning and scheduling of all the actions to be taken to eliminate the problems that have emerged, thereby reducing the risk; the residual risk may be offset through insurance coverage at a reduced premium.

• Organisational-managerial security achieved through the drafting of codes of conduct for staff and targeted training taking into account a company's actual needs, monitoring and reporting on the compliance of the conduct of operators with the specified guidelines, help desks, etc.

These services can be implemented thanks to technology, and not only in relation to cybersecurity. Through the processing of big data, it is possible to determine correlations that identify risks and to create preventive tools.

By digitalising the processes involved, it is possible to speed up alert procedures and the implementation of prevention tools by the insured. Let us consider the possibility of introducing smart insurance contracts thanks to blockchain technology.

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[24] Algarni – Malaiya , *A Consolidated Approach for Estimation of Data Security Breach Costs*, 2016 2nd International Conference on Information Management (ICIM 2016)–IEEE, EI May 7-8, 2016; Baldoni – Montanari, *Un Framework Nazionale per la Cyber Security*, 2015 Italian Cyber Security Report, February 2016. http://www.cybersecurityframework.it/sites/default/files/CSR2015_web.pdf; Behnia, Rashid, Chaudhry, *A Survey of Information Security Risk Analysis Methods*, *Smart Computing Review* vol. 2 no. 1, February 2012; Biener, Elig, JWirfs, *Insurability of Cyber Risk: An Empirical Analysis*, in *Working Papers on Risk Management and Insurance* no. 151, January 2015; McFarland, Paget, Samani, *L'economia sommersa dei dati - Il mercato delle informazioni digitali rubate*, McAfee Labs di Intel Security Group, 2015.

A blockchain is essentially a digital ledger of transactions that is duplicated and distributed across the entire network of computer systems on the blockchain. Each block in the chain contains a number of transactions, and every time a new transaction takes place in the blockchain, a record of that transaction is added to every participant's ledger. The decentralised database managed by multiple participants is based on what is known as distributed ledger technology (DLT). A blockchain is a type of DLT system in which transactions are recorded with an immutable cryptographic signature.[25]

This observation allows us to analyse the application of blockchain technology to insurance contracts.

The positive effects of the application of blockchain technology to insurance contracts are varied.

Major positive effects include:

· a possible reduction in costs and potential errors related to the human and manual management of compensation claims,

· greater transparency of contracts, which may allow better comparability between the offerings of various companies, and the possibility of creating unique profiles of customers,

· a contribution to the fight against fraud, and

· a better flow of information, also for the purpose of implementing the product oversight governance procedure as per Article 25 of IDD Directive 97/2016.

Particular blockchain applications may be used in the claims settlement phase in the case of indexed policies that allow for correlating the amount of indemnity to

[25] Bertani, Butkute, Canessa, *Smart Flight Insurance InsurETH* at www.mkvd.s3.amazonaws.com; Huckstep, *What does the future hold for Blockchain and insurance*?, Daily Fintech. September 15, 2016, at www.dailyfintech.com

certain indexes. The basic concept of index-based or parametric solutions is: instead of indemnifying for the actual loss incurred, parametric insurance covers the probability of a predefined event happening, and pays out according to a predefined scheme.

In the agricultural sector, for instance, index-based insurance is spreading and is parameterised on the basis of meteorological indexes.[26]

The peculiarity of the agricultural sector is determined by the increase in the rate of losses occurring in this sector, largely derived from the catastrophic damage caused by climate change.[27] In such circumstances, the agricultural insurance contract is in danger of ceasing to be attractive for insurance companies, as compensation payouts are higher than premium income, resulting in a financial imbalance. This technical imbalance discourages insurance and reinsurance companies from taking on new lines of insurance and is a factor that has led to a progressive adjustment of the contractual conditions and the price of the premiums. Farmers end up being harmed as a consequence, despite the existence of premium subsidies. At the same time, recourse to reinsurance has become more complicated and companies are forced to establish more restrictive contractual conditions that are detrimental to the insured and, ultimately, to the insurance system.[28] To this one should add the limitations on

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[26] Cevolini, Esposito, *From pool to profile: Social consequences of algorithmic prediction in insurance*, in *Big Data Society,*7 2020, p. 2; Corlosquet-Habart, Janssen (eds.) *Big Data for Insurance Companies*, 2018, London; Wiley; Ewald, *Assurance, Prévention, Prédiction Dans L'univers du Big Data*, Paris: Institut Montparnasse, 2012; McFall, Moor, *Who, or what, is InsurTech personalizing? Persons, prices and the historical classifications of risks,* in *Distinktion Journal of Social Theory*, 19(2), 2018, pp. 193–213

[27] On the increase in damage claims, see, for example, in Spain, p. 21, "Memoria de Enesa. Principales indicadores del seguro agrario en 2022", published by Enesa at https://www.mapa.gob.es/es/enesa/memoria_enesa_2022_web_tcm30-656077.pdf (Date of consultation: 04/10/23). The same is true in Italy, see p. 6 "Rapporto sulla gestione del rischio in agricoltura 2023" dell'Istituto di Servizi per il Mercato Agricolo Alimentare (ISMEA) https://www.ismea.it/flex/cm/pages/ServeBLOB.php/L/IT/IDPagina/12434 (Date of consultation: 04/10/2023).

[28] See p. 5 of the abovementioned "Rapporto sulla gestione del rischio in agricoltura 2023" . This situation is described by Del Caño Escudero, F., *Derecho español de seguros*. T. II, Madrid, 1983, p.

public expenditure to cover premium contributions. It is therefore appropriate to reflect on agricultural insurance as a tool and analyse the extent to which technology makes it possible to foresee or even prevent risks in the farming sector. The issue is relevant because it should be remembered that the agricultural insurance contract has been considered as a product that allows crops and livestock to be protected from the risks inherent to the sector. It is a way of transferring risk by preventing it from being borne solely by the farmer. This measure has been part of the financial instruments supported by the EAFRD, thus consolidating insurance as a passive defence tool that favours rural development.[29] In fact, recital 82 of Regulation (EU) 2021/2115 refers to the need to maintain and extend support for farmers to manage their production and income risks under the EAFRD, referring, in particular, to the use of subsidies for the payment of insurance premiums.

In this context, in order to mitigate or avoid the damage caused within the agricultural sector, it is important to adopt active defence measures to adapt crops or agricultural activity to the current climate situation. The use of big data can help to ensure that the most correct measures are taken to this end. And such data can also play a role in determining the type of defence measures and requirements that the Member States of the European Union, through their ministries of agriculture, establish for the agricultural sector as conditions for granting aid. Similarly, it is easier for insurance companies to obtain adequate information for drawing up the requirements that the insured must meet in order to take out an insurance policy.[30] In other words, in this area predictive analytics can help to assure the success of the

121; only farmers whose crops are highly exposed to risk resort to insurance, which means that the rate of claimed losses is very high and, consequently, premiums become more expensive. At the same time, given the high cost of premiums, many farmers do not resort to insurance and adverse selection is becoming more and more prevalent and leads to high premiums.

[29] The importance of this type of measure in the sector is pointed out by Landini, *Assicurazioni del rischio in agricoltura*, in *Rivista di Diritto Agroalimentare*, 2021 (3), pp. 539-555.

[30] In this regard, see Landini, *Assicurazioni del rischio in agricoltura*, cit., pp. 539-555.

decision-making process in reducing risk and contribute to eliminating information asymmetry in insurance. In short, as already mentioned in relation to cyber risk, insurance contracts can represent an answer also in terms of risk management tools and implementation of prevention systems in the agricultural sector.

Along with the importance that the use of big data can have in the process of adopting active defence measures, it is worth highlighting its impact on passive defence measures, and, in particular, on the new types of insurance contracts created to adapt to the needs of the agricultural sector. A specific area in which there are automatic contract term adjustment systems is that of policies whose financial conditions (in particular the premium) are linked to a specific target connected to the behaviour of the insured. This model is already applied in the auto insurance sector, with PAYD (pay as you drive) policies in which the amount of the premium depends on the use of the car.[31]

At this point, it is worth highlighting parametric insurance, which —although not among the types of insurance contracts for which the premium is subsidised by the State in accordance with EU Regulation—has aroused interest in the agricultural sector.[32] This type of policy was introduced in response to the need to limit the impact of adverse meteorological events on the agricultural sector.[33] The peculiarity of parametric policies is that the amount of compensation is fixed in the insurance

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[31] Lüttringhaus, *Mehr Freiheit wagen im Versicherungsrecht durch daten- und risikoadjustierte Versicherungstarife – „Pay-as-you-drive"-, „Pay-as-you-live"- und „Smart-Home"-Tarife als Herausforderung für das Versicherungsvertragsrecht – (Risking More Freedom: Data and Risk-based Insurance Tariffs – "Pay-as-you-drive, "Pay-as-you-live" and "Smart-Home" Tariffs as a New Challenge for Insurance Contract Law –), »Mehr Freiheit wagen« – Beiträge zur Emeritierung von Jürgen Basedow*, Anatol Dutta and Christian Heinze, eds., Mohr Siebeck, 2018, Max Planck Private Law Research Paper No. 17/181, pp. 55-72.

[32] In Italy, the premium for taking out these policies is not included in the list of eligible expenses. However, there are other sources of funding, such as Italian agricultural producer organisations (POs), which provide an incentive for their adoption.

[33] Santagata, "*Polizze assicurative parametriche (o index-based) e principio indennitario*", *Rivista di Diritto Civile*, 2022, 1, p. 134 (commento alla normativa), p. 1; De Luca, *Stima accettata, polizza stimata e assicurazione parametrica. Spunti di riflessione*, in *Assicurazioni* 2023, p. 432.

contract; thus, if a claim is made, the insurer must pay out the agreed compensation. Parametric policies are characterised, firstly, by the fact that they are activated when the fulfilment of certain external and objective conditions previously established in the contract is verified.[34] Therefore, when various parameters are met and a certain threshold is reached, the insured will be entitled to receive the agreed compensation. Secondly, they reduce or eliminate the part of the damage assessment carried out by experts, thus reducing the costs and time that such an assessment entails. Accordingly, the insurer must pay compensation when specific circumstances are verified, such as, for example, the existence of a drought lasting a certain number of days or a certain amount of rainfall.

It is doubtful whether these contracts can actually be considered insurance contracts in the traditional sense, as the indemnification is based on an index.[35] However, it should be noted that most of these policies include a provision relating to the specific damage that needs to have occurred in order for payment of compensation to be made. Consequently, the damage can be presumed on the basis of a statement submitted by the insured or based on the achievement of certain indexes. In the legal literature some argue that the inclusion of this provision makes it possible to safeguard the indemnification principle inherent in insurance contracts, since, without the existence of the damage, the insurer can refuse to pay compensation.[36] In this regard, national insurance contract regulations reflect the

[34] Abril, Badrinas, Biurrun, "*La revolución de las insurtech en el seguro*", *Boletín de Estudios Económicos*, 2020, T. 75, n. 230, p. 240, They refer to smart or parametric policies: through a combination of IoT devices and blockchain technology, insurance companies can know whether or not the conditions of the contract are being met (for example, if drugs are being correctly transported, guaranteeing the cold chain at all times) and automatically activate (without human supervision) a series of business rules previously defined and agreed in the contract.

[35] Thourot, Folly, *Big Data: Opportunité ou Menace Pour L'assurance?,* Paris: RB Édition, 2016.

[36] See Landini, "Assicurazioni del rischio in agricoltura", cit., pp. 539-555, in conjunction with Article 1905 of the Italian Civil Code. In Spain, Article 26 of the Insurance Contract Law. See also Girgado Perandones, *El principio indemnizatorio en los seguros de daños. Una aproximación a su significado*, Comares, Granada, 2005, p. 32 ff.

indemnification principle by stating that the insurer is obliged to compensate, in the manner and according to the terms provided for in the contract, the damage suffered by the insured as a result of the loss. Indeed, parametric insurance is characterised by the fact that there is automatic entitlement to the previously agreed compensation should the damage-causing event occur.[37] This does not mean eliminating the aforementioned principle of insurance contract law, but rather implies an automatic determination of compensation taking into account the individual indexes and the damage that is estimated to have been caused.[38] Big data and algorithms can be used to calculate such damage with the aim of facilitating its quantification and reducing the margin of human error and fraud as much as possible. Accordingly, it is possible to individualise losses in an abstract way that is at the same time effective and realistic. Digital transformation in insurance makes it possible to improve efficiency or reduce costs, automate tasks and enable effective decision-making.[39]

Indeed, it is necessary to start from the concept of the insured interest, understood in terms of the economic relationship between a person (the insured) and a thing, right or property. The value of the insured interest limits the maximum amount of damage that the loss may cause to the insured, since the principle of compensation governs, which limits compensation to the ratio between the value of the interest and the value of the damage actually suffered and prevents unjust enrichment. In the case of parametric insurance, the sum insured and the compensation to be paid by the insurer for each claim are predetermined in order to simplify the management and

[37] See Article 1905 of the Italian Civil Code, or Article 26 of the Spanish Insurance Contract Regulation.
[38]As is well known, and as is underlined by Veiga Copo, *Infraseguro, sobreseguro, seguro pleno. Pólizas tasadas o estimadas*, *Tratado del contrato de seguro*, Aranzadi, Pamplona, 2009, consulted online: “el asegurado espera la reparación de ese daño sufrido, cuestión distinta es el alcance de la misma así como la satisfacción total o parcial del asegurado, que no siempre se auspiciará por la indemnización sino por lo efectivamente contratado y delimitado en las coberturas del riesgo”.
[39] Abril; Badrinas, Biurrun, *La revolución de las insurtech en el seguro*, cit., p. 227-228.

costs of assessing the damage once the claim has been submitted.[40]

The problem in the development of the parametric insurance market is not a legal one, but rather a technical one related to the identification of a certain, objective index that allows a determination of damage consistent with reality. In agricultural insurance, for example, the problem is to determine the correlation between events (for example rain and wind) which can affect the extent of the damage.

As has been pointed out in the Italian legal literature, the presence of the principle of compensation and the necessary existence of damage make it possible to distinguish this concept from a very different one that raises other problems from the point of view of the applicable regulation, namely where the product goes outside the scope of insurance law and is configured as a derivative financial product.[41] In other words, when the speculative function is prioritised over that of coverage, it should not be considered insurance, because insurance against damage cannot be used for speculative purposes.[42] Such a situation would arise in the event that a product was used for speculative purposes and the investor received the amount set according to the rules established in the contract regardless of the existence of an insured interest

[40] It is interesting to consider the relationship between a parametric policy and an estimated value policy, although this question is beyond the scope of this paper. In Italy, account should be taken of the analysis made by Partesotti, *La polizza stimata*, Padova, 1967. In Spain, on the estimated value policy regulated under Article 28 of the Insurance Contract Law, already cited, see Díaz Moreno, *La disciplina de la póliza estimada en la Ley de Contrato de Seguro*, Aranzadi, Madrid, 2008, p. 40 ff., or Girgado Perandones, *La póliza estimada. La valoración convencional del interés en los seguros de daños*, Marcial Pons, Madrid, 2015, p. 51 ff. In Italy, this distinction is addressed by emphasising the difference between the difficult verification of value in the absence of a reference market and valuation by means of indices or objective external parameters; De Luca, *Stima accettata, polizza stimata e assicurazione parametrica. Spunti di riflessione*, cit., pp. 436 and 446.

[41] See the interesting considerations made at https://www.intermediariassicurativi.it/iass-distribuzione-assicurativa/iass-news/iass-insurtech/insurtech-cosa-sono-le-polizze-parametriche.html (Date of consultation: 20/10/23). About financial products, see Corrias, *I prodotti assicurativo-finanziari: genesi ed evoluzione*, in *Assicurazioni*, 2021-4, pp. 581-593. In reference to Italy, see Angelici, *Alla ricerca del "derivato"*, Giuffrè Editore, Milan, 2016, pp. 7 ff.

[42] Recently, De Luca, *Stima accettata, polizza stimata e assicurazione parametrica. Spunti di riflessione*, cit., pp. 434.

and, therefore, the occurrence of damage. A product of this type could be considered a derivative because it does not respect the indemnification principle, which is a defining characteristic of insurance: the payment made by insurers needs to replace what has been lost, thereby restoring the insured to where they were financially prior to the loss, without rewarding or penalising the insured for their loss. In order to determine whether a parametric policy is actually an insurance contract, we think that it is important to consider whether the index is based on data and correlation, which, thanks to an algorithm, enable the amount of damage to be determined. In this case, the indemnification principle is respected. Moreover, it is possible to avoid human errors and frauds. Thus, this kind of indemnification is more effective and respectful of the principle of indemnification than current manual assessment procedures.

The problem is particularly relevant in the agricultural sector. The current increase in catastrophic events linked to climate change and the reduction of public resources to deal with major damage lead us to consider the possibility of finding private sources of funding and systems to prevent or reduce damage, in particular damage to production. Catastrophic events in agriculture are one of the major causes of over-indebtedness of farmers, as emerged from the report "Risk Management and Agricultural Insurance Schemes in Europe" (2009) of the Joint Research Centre of the EU Commission.

Funding and prevention are the two primary needs in the case of catastrophic environmental events. An efficient answer to such needs may be found in insurance contracts. The insurers will indemnify the insured party in the event of losses. At the same time, in order to avoid moral hazard and reduce risk, the insurer will contractually impose rules of conduct on the insured party with the aim of reducing or avoiding such losses. In this way, insurance contracts could play a relevant role both in funding and in prevention. But a fall in the demand for insurance has emerged in the

agricultural sector.

Insurance coverage is inadequate in relation to farmers' needs, and unsustainable in terms of the cost of coverage. The causes of high premiums are basically: adverse selection problems (only those who are more exposed to risks are interested in concluding an insurance contract) and the high cost of loss assessment. Even where state subsidies are available to help cover the cost of premiums, there are strong bureaucratic obstacles to the development of insurance coverage.

The main goal should be to implement contractual coverage of damage arising from environmental catastrophes by identifying contractual terms of insurance that represent an answer to the above-mentioned problems.

With regard to the contractual coverage of damage caused by disasters, different solutions have been proposed in the agricultural sector.

1) Index-based insurance, where the amount of compensation is predetermined on the basis of the certain target indexes, such as climate or weather indexes.[43]

The advantages of this mechanism are well known: reduction of settlement costs; greater chance of predetermining losses, and therefore better reinsurance capabilities; correction of adverse selection problems; all insured parties are subject to the same terms and conditions, which virtually eliminates the problem of adverse selection for insurers.

These contracts need to be qualified to determine whether they are insurance contracts or derivative contracts for the purposes of the applicable law.[44]

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[43] Skees, Collier, New Approaches for Index Insurance: ENSO Insurance in Peru. 2020 Vision for Food, in *Agriculture, and the Environment*, Focus 18 Innovations in Rural and Agriculture Finance. Kloeppinger-Todd, and Sharma, eds. Washington, DC: International Food Policy Research Institute, 2010.

[44] Stout, *Betting the Bank: How Derivatives Trading Under Conditions of Uncertainty Can Increase Risks and Erode Returns in Financial Markets*, in *J. CORP. L.*, 1995, 21, p. 53; Stripple, *Securitizing the Risks of Climate Change,* in *IIASA*, IR- 98 098 December, Laxemburg (Austria), 1998

From the legal point of view, there are also issues tied to the qualification of contracts for purposes of authorisation in the national public insurance market under EU directives in this field and, most recently, in consideration of Directive 138/2009/EC (Solvency 2).

The limit of this tool is that it does not allow damage prevention measures to be evaluated. It is said that index-based insurance policies reduce moral hazard as the "payout" is determined on an independent basis and on an exogenous weather parameter, irrespective of the insured's behaviour. This aspect does not detract from the certainty of "winning", which can represent a disincentive against the adoption of damage prevention measures.[45]

A solution can be found in the use of adaptation strategies when determining the pay-out, as in case of so-called "resilience bonds".[46]

2) Determination of the compensation based on losses directly related to the calamitous event which are more easily verifiable and quantifiable. It is important to take into account the loss of profit (income in the case of natural persons) or loss of revenue. Both need to be structured through careful legal drafting techniques so that contracts also contain conditions for the prevention and containment of damage (see conditions for compensation arising from the adoption of prudential conduct by the claiming party) and cover the risk of a catastrophic event, not a risk of losses of wealth and income that are independent of a catastrophic event. This distinction is important

[45] Landini, *From Environmental insurance to environmental derivatives?*, in *European Energy and Environmental Law Review*, 2013, 228 ff.

[46] Castelli, Galeotti , Rabitti, *Financial instruments for mitigation of flood risks: the case of Florence*, in *Risk Analysis*, 39,2019, pp. 462-472; A.J. Pagano, F. Romagnoli, E. Vannucci, *Implementation of Blockchain Technology in Insurance Contracts Against Natural Hazards: A Methodological Multi-Disciplinary Approach*, in *Journal of Environmental and Climate Technologies*, 2019 DOI:10.2478/rtuect-2019-0091; Pagano, Romagnoli, Vannucci, *Climate change management: a resilience strategy for flood risk using Blockchain tools*, in *Decisions in Economic and Finance*, 2019, pp. 1-14.

both for public authorisation, where coverage is provided by an insurance company, and for access to public subsidies (as in case of agricultural risk coverage). The limits to this solution are that it does not eliminate adverse selection phenomenon, as the event for which coverage is provided will be a certain type of catastrophic event. Thus, only subjects most exposed to that risk will be interested in that kind of insurance coverage.

It is evident that both solutions (index-based insurance – insurance against loss of profit) fail to reach the objective of providing adequate protection, in term of responding to farmers' needs, and sustainable coverage (in terms of costs). It is important to reduce the risk thanks to climate adaptation techniques to be adopted by farmers.

Particular blockchain applications may be used in the claims settlement phase in the case of indexed policies that allow for correlating the amount of indemnity to certain indexes. The basic concept of parametric solutions is: instead of indemnifying for the actual loss incurred, parametric insurance covers the probability of a predefined event happening, and pays out according to a predefined scheme.

In the agricultural sector, index-based insurance is spreading and is generally parameterised on the basis of meteorological indexes.

Attention should be shifted from production to distribution, with a view to a climate-sensitive distribution that enhances the climate adaptation measures adopted by farmers based on the risk assessment.

4.2. Insurance distribution sees a progression of procedural steps marked by documentation, information, registration, and communication obligations such as to ensure the suitability of insurance contracts with respect to the requests and needs of the insured party. The fulfilment of these obligations could be guided and recorded—

also for the purpose of preserving the data and as proof of correct execution—through the use of blockchains.[47]

Blockchain technology could also make it easier to find the most suitable products on the market and to implement a correct risk assessment, also taking into consideration new issues such as climate risk and climate adaptation, the risk of war, and catastrophic risks.

Under Article 20 of the IDD (Directive 97/2016 on insurance distribution), it is required that "any proposed contract must be consistent with the insurance requests and needs of the customer".[48]

Recitals 42 to 44 of IDD Directive EU/2016/97 state: "Insurance intermediaries and insurance undertakings are subject to uniform requirements when distributing insurance-based investment products, as laid down in Regulation (EU) No 1286/2014 of the European Parliament and of the Council. In addition to the information required to be provided in the form of the key information document, distributors of insurance-based investment products should provide additional information detailing any cost of distribution that is not already included in the costs specified in the key information document, so as to enable the customer to understand the cumulative effect that those aggregate costs have on the return of the investment. This Directive should therefore lay down rules on provision of information on costs of the distribution service connected to the insurance-based investment products in question.

As this Directive aims to enhance consumer protection, some of its provisions are only applicable in 'business to consumer' relationships, especially those which regulate conduct of business rules of insurance intermediaries or of other sellers of

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[47] Marano, *Management of Distribution Risks and Digital Transformation of Insurance Distribution—A Regulatory Gap in the IDD*, in *Risks*, 9, 2021, p. 143.
[48] Noussia, *The IDD and Its Impact on the Life Insurance Industry*, in Marano, Noussia, (eds.) *Insurance Distribution Directive. AIDA Europe Research Series on Insurance Law and Regulation*, vol 3, Berlin: Springer, p. 140.

insurance products.

In order to avoid cases of mis-selling, the sale of insurance products should always be accompanied by a demands-and-needs test on the basis of information obtained from the customer. Any insurance product proposed to the customer should always be consistent with the customer's demands and needs and be presented in a comprehensible form to allow that customer to make an informed decision."

As mentioned above, a blockchain works as a decentralised and encrypted register, in which, in real time, countless operations are recorded without anyone being able to change what is written centrally; any modification or update can only take place after consent has been received by all parties involved in the transaction to be registered or modified.

The blockchain could therefore be considered as a third player, potentially replacing the functions that today we usually attribute to notaries, who have been identifying ways of using it for the purpose of exercising the notary profession for some time. Blockchain technology allows the collection, verification and sharing of data of various kinds in a safe and transparent way.

These data may include the demands and needs of customers, the results of their profiling and product data.[49]

As for customer profiling and product adequacy determined through algorithmic processes, it is necessary to distinguish among the types of insurance. In the life business, adequacy is more measurable. In the financial market, metrics are already in place that allow for quantifying the adherence of the product to the profiles of adequacy and appropriateness with respect to the customer profile; in the non-life branch, there are still no metrics, i.e. adequacy is still determined on a non-

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[49] Regarding the financial market, see Perlingieri, *Mifid II. Innovazione finanziaria e rapporti con la clientela*, in *DIMAF*, 2019, pp. 1-7

quantitative basis. It is worth considering possible measurements in this area as well.

4.3 All the abovementioned issues can be amplified by the phenomenon of open insurance. In January 2021, EIOPA published a report on open insurance, a phenomenon of the share economy that can be seen from different perspectives, also from that of supervision. As stated in the report, there is no uniform definition of open insurance. EIOPA considers open insurance as broadly related to the accessing and sharing of personal and non-personal insurance-related data, usually via Application Programming Interfaces (APIs). An application programming interface (API) is a computing interface that defines interactions between multiple software instances or layers, including those operated by third parties.[50]

On the consumer data side, it could be defined as the accessing and sharing of data relating to consumer insurance services (e.g. insurance policy data such as insured item, coverage, claim history, Internet of Things data, etc.) among insurers, intermediaries or third parties for the creation of applications and services.

On the supervision side, open insurance could also open the doors to new supervisory tools. EIOPA has published a supervisory technology strategy (SupTech) explaining the use of technology by supervisory authorities to provide innovative and efficient supervisory solutions that will support a responsive supervisory system.

On the insurance industry side, the increased exchange of data through open insurance can facilitate industry-wide innovation, openness and collaboration and will likely enable the insurance industry to embrace data-driven innovation, create innovative products for consumers and increase efficiency and interaction with third parties (e.g. better interaction with insurance platforms and ecosystems).

[50] EIOPA Discussion paper, Open insurance: accessing and sharing insurance-related data, 2021, www.eiopa.europa.eu

Furthermore, it could facilitate the emergence of increased competition within the value chain, such as through the introduction of new players and new business models, which may drive down some costs by virtue of enhanced efficiency.

In the industry perspective, one should also consider the interaction between banks and insurers considering the role of the Bank-Insurance phenomenon.

Another perspective to be considered is that of international organisations interested in obtaining insurance market data for social purposes, like in the case of health data.

There are other possible uses of open insurance not considered in EIOPA's paper:

1. Index-based indemnification

Open insurance can have an important role in non-life insurance in the procedures of damage assessment. The determination of losses can take long periods of time and could be costly for both the insurer and the insured party. Index-based insurance can help here. With index-based insurance, payouts are related to an "index".[51]

The development of index-based insurance depends on the collection of data serving to facilitate the determination of the amount of the insurance indemnity thanks to predetermined variables (i.e. level of rainfall) correlated to a certain number of losses.[52]

2. Better risk mapping and preventive measures.

Insurance coverage can play a relevant role in risk mitigation. Insurance exclusions are policy provisions that waive coverage for certain types of events. They

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[51] Collier, Skees, Barnett. *Weather Index Insurance and Climate Change: Opportunities and Challenges in Lower Income Countries*, in *Geneva Pap Risk Insur Issues Pract,* 34, 2009, pp. 401–424.

[52] Lynn A. Stout, *Insurance or gambling? : Derivatives trading in a world of risk and uncertainty,* in *The Brookings Review. - Washington, DC : Brookings Institution Press*, 1996, pp. 38-41.

are an important way to introduce rules of prudential conduct for insured parties. For instance, insurance contracts usually have exclusions that void the insurance contract if the insured is attempting to recoup losses resulting from lawless behaviour or criminal actions. It is important to map the conduct risk of the insured party in order to introduce into the contract rules of conduct designed to prevent the covered event. For instance, in agricultural insurance, starting from past events, it is possible to map possible preventive measures to be adopted by the insured party in order to avoid the insured event or to limit the losses. The preventive and adaptation measures could be considered in the determination of the financial conditions of the contract and in the decision-making process.

3. Artificial intelligence can reduce human errors, but it cannot preclude damage. There is discussion as to who would be liable in the event of damage caused by artificial intelligence: the user, the owner, the manufacturer, or the program- mer.[53]

In the case of liability insurance, in order to mitigate the risk, it is important to improve the algorithms so as to reduce the machine's mistakes and the losses in case of AI actions.

The data sharing about insurance claims can help in machine learning processes.

5. We have seen the impact of new technologies in the insurance sector: thanks to data analytics it is possible to carry out a more precise risk assessment that allows for identifying the product that best meets the customer's requests. It is also possible to determine the insurability level by rebalancing the ordinary information asymmetry in insurance contracts: the insurer usually has less information related to the

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[53] Vladeck, *Machines Without Principals: Liability Rules and Artificial Intelligence*, *in Washington Law Review*, 89, 2014, p. 130.

customer's risk status. For this reason, legislators have introduced disclosure obligations for the customer. Thanks to big data, insurers can close the information gap and even obtain more information than the customer has on their risk status.

On the production side, it is possible to build more tailor-made insurance contracts that also consider risk mitigation tools that the customer must adopt to reduce or prevent the event from occurring, as in the case of agricultural insurance. The insurance coverage thus becomes a sort of last resort, where damage occurs beyond the forecasts despite the adoption of the measures provided for in the contract.

The same processes for determining the damage through parametric policies make compensation faster on the one hand, and on the other make the payout in the event of a claim better predictable and quantifiable.

InsurTech implies new challenges also for National Supervisory Authorities, which need to map the InsurTech-related risks for the market to find new supervision measures, and to be more connected.[54]

Uncertainty cannot be eliminated, but it can be reduced. Insurance contracts are increasingly contracts for the provision of risk management services rather than for risk coverage.

The question is, are they still insurance contracts? Perhaps it is worth remembering what Ernst Bruck said in the 1930s.

According to his theory, the function of an insurance contract is "die Gefahrtragung", or risk bearing, which is not reduced to just the payment of the claim if a future and uncertain event occurs, but which also includes risk assessment and management.[55]

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[54] Viktoria Chatzara, *FinTech, InsurTech, and the Regulators*, in *InsurTech: A Legal and Regulatory View* Pierpaolo Marano, Kyriaki Noussia (editors), Springer, Berlin, p. 4.
[55] E. Bruck, *Das Privatversicherungsrecht*, Mannheim, 1930, p. 364 ff.

Following Bruck's teaching, it can therefore be said that the technological innovations that have undoubtedly impacted the insurance market have not changed the fundamental function of the insurance contract in terms of managing and transferring risk to the insurer.

THE EU'S RETAIL PAYMENTS STRATEGY THROUGH THE PRISM OF THE DRAFT INSTANT PAYMENTS REGULATION: MORE IS LESS?

Elisa Bertoli[*] – Ana Vargek Stilinović [**]

ABSTRACT: *Taking stock of progress with the implementation of the EU's Retail Payments Strategy, this paper explores the implications of the recent Commission Proposal for an Instant Payments Regulation and, in particular, of its proposed requirement for EU-based PSPs to offer instant payments in euro to their customers. It will be argued, below, that there may be more to the future extension to E-money institutions and Payment institutions of the obligation to offer instant payments than a mere revision of the Settlement Finality Directive, to bring them within its scope, and that the development of competitive, pan-European payment solutions built around instant payments may not be possible without the support of the European Central Bank and the Eurosystem national central banks, as owners and operators of TARGET, Europe's leading large value payment system for euro-denominated transactions.*

SUMMARY: 1. Introduction – 2. Evolution of instant payments – 3. From EU's Retail Payments Strategy to Instant Payment Regulation Proposal: *Rationale* and Content – 4. Catalysing Growth: How will Instant Payment Regulation Empower E-Money and Payment Institutions? – 5. Eurosystem Discretion: TARGET access criteria – 6. Conclusion.

1. The ongoing digitalisation progress is leading to a rapid shift in the payments landscape and is changing consumer habits along the way. That notwithstanding, the

[*] Trainee, Market Infrastructures and Payments at European Central Bank
[**] Senior Legal Counsel at European Central Bank.
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EU retail payments continue to be characterised by fragmentation across national borders.[1] This is particularly evident in the field of instant payments, where domestic solutions lack cross-border interoperability[2], and where EU-based Payment Service Providers (PSPs)[3] have the freedom to choose whether to offer instant payments to their customers. With the implementation of the EU's Retail Payments Strategy and the recent Commission Proposal for an Instant Payments Regulation, the EU instant payments landscape is likely to undergo significant transformation, with instant payments becoming available to all citizens and businesses as "the new normal".[4] EU policy makers have a decisive role to play by leading the industry through their legislative initiatives in the field of instant payments.[5] Yet, as it will be argued in this paper, achieving the objective of broadening access to instant payment will also call for support from, amongst others, the ECB and the euro-area central banks.

This paper discusses the evolution of instant payments and their potential to

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[1] PEREIRA, *The new Retail Payments Strategy for the EU*, European Payments Council Brussels 22 October 20, available at https://www.europeanpaymentscouncil.eu/news-insights/insight/new-retail-payments-strategy-eu

[2] See: POLASIK, WIDAWSKI et. al., *Retail Payments Strategy for the EU versus the challenges of the payment sector*, Ekonomia i Prawo. Economics and Law, 20(3), pp 617–640, p 619.; European Commission, *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, 24 September 2020.

[3] According to Article 1 of the Directive (EU) 2015/2366 of the European Parliament and of the Council on payment services in the internal market [2015] OJ L 337 (PSD 2), payment service providers encompass following categories of institutions: (i) credit institutions as defined in point (1) of Article 4(1) of Regulation (EU) No 575/2013 of the European Parliament, (b) electronic money institutions within the meaning of point (1) of Article 2 of Directive 2009/110/EC, (c) post office giro institutions which are entitled under national law to provide payment services, (d) payment institutions, (e) the ECB and national central banks when not acting in their capacity as monetary authority or other public authorities and (f) Member States or their regional or local authorities when not acting in their capacity as public authorities.

[4] EUROPEAN CENTRAL BANK, *The Eurosystem's retail payments strategy – priorities for 2024 and beyond,* p 4.

[5] PANETTA Speech *At the edge of tomorrow: preparing the future of European retail payments Introductory remarks*, *at the 14th Payment Forum of Suomen Pankki − Finlands Bank*, Helsinki, 19 May 2021.

serve as a substitute for other payment instruments, including cash.[6] In that context, this paper also explores the main rationale behind the EU's Retail Payments Strategy and the particulars of the new Instant Payments Regulation Proposal. The focus will be on the proposed mandatory requirement imposed on all PSPs to offer instant credit transfers and on the proposed amendments to the Settlement Finality Directive ('SFD'),[7] which will allow both E-Money (EMIs) and Payment Institutions (PIs) to directly participate in SFD-designated settlement systems. However, while discussing the legal implications of the proposed amendments to the SFD, in view of extending SFD protection to EMIs and PIs, it will be argued that the adoption of the Instant Payments Regulation would not automatically render EMIs and PIs eligible participants in all designated EU settlement systems, and that the extension of SFD protection to EMIs and PIs would not entail their automatic participation in TARGET ('Trans-European Automated Real-Time Gross Express Transfer') system.

2. Retail payments have been going through a multi-step transformation process since the introduction of the euro, and their dynamics are increasingly shaped by digitalization.[8] Customer payment habits and expectations are undergoing constant changes due to the introduction of new technologies that offer novel possibilities for transferring funds. With the increasing use of e-commerce, users expect to be able to conclude their purchases throughout the day, including over weekends, irrespective of their location. Hence, the rise in the expectation for faster or, even, real-time payment methods.[9] In this context, new players are joining the retail payments field,

[6] KHIAONARONG and HUMPHREY, *Monetary and Capital Markets Department Instant Payments: Regulatory Innovation and Payment Substitution Across Countries*, IMF Working Paper, November 2022, p 4.
[7] Directive 98/26/EC of the European Parliament and of the Council of 19 May 1998 on settlement finality in payment and securities settlement systems [1998] OJ L 166.
[8] From banknotes and checks to more modernized payments methods such as credit cards, debit cards, to name a few of the most commonly used nowadays, the methodology of payments methods being offered to consumers is gradually growing.
[9] See EPC Report to the ERPB on Instant Payments, 04 June 2015, p 7.

most notably, entities outside the traditional banking sector. In this environment of digital innovation, the payments landscape becomes increasingly complicated to navigate through, with participants other than banks becoming involved in the facilitation and processing of payments.[10] Consumers and businesses now have a greater variety of payment options available than ever before.[11]

Instant payments are one of the most prominent payment options to have emerged in the course of the last decade. Instant payments offer multiple benefits in comparison to all other payment methods. For instance, instant credit transfers could be initiated and settled within the space of a few seconds, on a 24/365 basis. The main implication of their immediate availability is that they are ideal for time-critical payments requiring immediate settlement. Moreover, they enable the immediate crediting of funds in the accounts of payees, rendering those funds available for further transactions.[12] In comparison, regular credit transfers typically involve the transfer of funds between bank accounts within a specified timeframe, often taking 1 to 3 business days to complete, as these transfers are only possible during banking hours and are subject to processing schedules.[13] Additionally, instant payments hold the promise of becoming the next best option to cash.[14] Indeed, just as in the case of cash payments, instant payments achieve immediate settlement. Moreover, instant payments have the potential to facilitate both personal and business-related

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[10] PEREIRA, *The new Retail Payments Strategy for the EU*, European Payments Council, Brussels 22 October 20.

[11] HARTMANN, HERNANDEZ-VAN GIJSEL et. al., *Are Instant Payments Becoming the New Normal? A comparative study*, ECB, Occasional Paper Series No 229, August 2019, p 4.

[12] KHIAONARONG and HUMPHREY, *Monetary and Capital Markets Department Instant Payments: Regulatory Innovation and Payment Substitution Across Countries*, IMF Working Paper, November 2022, p 4.

[13] Ibid.

[14] See SANTAMARÍA, *Developments in Instant Payments*, Journal of Payments Strategy & Systems, Volume 13, Number 3, 2019, p 191. See more CIPOLLONE Speech *Preserving people's freedom to use a public means of payment: insights into the digital euro preparation phases, Introductory statement, at the Committee on Economic and Monetary Affairs of the European Parliament*, Brussels, 14 February 2024.

transactions, with cost savings comparable to those attending the use of cash.[15]

The successful use of instant payments requires the deployment of solutions to provide individuals and businesses with an efficient and secure method for transferring funds. Initially, these solutions were implemented at the national level, and were available domestically or among customers using the same PSP.[16] The multiplicity of national instant payment solutions within the EU inevitably posed a threat to the efficient operation of the Single Market, inducing fragmentation. In a bid to avoid the negative consequences of non-harmonised instant payments solutions in the EU, the Euro Retail Payments Board ('ERPB')[17] invited, in 2015, the European Payment Council ('EPC')[18] to present a proposal for an instant credit transfer scheme in euro for the Single Euro Payments Area (SEPA).[19] The SEPA Instant Credit Transfer (SCT Inst) Rulebook was published in November 2016, providing a single set of rules, practices and standards allowing the transfer of money in SEPA jurisdictions in less than 10 seconds, 24 hours a day and on every calendar day of the year.[20] Based on the Rulebook, the SEPA Instant Credit Transfer (SCT Inst) scheme was finally launched in

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[15] Cash, together with cheques, is the higher priced payment methods on the market. See SANTAMARÍA, *Developments in Instant Payments*, Journal of Payments Strategy & Systems, Volume 13, Number 3, 2019, p 191.

[16] European Payment Council, Questions and answers on the SEPA Instant Credit Transfer Scheme, available at: https://www.europeanpaymentscouncil.eu/document-library/other/questions-answers-sepa-instant-credit-transfer-scheme.

[17] The ERPB was created within the auspices of the European Central Bank ('ECB') in 2013 to facilitate the further development of an integrated, innovative and competitive market for euro retail payments in the EU, see Article 1 of the Mandate of the Euro Retail Payments Board, available on the ECB's website.

[18] The European Payment Council was created by European banking sector in 2002, to contribute to the achievement of the SEPA vision. It is not, however, part of the EU institutional framework. See EUROPEAN PAYMENT COUNCIL, The EPC and the SEPA process, available at https://www.europeanpaymentscouncil.eu/about-us/epc-and-sepa-process.

[19] See WINN, *Reengineering European Payment Law*, 2019, available at SSRN: https://ssrn.com/abstract=3412457 or http://dx.doi.org/10.2139/ssrn.3412457.

[20] See SEPA Credit Transfer Scheme Rulebook, Version 1.0. See more EUROPEAN PAYMENT COUNCIL, SEPA Instant Credit Transfer scheme, available at https://www.europeanpaymentscouncil.eu/news-insights/videos/sepa-instant-credit-transfer-scheme. See more EUROPEAN CENTRAL BANK, *Benefits of SEPA Instant Credit Transfer (SCT), available at* https://www.ecb.europa.eu/paym/integration/retail/instant_payments/shared/pdf/ECB_Document_MIP_Brochure_FinalVersion.pdf; EUROPEAN PAYMENT COUNCIL, *SEPA Instant Credit Transfer*, available at https://www.europeanpaymentscouncil.eu/what-we-do/sepa-instant-credit-transfer.

2017 with the aim to facilitate the processing of instant payments in euro provided by both banks and non-bank PSPs. As per the SEPA Instant Credit Transfer (SCT Inst) Rulebook, the "EPC payment schemes are open to eligible payment service providers (PSPs) regardless of their status as "credit institutions", "payment institutions", "electronic money institutions" or other eligible types of institution."[21] As such, the SEPA Instant Credit Transfer (SCT Inst) scheme had the potential to boost competition between banks and non-bank PSPs, creating benefits for consumers that would, eventually, have access to competitive services driven by technological innovation.[22]

In many respects, the SEPA Instant Credit Transfer (SCT Inst) scheme represented a missed opportunity. Whilst the SEPA Instant Credit Transfer (SCT Inst) scheme was available for use by all EU-based PSPs, participation in it was (and remined, at the time of writing) merely voluntary.[23] Thus, the effectiveness of the SEPA Instant Credit Transfer (SCT Inst) scheme relied (and continues to rely) on the individual willingness of a particular PSP to comply with the Rulebook as the basis for the provision of instant payments services to its customers.[24] Since the launch of the SEPA Instant Credit Transfer scheme in 2017, PSPs have been reluctant to connect and provide instant payments to their users. Overall, the level of adherence has been far below expectations.[25] As a consequence, the total number and volume of instant

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[21] See SEPA Credit Transfer Scheme Rulebook, version 1.3., p 7.

[22] HARTMANN, HERNANDEZ-VAN GIJSEL et. al., *Are instant payments becoming the new normal? A comparative study*, ECB Occasional Paper Series No 229, 2019, p. 4.

[23] SANTAMARÍA, Opinion piece SEPA Instant Credit Transfer: Where are we now and where are we heading? Belgium Journal of Payments Strategy & Systems Volume 14 Number 2, 2020. See more CANALINI, *Il Fintech e le nuove frontiere dell`innovazione finanziaria*, p. 306, Capitolo 10 in CAPRGLIONE, Manuale di diritto Bancario e Finanziario.

[24] See SANTAMARÍA, *Opportunities and challenges for the SEPA Instant Credit Transfer Scheme*, Journal of Payments Strategy & Systems, Volume 11, Number 3, 2017, p. 196.

[25] In 2020, only 62,4% of all EU payment service providers offering SEPA credit transfers had joined the SEPA Credit Transfer Inst. Scheme. See European Commission, 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, 24 September 2020.

payments remains low[26], with the different levels of instant payment accessibility across the different EU Member States[27] intensifying the fragmentation of the Single Market for retail payments.

3. To address the above shortcomings, the European Commission put forward the EU's Retail Payments Strategy.[28] The EU's Retail Payments Strategy emphasized the following intertwined objectives: (i) promoting the widespread use of instant payments, (ii) enhancing the regulatory framework of non-bank PSPs, i.e., e-money institutions (EMIs) and payment institutions (PIs), and (iii) fostering competition between bank and non-bank PSPs in the retail payments sector. Pursuant to the EU's Retail Payments Strategy, offering the services of sending and receiving instant payments by all PSPs should become a prevailing standard in the retail landscape.[29] By elevating instant payments to the new standard, the EU's Retail Payments Strategy seeks to place at the disposal of consumers a payment method that is both fast and expedient. With this in mind, instant payments have the potential to gain a substantial share of the consumer demand for retail payments.[30] The EU's Retail Payments Strategy also recognised that the intended changes in the retail payments landscape

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[26] For instance, in the euro-area during the second half of 2022, instant credit transfers comprised 12% of the total number and 4% of the total value of credit transfer transactions. See ECB, *Payments' statistics: first half and second half of 2022*, Press Release, 9 November 2023.

[27] For instance, as of March 2021, PSPs from 21 EU member states joined the SEPA Instant Credit Transfer (SCT Inst) scheme. Estonia is the only EU country where over 50 % of electronic payments are instant payments, contrasted with several countries where the adoption of instant payments is minimal. See more European Commission, Consultation document, Targeted Consultation on Instant Payments, 24 March 2021, available at https://finance.ec.europa.eu/regulation-and-supervision/consultations/2021-instant-payments_en; PÉREZ and DE GROEN, Meeting Report from the discussion held during the European Credit Research Institute (ECRI) at the Centre for European Policy Studies conference on 'How to unlock the potential for instant payments?', available at: www.ecri.eu/sites/default/files/how_to_unlock_the_potential_for_instant_payments_event_report.pdf.

[28] 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.

[29] Ibid., Pillar 1: Increasingly digital and instant payment solutions with pan-European reach.

[30] SANTAMARÍA, *SEPA Instant Credit Transfer: Where are we now and where are we heading? Belgium Journal of Payments Strategy & Systems*, Volume 14 Number 2, 2020.

call for the establishment of a regulatory framework governing access to payment systems for non-bank PSPs (EMIs and PIs) and guaranteeing a level-playing field between non-bank and bank PSPs.[31]

Two years following the publication of the EU's Retail Payments Strategy, efforts have been directed towards realising its declared objectives. Central to this endeavour was the inaugural legislative proposal for the Instant Payment Regulation, introduced by the European Commission in October 2022 (the 'Commission Proposal').[32] The Commission Proposal incorporated, inter alia, amendments to Regulation (EU) No 260/2012 ('SEPA Regulation').[33] The proposed amendments to the SEPA Regulation aimed at making *mandatory* the provision of the payment services of sending and receiving instant credit transfers, but only for PSPs that were already providing regular credit transfers to their clients (i.e., banks).[34] EMIs and PIs were excluded from that requirement. The rationale behind this exclusion was the concern that imposing such a requirement on EMIs and PIs would be disproportionate, as they are still largely ineligible for participation in settlement systems necessary for the execution of instant payments.[35] The Commission Proposal thus fell short of establishing parity between bank and non-bank PSPs.

The lack of ambition in establishing parity between bank and non-bank PSPs in the field of instant payments was ultimately rectified in the compromise text of the Instant Payments Regulation adopted after the Trilogues (the 'Final Proposal').[36] Under

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[31] Op. cit. 21, Pillar 3: Efficient and interoperable retail payment systems and other support infrastructures.

[32] Proposal for a Regulation of the European Parliament and of the Council amending Regulations (EU) No 260/2012 and (EU) 2021/1230 as regards instant credit transfers in euro, 26 October 2022, COM (2022) 546 final.

[33] Regulation (EU) No 260/2012 of the European Parliament and of the Council of 14 March 2012 establishing technical and business requirements for credit transfers and direct debits in euro and amending Regulation (EC) No 924/2009 [2012] OJ L 94.

[34] Commission's Proposal, Article 1(2).

[35] Ibid., Recital 9.

[36] Proposal for a Regulation of the European Parliament and of the Council amending Regulations (EU) No 260/2012 and (EU) 2021/1230 and Directives 98/26/EC and (EU) 2015/2366 as regards instant credit transfers in euro, Interinstitutional File: 2022/0341 (COD) Brussels, 28 November 2023.

the Final Proposal, offering the payment services of sending and receiving instant payments is to also be made mandatory for EMIs and PIs.[37] To achieve this, the EU co-legislators opted to broaden the scope of their legislative action by including amendments to Directive 98/26/EC on settlement finality ('SFD'). The proposed amendments to the SFD aim at qualifying, for the first time, EMIs, and PIs as eligible participants in SFD-designated settlement systems.[38] What this entails is that EMIs and PIs will become eligible to participate in settlement systems in central bank money, operated by central banks.

As per the EU Retail Payments Strategy, "the Commission is aware that some national central banks have allowed payment and e-money institutions direct or indirect participation, subject to certain criteria. This has led to level playing field issues and further fragmented the payments market. As indirect access is the only option in systems like the TARGET Instant Payment System, it can create unintended effects and operational challenges (…). In turn, this may distort the level playing field between banks and non-bank payment service providers." Furthermore, the explanatory memorandum accompanying the Commission Proposal states that, "(…) payment institutions and electronic money institutions are not covered since currently, under the … SFD, they cannot participate in settlement systems designated under that Directive, which includes many EU settlement systems widely used for credit transfers and IPs. This may be reconsidered in light of future amendments to SFD after it is reviewed."

One way to read the above statements is as an indication that, in the Commission's view, the extension of SFD protection to EMIs and PIs would suffice for their participation in SFD designated systems such as TARGET. The remainder of this paper explores the extent to which this assumption is warranted as far as participation

[37] Final Proposal, Article 1(2).
[38] Ibid., Article 4.

in TARGET is concerned. Our analysis is preceded by a brief overview, in paragraph 4, of the evolution of EMIs and PIs, followed by an explanation of the importance of participating in SFD-designated systems for settlement purposes.

4. EMIs are specialised, non-bank financial institutions, which have been granted an authorisation to issue and redeem e-money.[39] EMIs came into existence in 2000, following the adoption of the Electronic-Money Institutions Directive ('EMD')[40] and, originally, they qualified as credit institutions.[41] EMIs have, since, evolved significantly, undergoing a transformation both in terms of their legal nature and of services they provide. Following the adoption, in 2009, of the EMD2[42], EMIs no longer qualified, legally, as credit institutions. Moreover, for the purposes of the Payment Services Directive ('PSD')[43], they were recognised as PSPs that, in addition to issuing and redeeming e-money, can offer other payment services set out in the PSD including, but not limited to, facilitating credit transfers and direct debits.[44] Technological innovations have been an important catalyst in driving the evolution of EMIs. The more recent PSD2[45] expanded the scope of the initially enacted payment services, thereby empowering EMIs to provide specific fintech-oriented payment services[46], while the

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[39] Article 2(1) Directive 2009/110/EC.
[40] Directive 2000/28/EC of the European Parliament and of the Council of 18 September 2000 amending Directive 2000/12/EC relating to the taking up and pursuit of the business of credit institutions [2000] OJ L 275.
[41] Article 1 EMD 1.
[42] Directive 2009/110/EC of the European Parliament and of the Council of 16 September 2009 on the taking up, pursuit and prudential supervision of the business of electronic money institutions amending Directives 2005/60/EC and 2006/48/EC and repealing Directive 2000/46/EC [2009] OJ L 267.
[43] Directive 2007/64/EC of the European Parliament and of the Council of 13 November 2007 on payment services in the internal market amending Directives 97/7/EC, 2002/65/EC, 2005/60/EC and 2006/48/EC and repealing Directive 97/5/EC [2007] OJ L319/1.
[44] Articles 2 and 4(b) PSD.
[45] Directive (EU) 2015/2366 of the European Parliament and of the Council of 25 November 2015 on payment services in the internal market, amending Directives 2002/65/EC, 2009/110/EC and 2013/36/EU and Regulation (EU) No 1093/2010, and repealing Directive 2007/64/EC [2015] OJ L 337.
[46] The scope of payment services in PSD 2 was expanded to payment initiation services and account information services (Annex 1 PSD2).

recent Regulation (EU) 2023/1114 on markets in crypto-assets (MICA)[47] also enabled EMIs to issue e-money tokens[48].

Like EMIs, PIs are financial institutions established as an alternative to traditional banking. The regulatory landscape for PIs was originally laid down in the PSD, which recognised them as a type of PSP (together with EMIs). In particular, the PSD defined PIs as legal entities authorised to render the comprehensive array of payment services enumerated in it.[49] Consequently, PIs were vested with the authorisation to provide all payment services that EMIs can offer; however, unlike the latter, PIs were precluded from issuing and redeeming e-money.[50] Mirroring the developmental trajectory of EMIs, the scope of PIs' business domain expanded under the PSD2, following the proliferation of technological innovations.[51]

As PSPs, both EMIs and PIs are allowed to offer the services of sending and receiving instant payments under the SEPA Instant Credit Transfer (SCT Inst) scheme.[52] However, their potential to provide instant payments was, at the time of writing, significantly restricted, as these institutions could not participate in SFD-designated settlement systems. In general, in the field of payments, settlement systems are to be understood as any set of institutions, rules, procedures, and technical infrastructures, aimed at enabling the efficient transfer of funds between payor and payee and settling their reciprocal financial obligations. The significance of settlement systems 'designated' under the SFD lies in the fact that they provide legal certainty and protection against the risk of insolvency or default of a participant. By being

[47] Regulation (EU) 2023/1114 of the European Parliament and of the Council of 31 May 2023 on markets in crypto-assets and amending Regulations (EU) No 1093/2010 and (EU) No 1095/2010 and Directives 2013/36/EU and (EU) 2019/1937 [2023] OJ L 150.
[48] Article 48(1) MICA.
[49] Article 4, point 4 PSD.
[50] Recital 9 PSD.
[51] The fact that they are already governed under strongly aligned EU legislation prompted legislative initiative aimed at consolidating regulatory framework governing both entities under a unified legal instrument, notably envisioned as the forthcoming PSD3. Under the proposed PSD3, EMIs are anticipated to be integrated as a subset of PIs.
[52] See: European Payment Council, SEPA Instant Credit Transfer Scheme Rulebook, 2023, p 7.

'designated' under the SFD, these systems guarantee that the settlement of transfer orders entered into them is final and irrevocable from the moment they enter the relevant system, and that insolvency proceedings opened against any of its participants or its operator cannot unwind settlement.[53] Moreover, while enabling the processing of substantial transaction volumes, 'designated' systems impose strict risk management measures to their participants to avoid any threat to overall stability and security.[54] Hence, settlement systems that are 'designated' under the SFD are without doubt critical components of the EU financial markets infrastructure.

Currently, the SFD limits participation in 'designated' systems only to certain types of entities (most notably, credit institutions), excluding EMIs and PIs.[55] Hence, under the current regime, EMIs and PIs can only participate in systems that are not designated under the SFD. As a result, they and their participants are exposed to greater counterparty risks, uncertainty regarding settlement finality, and potential disruptions in the event of an insolvency or a default. Moreover, their customers may be more reluctant to engage in transactions on account of the higher costs associated with managing the associated risks.[56]

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[53] VEREECKEN and NIJENHUIS, eds., *Settlement Finality in the European Union: The EU directive and its implementation in selected jurisdictions*, Law of Business and Finance, Volume 3, Kluwer Legal Publisher, 2003, p 14-15.

[54] Ibid., p 31-33.

[55] Article 2(b) SFD. This provision, however, provides exception to the rule, allowing Member States to decide that non-eligible institutions (responsible for discharging the financial obligations arising from transfer orders within the system), can be considered eligible institutions, provided that at least three participants of this system are covered by the categories of the eligible institutions and providing that such a decision is warranted on grounds of systemic risk. To date, only Hungary and Lithuania allow EMIs and PIs to directly participate in their 'designated' systems. See more European Fintech Association, Joint industry letter on amending the Settlement Finality Directive alongside the implementation of the SCT Inst legislation– request to the Commission to create a true level playing field for all actors in the field of payments, 1 February 2023, available at: https://eufintechs.com/joint-industry-letter-on-amending-the-settle-finality-directive-sfd/.

[56] There could be numerous reasons why EMIs and PIs have not been yet included among the eligible institutions to participate in systems 'designated' under the SFD. For instance, in comparison to credit institutions, the regulatory requirements for EMIs and PIs are still less strict. This is primarily due to disparities in their operational structures and associated risk assessments. Namely, unlike credit institutions, EMIs and PIs are not involved in the deposit-taking and lending, which are perceived as a higher-risk endeavours. Moreover, given their smaller scale of operation, EMIs and PIs possess

The Instant Payments Regulation has the potential to encourage a major shift in the instant payments landscape. By imposing upon EMIs and PIs the same obligation to offer the service of receiving and sending instant payments as in the case of credit institutions, and by recognizing those institutions as eligible participants in SFD-designated systems, the Instant Payments Regulation aims at ensuring a level playing field between all PSPs and, consequently, fostering competition within the retail payments market.

However, as explained below, the Instant Payments Regulation does not, in and of itself, suffice to achieve the objective of boosting instant payments through the involvement in them of EMIs and PIs: more is needed to ensure the achievement of this objective.

5. One may be forgiven for assuming that the adoption of the Instant Payments Regulation would automatically render EMIs and PIs eligible to participate in all SFD-designated EU systems. However, this is not true of TARGET ('Trans-European Automated Real-Time Gross ross Settlement Express Transfer). Owned and operated by Eurosystem central banks[57], TARGET is legally structured as a multiplicity of payment systems composed of TARGET component systems, each of which is designated as a 'system' under the relevant national law implementing the SFD. [58] As a designated payment system, both TARGET and its participants enjoy SFD

diminished systemic significance compared to credit institutions, prompting regulators to apply regulatory requirements proportionate to their risk profiles.

[57] Each Eurosystem national central bank operates its own TARGET national component which allows each of them to retain control over their local-based settlement processes. Apart from national banks of the member states whose currency is the euro, ECB itself operates its own TARGET-ECB component system accessible, according to Article 4 of ECB's Decision (EU) 2022/911 concerning the terms and conditions of TARGET-ECB, to entities managing ancillary systems (including entities established outside the European Economic Area) and acting in that capacity, whose access to TARGET-ECB has been approved by the ECB's Governing Council.

[58] Article 3 of the Guideline (EU) 2022/912 of the European Central Bank of 24 February 2022 on a new-generation Trans-European Automated Real-time Gross Settlement Express Transfer system (TARGET) and repealing Guideline ECB/2012/27 (ECB/2022/8) (OJ L 163, 17.6.2022, p. 84–185).

protection.[59] TARGET represents the most prominent interbank funds transfer system in the EU.[60] Although it has undergone extensive operational and functional changes[61], its dual purpose has remained unchanged since its inception: (i) facilitate the implementation of Eurosystem monetary policy,[62] and (ii) establish a secure and reliable system for settling euro payments, thereby enhancing the efficiency of the intra-EU cross-border transactions[63].

Settlement in central bank money is the crucial benefit of TARGET, as it prevents the occurrence of credit risk that may materialise when settling in commercial bank money.[64] Settlement in central bank money takes place through a participant's accounts opened and held with the central bank, as system operator,[65] with the payment obligation being discharged by providing the payee with a claim on the central bank. In contrast, when settling in commercial bank money, payment obligations are fulfilled by granting system participants claims on a commercial bank

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[59] *Supra,* p 8.

[60] In 2022, TARGET processed around EUR 2.2. trillion each day, with a yearly turnover of EUR 570.5 trillion. To illustrate the significance of the volume of transactions processed via TARGET, it should be stressed that the EU GDP in 2022 amounted to only EUR 15.8 trillion which is less than 3% of annual TARGET turnover. See ECB, *TARGET Annual Report 2022*, ECB website, 2023.

[61] TARGET became operational on 4 January 1999, shortly after introducing euro as a single currency. It replaced private correspondent banking model with a public payment infrastructure under the auspices of the Eurosystem. Once it was launched, TARGET consisted of network of various payment systems in the euro-area (first generation of TARGET system). As of 2007, it started to function as a uniform TARGET2-System (second generation of TARGET system) governed under harmonised ruled of the TARGET Guideline. The Eurosystem launched TARGET2-Securities-System for settlements of security transactions in 2015, and TIPS for the purpose of executing instant payment settlement in 2018. Finally, in 2023, the Eurosystem consolidated TARGET2 and Target2-Securities System (third generation of TARGET system) to enhance synergy and cost-effectiveness, to leverage economies of scale and bolster cyber resilience for both services. See SIEKMANN, Ed., *The European Monetary Union, A Commentary on the Legal Foundation*, p. 283-284, 1050-1051; MURAU and GIORDANO, *European Monetary Unification through Novation: The Political Economy of the TARGET System*, Conference paper prepared for the 26th Conference of the Forum for Macroeconomics and Macroeconomic Policies (FMM) in Berlin, 20-22 October 2022, p. 16.

[62] Implementation of Eurosystem's monetary policy depends on efficient payment systems which ensure provision of liquidity on the money market. See SIEKMANN, op.cit. 63, p. 283.

[63] See ECB, Monthly bulletin, ECB website, 1999.

[64] See more VAN DEN BERGH and VEALE, *Payment System Risk and Risk Management*, in SUMMERS, ed., *The Payment System Design, Management, and Supervision*, 1994.

[65] BINDSEIL and PANTELOPOULOS, *Introduction to Payments and Financial Market Infrastructures*, p. 6., Springer, 2023.

(a non-insolvency remote entity). The setup in which settlement is executed via central bank money eliminates the participants' exposure to credit risk vis-à-vis the operator, since central banks, unlike commercial banks, cannot default.[66]

The entities that are eligible to access TARGET and the requirements they need to fulfil are set out in ECB Guideline (ECB/2022/8) (the 'TARGET Guideline').[67] Currently, only a limited number of entities are eligible for direct access to TARGET accounts. These entities primarily include credit institutions and central banks.[68] Apart from TARGET participants, the TARGET Guideline allows indirect participation in TARGET[69] for 'addressable BIC holders' and 'reachable parties', who rely on a TARGET participant to execute payments on their behalf. Both 'addressable BIC holders' and 'reachable parties' are customers of a TARGET participant and, under the contractual arrangement between them and that participant, they can use that participant's account(s) for the settlement of large value payments (as addressable BIC holders) or for instant payments (as reachable parties).[70]

EMIs and PIs were not eligible, at the time of writing, to become TARGET participants. These institutions can only have indirect access to TARGET under arrangements with TARGET participants (most notably credit institutions), using their accounts in TARGET for processing payments. Their non-participation in TARGET is an obvious impediment, considering that, when it comes to the provision of instant payment services, EMIs, PIs and credit institutions operate in the same market. The existence of a requirement for EMIs and PIs to establish, for settlement purposes, correspondent arrangements with TARGET participants, gives credit institutions a

[66] ATHANASSIOU, *Payment systems*, in AMTENBRINK et al., eds., *The EU Law of Economic and Monetary Union*, p. 712.
[67] TARGET Guideline, Articles 4 and 5.
[68] Ibid., Article 4.
[69] Reasons for indirect participation in payment system may include, e.g., not fulfilling all admissibility criteria to access payment system or direct participation may be too expensive. See VEREECKEN and NIJENHUIS, eds., *Settlement Finality in the European Union*: *The EU directive and its implementation in selected jurisdictions*, Law of Business and Finance, Volume 3, Kluwer Legal Publisher, 2003, p. 20.
[70] Points (2) and (51) Annex III TARGET Guideline.

comparative advantage and a considerable degree of autonomy in determining the extent to which and the conditions subject to which they may offer their correspondent services to EMIs and PIs. This autonomy allows credit institutions to exercise discretion whether to allow EMIs and PIs to settle instant payments via accounts with them but also to set transaction-based fees that may exceed wholesale costs. The status quo also affords credit institutions valuable insights into the business of EMIs and PIs, with a potential impact on their strategic decisions and competitive positioning within the payment market.

Although the Instant Payments Regulation will make EMIs and PIs eligible to directly participate in SFD-designated systems, the Eurosystem, as TARGET operator, is not bound to automatically allow EMIs and PIs access to TARGET. This is because, as explained below, the Eurosystem enjoys discretion in determining the eligibility criteria for TARGET, taking into account risk-related and other, relevant considerations.

Indeed, the Eurosystem has full discretion to regulate the access criteria for TARGET. As confirmed by the EU General Court[71], this competence stems from the task entrusted to the Eurosystem by the Treaty on Functioning of the European Union ('TFEU') to promote the smooth operation of payment systems by providing facilities and making regulations.[72] In pursuit of this task, the Eurosystem enjoys wide discretion, which stems from the principle of central bank independence, enshrined in Article 130 of the TFEU and in its corresponding provision in the ECB Statute (Article 7). Pursuant to the principle of central bank independence, neither the ECB nor the national central banks may lawfully seek or take instructions from any political

[71] United Kingdom of Great Britain and Northern Ireland v European Central Bank (ECB), T-496/11, 4 March 2015, ECLI:EU:T:2015:133

[72] Article 3(1) indent 4 and Article 22 ECB's Statute. This means that the Eurosystem is entitled to manage and oversee payment systems to guarantee their transparency and risk mitigation but also to operate the payment system and provide system's services while creating autonomously its legal framework. See more SIEKMANN, op. cit. 63, p 283 and 1041.

institution, body or government. This principle represents a key feature of the Eurosystem's constitutional architecture and a core safeguard of its autonomy in exercising its tasks.[73] Hence, the Eurosystem, i.e., the ECB Governing Council as its decision-making body, can freely decide which entities will have access to TARGET and what requirements they must fulfil to effectively join TARGET and make use of its services. However, the discretion of the Governing Council is not absolute: it is, amongst others, counterbalanced by requirements set out in Regulation (EU) No 795/2014 on oversight requirements for systemically important payment systems ('SIPS Regulation'),[74] which also applies to TARGET. According to the SIPS Regulation, any access restrictions to payment systems, including TARGET, must be non-discriminatory, proportionate and justified in terms of safety and efficiency.[75] Thus, in deciding whether to allow EMIs and PIs to access TARGET, the ECB's Governing Council should carefully consider and weigh all material considerations, including reasons of public policy and risk management.

One of the relevant considerations (even if not the decisive one) for deciding to allow EMIs and PIs access to TARGET is the application of the EU law principle of consistency, enshrined in Article 7 TFEU. The consistency principle is a constitutional, horizontal clause applicable to all EU institutions and bodies, including the ECB, that requires them to ensure consistency between all their policies and activities. Bearing this in mind, it could be argued that the Eurosystem should take into account, in determining its TARGET access policy, the aims and objectives of the Instant Payments Regulation (most notably, to ensure level playing field between banks and non-banks

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[73] See more FROMAGE, DERMINE et. al., ECB independence and accountability today: *Towards a (necessary) redefinition?* Maastricht Journal of European and Comparative Law 2019, Vol. 26(1) 3–16, pp. 9-13.; RANDZIO-PLATH and PADOA-SCHIOPPA, *The European Central Bank: Independence and accountability*, ZEI Working Paper, No. B 16-2000, Rheinische Friedrich-Wilhelms-Universität Bonn, Zentrum für Europäische Integrationsforschung (ZEI), Bonn, pp. 26-28.

[74] Regulation of the European Central Bank (EU) No 795/2014 of 3 July 2014 on oversight requirements for systemically important payment systems (ECB/2014/28) OJ L 217, 23.7.2014, p. 16–30.

[75] Article 16 SIPS Regulation.

PSPs in the provision of instant payments) and amend, if it so decides, the TARGET Guideline eligibility criteria to eventually allow EMIs and PIs to access TARGET.

The proposed extension under the Instant Payments Regulation of SFD protection to EMIs and PIs would obviously count amongst the consideration that would weigh upon an eventual decision by the ECB Governing Council to amend the TARGET eligibility criteria. As TARGET is an SFD-designated payment system, all TARGET participants must enjoy SFD protection so that the SFD designation of TARGET does not suffer. Currently, all institutions eligible to participate in SFD-designated payment systems are also eligible to participate in TARGET under the TARGET Guideline. It could be argued that the EU legislator's decision to broaden the list of SFD-protected institutions should logically lead to the Governing Council to also reflect on possible adjustments to its access policy for TARGET.

However, the ultimate authority over the TARGET Guideline rests with the Governing Council.[76] In this regard, risk-related and other material considerations are bound to play a decisive role on the exercise, by the Governing Council, of its discretion to amend the TARGET access policy and the eligibility criteria for participation in it. As operator of TARGET, the Eurosystem is obliged to observe all the risks that could adversely affect it, including those stemming from the potential participation in it of EMIs and PIs. It is, for instance, the case that EMIs and PIs are not subject to the same level of regulatory supervision as credit institutions. The comparatively lighter regulatory (and oversight) regime to which EMIs and PIs are subject could raise legitimate concerns from the Governing Council regarding the risks that they may pose to TARGET, and the new source of vulnerability that their participation in it may represent. Besides, SFD designation does not eliminate all risks stemming from

[76] According to Article 12(1) of the Statute of the ESCB and of the ECB, the Governing Council is solely authorised to adopt the guidelines and take the decisions necessary to ensure the performance of the tasks entrusted to the ESCB under the TFEU and the Statute. As per the Annex III of the TARGET Guideline, the Governing Council, referred to as the Level 1 body, holds ultimate authority in relation to all TARGET issues, in particular to the rules for the decision-making in TARGET.

potential new participants in TARGET. It is not without interest in this regards that, although under the original EMD, EMIs legally qualified as credit institutions[77] and, therefore, were eligible to directly participate in SFD-designated systems, the TARGET Guideline, as it then was, explicitly excluded the possibility of their participation in TARGET.[78]

6. The EU legislator's initiative to extend the benefit of SFD protection to EMIs and PIs is to be welcomed as a step in the direction of further harmonisation and integration of the Single Market for retail payments. EU consumers of retail payments, including instant payments, can reasonably expect to reap the benefits of enhanced competition for the provision of everyday payment services. Central to the ability of EMIs and PIs to offer instant payment services to their customers is their eligibility for participation in TARGET, Europe's largest real-time gross settlement system. For the reasons explained in this paper, the SFD designation of EMIs and PIs is a necessary but not sufficient condition for their recognition as participants in TARGET. The assumption made in the explanatory memorandum to the Commission Proposal on the Instant Payments Regulation that the SFD protection of EMIs and PIs would automatically pave the way for their participation in SFD designated systems such as TARGET disregards the discretion of the ECB Governing Council to determine its access policy and the requirements for participation in TARGET, factoring in the interests of the payments market and the safety and soundness of TARGET, as the large value payment for the single currency and an essential infrastructure for the delivery of Eurosystem monetary policy.

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[77] See more: ATHANASSIOU, *Electronic money institutions, current trends, regulatory issues and future prospects*, ECB, Legal working paper series No 7, July 2008.

[78] Article 4(3) Guideline of the European Central Bank of 26 April 2007 on a Trans-European Automated Real-time Gross settlement Express Transfer system (TARGET2) (ECB/2007/2).

MAJOR TECHNOLOGICAL TRANSITIONS: DEVELOPMENT OPPORTUNITIES AND RISKS FOR THE PUBLIC AND MANUFACTURING SECTORS

Ireneusz Żuchowski[*]- Nunzio Casalino[**]- Carlo Amendola[***]- Simone La Bella[****]- Dariusz Kańtoch[*****]- Gian Piero Joime[******]

ABSTRACT: *The Digital Transformation is enabling public and private organizations to become more innovative, flexible, and competitive. It is a change that owes its vitality not only to the well-known experiences of the managers involved, which are well documented in the literature, but also, and above all, in our opinion, to the culture of innovation of all workers. Therefore, in this scenario dominated by major technological transitions, which require a renewed and even more active commitment of the entire*

[*] Professor and Rector of the International Academy of Applied Sciences in Lomza, Lomza, Poland. He is editor-in-chief of the International Journal of Higher Economic-Social School in Ostroleka, WSES Scientific Studies.

[**] Professor of Organization Studies at Guglielmo Marconi University, Department of Economics and Business Sciences. He is also Director of the Master in Human Resources Management and Organization, at Guglielmo Marconi University, and Senior Expert of the Agenzia per l'Italia Digitale - Presidenza del Consiglio dei Ministri, Rome, Italy.

[***] Professor of Production Cycle Technology and Technologies for Industry 4.0 at the Faculty of Economics, Department of Management, Sapienza University of Rome. Director of the Master Integrated Quality Management, Environment and Safety, Department of Management, Faculty of Economics, Sapienza University of Rome. Evaluator of national and international scientific research projects.

[****] Professor of Public Finance and Comparative Tax Systems at Guglielmo Marconi University, Department of Economics and Business Sciences. He is also Professor of the Master in Business Administration at Guglielmo Marconi University.

[*****] Vice President at Polish-Greek Chamber of Commerce and Industry, CEO at KLS Partners Ltd. and CEO at V-Systems Ltd.

[******] Professor of Environmental Economics at Guglielmo Marconi University, Department of Economics and Business Sciences. He is a member of the Scientific Committee of Pomos, the sustainable mobility research hub of La Sapienza University of Rome. He is an expert partner and member of the scientific committee of the Foundation for Sustainable Development.

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workforce, human capital is and will increasingly be the main lever for the competitive development of companies and industrial districts: participation, as is already the case in many Italian manufacturing realities, in decision-making processes, collaboration in the construction of the quality of the organisation, of the company's products and of its entrepreneurial success. In this context, we try to understand the role of a new effective and joint legislative process for the introduction of the law on participation, and thus finally for the full implementation of article 46 of the Constitution: "With a view to the economic and social advancement of labour and in harmony with the needs of production, the Republic recognises the right of workers to participate, in the manner and within the limits established by law, in the management of undertakings". Training and financial investment are complementary and essential to ensure an effective and successful digital transformation of public administrations and industry, improving the efficiency, transparency and quality of services offered to citizens and businesses, while recovering production efficiency and margins. Digital transformation is revolutionising the world of work, especially in the public sector, and the world of human resources cannot be indifferent, considering that it is not just about technology, but also about cultural, creative, and organisational changes. For example, new technologies require the development of new skills, and it is thanks to these technologies that employees can be properly trained. The digital age has led to the emergence of new professions as analysts, communications and digital marketing specialists, and digital HR experts. The latter need to be aware of digital transformation trends and understand how virtual communication and digital networks work. Digital transformation has broadened the definition of human resources. The skills required have changed, and employees are a strategic success factor for organisations. HR departments need to understand and adapt to these changes and urgently focus on the professional development and growth of their organisation's employees. In summary, digital transformation is redefining the role of HR, requiring new skills, and opening new

opportunities. In both sectors, digital transformation requires a significant commitment from human resources to ensure success and maximise the benefits of digital initiatives. It is crucial for public and private organisations to fully understand the implications of this revolution and to prepare adequately for the future. Training, skills development and change management are the key to supporting and guiding employees through this transformation process.

SUMMARY: 1. Major technological transitions and development opportunities for the public and productive sectors – 2. Development opportunities and risks – 3. Innovative technology adoption projects in public administration – 4. The Italian strength of the district and the network: participation as a key success factor for industrial development – 5. The role of local authorities for the ecological and digital transition of industrial districts – 6. The role of training and investment in properly managing the digital transition – 7. Conclusions.

1. Digital transformation in both the public and manufacturing sectors has a significant impact on the organisation and dynamics of both sectors. Digital transformation is increasingly proving that it may require the reallocation of financial[1] and human resources to new priority areas, such as the development of digital services, ICT security and technological infrastructure.

The modern competitive standard of the international arena is conditioned by the principles, technological and cultural, of ecological transition and digital transition. Those companies and areas/countries that cannot keep up with innovation today will soon be faced with a technology gap that is difficult to overcome and will risk dropping out of the competitive system. In this dynamic competitive context, some historical weaknesses of the national economic system - e.g. the fragmentation of the supply

[1] Pellegrini M., Davola A., Casalino N., Bednar P. (2021), Striking a balance between profit, people welfare, and ecosystem health in the transition towards a sustainable financial system, Law and Economics Yearly Review Journal - LEYR, Queen Mary University, London, UK, vol. 10, part 2, pp. 295-324.

system, the relatively low investment in research and development, the scarcity of technology companies, the still insufficient endowment of infrastructure, bureaucratic inefficiencies - seem to constitute concrete risks for a possible industrial decline, and for a destiny subordinate to the predominant axes of economic development.

However, and on the other hand, it is precisely the new digital and ecological technologies, based on polycentric and networked architectures, that can logically adhere to the intrinsic characteristics of the traditional Italian industrial model, which is still rich in medium and small-sized enterprises connected in networks and industrial districts, and which have long been accustomed to responding to increasingly customised demand segments. The Italian industrial system, based on the strategy of differentiation, on the typical and artisanal product, can find, precisely thanks to digital networks, greater visibility in the global network, expanding the boundaries of outlet markets.

In fact, the digital transition has accelerated the substantial transformation of production models, outlining the transition from the economy of scale, i.e. from the cost advantages linked to the ability to produce large quantities of homogeneous goods, to the economy of customisation, based precisely on the characteristics already present for some time in the Italian model, widely described in the literature on industrial districts, i.e. network organisations, flexible production units, and the professionalisation of human resources. The environmental issue and the climate emergency also determine the concrete direction towards the transition from the waste economy to the circular economy, which pushes to develop new products and redefine services to the person and the community, expanding the offer of the Italian production system and repositioning peripheral areas as central, precisely for the protection and enhancement of natural heritages. In short, both the digital transition and the ecological transition, if conducted and well interpreted, do not seem at all foreign to the traditional Italian development model based on small and medium-sized

enterprises, on the strong identity of local products, on the propensity to innovation, and above all on community participation in the economic and social development of the territories.

Digital technologies and attention to aspects of environmental sustainability, which are at the basis of the current profound changes in production and consumption models, can therefore be factors of competitive renaissance for the national production system, which has long been based on the reticular architectures of industrial districts and the participative logics typical of small and medium-sized Italian enterprises. Today's major and rapid technological transitions are therefore not only an opportunity to increase the efficiency of production processes, but also have the potential to transform markets, and to accelerate and facilitate the competitive visibility of our products, both typical and post-industrial, of our production districts.

As far as the public sector is concerned, there are several major organisational impacts. Digital transformation requires a cultural change within public organisations, pushing towards a more customer-oriented mentality, innovation[2] and collaboration between different organisational units. In addition, public employees need to acquire new digital skills to effectively use new technologies and manage the digital services offered to citizens. This is requiring training and skills development programmes to ensure that staff are adequately prepared for change.

As far as the manufacturing sector is concerned, digital transformation[3] can influence the supply chain, pushing towards greater digitisation and integration between suppliers, partners, and customers. This can improve supply chain visibility, traceability, and efficiency. The adoption of digital technologies such as automation and the Internet of Things (IoT) can influence manufacturing processes, reducing

[2] Rogers E.M. (1993), Diffusion of Innovation, London, The Free Press.
[3] Savastano M., Amendola C., D'Ascenzo F. (2018), How digital transformation is reshaping the manufacturing industry value chain: The new digital manufacturing ecosystem applied to a case study from the food industry. In Lamboglia R. et al. Lecture Notes in Information Systems and Organisation. vol. 24, p. 127-142, Springer Heidelberg.

production time, costs and improving product quality. Manufacturing employees need to acquire new digital skills to use and manage new technologies within manufacturing operations[4].

In both areas, digital transformation requires an organisational approach geared towards change, flexibility, and innovation in order to exploit the full potential of digital technologies and improve efficiency, productivity and competitiveness[5].

2. Legislative initiatives related to digital HR transformation may vary from country to country and depend on the specific legislation and public policies adopted. However, there are some common trends and legislative initiatives that can be observed in different contexts. Some countries are introducing laws or regulations that require companies to invest in training and digital skills development of employees to ensure that they are adequately prepared for digital transformation. This may include allocating financial resources for training programmes and implementing tax incentives for companies that invest in training their employees.

Cyber security and data protection regulations will need to be strengthened or updated to ensure that public and private organisations adequately protect sensitive data and respect employee privacy during digital transformation[6]. This may include the introduction of specific requirements for the management of sensitive data and information and the application of penalties for cybersecurity breaches.

It is crucial to introduce guidelines to regulate the automation and robotization of production operations to ensure that workers are adequately protected during the digital transformation. This may include setting standards for the introduction of

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[4] Caroli M. (2021), Economia e Gestione Sostenibile delle Imprese, 1/Ed, Mc Graw Hill.

[5] Porter M.E. (1985), Competitive Advantage: Creating and Sustaining Superior Performance. The Free Press, New York.

[6] Baskerville R., Capriglione F., Casalino N. (2020), Impacts, challenges and trends of digital transformation in the banking sector, Law and Economics Yearly Review Journal - LEYR, Queen Mary University, London, UK, vol. 9, part 2, pp. 341-362.

automated technologies, implementing retraining programmes for workers affected by automation, and protecting workers' rights in the context of robotization.

Major technological transitions, such as the advent of artificial intelligence (AI), the Internet of Things (IoT), advanced robotics and digital technologies, present both opportunities and risks for both public administration and production systems. They offer many opportunities for development, but also entail risks that need to be carefully managed. In the following, both aspects are outlined more specifically, highlighting the great opportunities but also the considerable risks.

Regarding development opportunities: new technologies allow for greater automation of processes, reducing operational time and costs for both public administration and businesses. Digitalisation makes it possible to offer better and more efficient services to citizens, improving the accessibility and quality of public and private services.

The aspect of competitiveness is also important. Companies that adopt new technologies can become more competitive globally, expanding their markets and generating more revenue. Emerging technologies pave the way for new economic sectors and job opportunities, such as artificial intelligence, robotics, biotechnology, and renewable energy. One aspect to consider is also public participation: technology can facilitate citizens' participation in democratic life through e-government tools and online consultation platforms. Technological innovations open up new markets and enable the creation of new products and services, stimulating economic growth. In addition, advanced technologies can improve public services, such as health, education and transport, making service delivery more efficient and improving the citizen experience.

Also important is the employment growth aspect; although some tasks may be automated, new job opportunities are created in the development and management

of new technologies. Finally, with regard to environmental sustainability, emerging technologies offer solutions to environmental challenges such as climate change and resource management.

Unfortunately, however, many risks also remain. Not everyone has access to new technologies or the necessary skills to use them, creating digital divides that can exclude entire communities. Moreover, unequal access to new technologies can accentuate socioeconomic inequalities, excluding marginalised groups from economic and social participation[7]. In terms of unemployment and inequality, automation can lead to job losses in some sectors, creating structural unemployment and increasing economic inequality.

The privacy and security aspect also becomes important. The widespread use of digital technologies can in fact jeopardise citizens' privacy and the security of sensitive data, if not managed properly, with possible harmful consequences for citizens and public institutions. Moreover, large technology companies are increasingly gaining enormous power over the market and society, influencing policies and decisions[8] in sometimes non-transparent ways.

From the point of view of organisations' know-how, over-dependence on technology may lead to a loss of control over critical systems, exposing public and production systems to greater risks. Finally, in terms of skills obsolescence, new technologies require specialised skills that may not be present in the current labour market, leading to a mismatch between skills demand and supply.

In order to maximise opportunities and mitigate risks, both public administration and production systems must therefore adopt targeted policies and

[7] Casalino N. (2014), Simulations and Collective Environments: New Boundaries of Inclusiveness for Organizations?, International Journal of Advances In Psychology (IJAP), Science and Engineering Publishing, USA, vol. 3, issue 4, pp. 103-110.
[8] Simon H.A. (1985), A formal theory of the employment relation, trad. it. Causalità, razionalità, organizzazione, Il Mulino.

strategies with the support of the legislator, but also of the many trade associations. These include investments in professional training to ensure that everyone can benefit from new technologies[9], effective regulations to protect the privacy and data security of workers, and incentives to promote sustainable innovation and digital accessibility for citizens and businesses.

3. Digital transformation initiatives in Italy have seen significant growth in recent years, positively influencing both the public and manufacturing sectors. Here are some key statistics:

- Public sector. Public administration has accelerated digital adoption, with more companies reporting digitisation initiatives in their sustainability reports. By 2022, more than 75 percent of companies have implemented at least one digital initiative, with an emphasis on staff training, smart working, and automation[10] .
- Manufacturing sector. Manufacturing companies have adopted digital technologies to optimise production processes and increase efficiency. 41.9 percent of enterprises with at least 10 employees have purchased mid- to high-end cloud computing services, exceeding the European average of 35 percent[11].

These statistics highlight in several cases Italy's commitment to digital transformation, with a significant impact on competitiveness and innovation in the country.

There are many examples of innovative technology adoption projects in public administration in Europe, but especially in Italy thanks also to the recent resources introduced with PNRR funds. Some significant areas of application follow:

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[9] D'Atri A., De Marco M., Casalino N., Interdisciplinary Aspects of Information Systems Studies. pp. 1-416, Physica-Verlag, Springer, Germany, 2008.

[10]See https://www.repubblica.it/economia/rapporti/energitalia/trasformazione/2024/01/24/news/transizione_ digitale_italia_al_top_in_europa_su_5g_pmi_e_cloud-421968226/

[11] https://www.istat.it/it/files/2022/01/REPORT-ICT-NELLE-IMPRESE_2021.pdf

– E-government and online services: many public administrations offer online services to simplify bureaucratic procedures and improve accessibility to public services[12]. For example, many government portals of European countries offer a wide range of online services, from applying for subsidies to paying taxes.

– Open data and transparency: many public administrations publish open data to foster transparency and innovation. For example, the dati.gov.it portal in Italy provides access to a wide range of public data that can be used by citizens, businesses, and developers to create new applications and services.

– Smart city and IoT: cities are increasingly exploiting Internet of Things (IoT) technologies to improve the efficiency of public services and the quality of life of citizens. For example, the city of Barcelona has implemented an extensive network of sensors to monitor traffic, air quality and other urban parameters in order to optimise city management. The same thing is being done in Italy in some large cities such as Milan, Florence, and Rome.

– Artificial intelligence for citizen assistance: some public administrations are experimenting with the use of artificial intelligence to improve citizen assistance. For example, the chatbot Amelia used by the UK Department of Home Affairs helps citizens find answers to frequently asked questions and navigate online public services.

– Blockchain for data security: some public administrations are exploring the use of blockchain technology to ensure data security and integrity. For example, Estonia has implemented blockchain technology to secure its online services, including its e-voting system.

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[12] Casalino N., Cavallari M., De Marco M., Ferrara M., Gatti M., Rossignoli C. (2015), Performance Management and Innovative Human Resource Training through Flexible Production Systems aimed at Enhancing the Competitiveness of SMEs, IJKM, IUP Journal of Knowledge Management, vol. XIII, No. 4, October 2015, pp. 29-42.

– Big data analysis for urban planning: public administrations are increasingly using big data analysis to improve urban planning and make evidence-based decisions. For example, the city of Paris uses big data analysis to monitor and predict crime patterns in order to optimise the allocation of law enforcement resources.

The Agency for Digital Italy (AgID)[13] is the Italian public body responsible for promoting and coordinating the digital transformation of the public administration.

AgID is playing a key role for the Italian economy, as it is responsible for promoting and coordinating digital transformation in Italy. It promotes the adoption of digital technologies among Italian businesses, encouraging innovation and competitiveness in the technology sector. This helps stimulate economic growth and create job opportunities in the field of information and communication technologies (ICT).

It is also involved in simplifying and digitising public services, making them more efficient, accessible, and user-friendly for citizens and businesses. This can reduce administrative costs and improve business productivity, thus contributing to overall economic growth.

Regarding the development of digital infrastructures, AgID promotes the development of digital infrastructures[14], such as broadband and high-speed communication networks, which are crucial to support the digital economy and enable businesses to adopt advanced technologies such as the Internet of Things (IoT) and

[13] See the strategic goals of the Agenzia per l'Italia Digitale - www.agid.gov.it

[14] Bertocchi E., Caroli M., Casalino N., Falà S., Giovannetti M., Infante K., Orsi A., Mariotti E., Massimi F., Manzo V., Pizzolo G., Sellitto G.P. (2022), Accelerating Transparency and Efficiency in the Public Procurement Sector for a Smarter Society: eNotification and ESPD Integration for Developing e-Procurement, in Howlett R., Jain L.C. (eds), "Smart Education and e-Learning 2022", vol., Smart Innovation, Systems and Technologies book series (SIST), vol., Springer, Singapore.

Industry 4.0[15]. AgID's promotion of digital transformation can create new job opportunities in the technology and digital sector, including software developers, cybersecurity experts, data scientists and ICT professionals.

With regard to improving the competitiveness of Italian enterprises, AgID supports Italian companies in adopting digital best practices and exploiting the opportunities offered by digital technologies. This can improve the competitiveness of Italian firms in national and international markets, contributing to the country's overall economic growth.

In summary, the Digital Italy Agency plays a key role in promoting the country's digital transformation and supporting economic growth through technological innovation, the digitisation of public services and the development of digital infrastructures.

In recent years, AgID has coordinated several projects to modernise and digitise Italian public services. Some of the main ongoing digital innovation projects include:

- SPID (Sistema Pubblico di Identità Digitale - Public Digital Identity System): AgID and the Department for Digital Transformation[16] are stimulating the dissemination of the Public Digital Identity System, which allows Italian (and soon to be European) citizens to securely access online services offered by public administrations and other private entities.
- Digital and Remote Signature: AgID is promoting the adoption of digital and remote signatures to enable businesses and citizens to sign documents securely and effectively online, eliminating the need for paper documents and handwritten signatures.

[15] Amendola C., Savastano M. (2022). Trasformazione digitale e Industria 4.0: analisi empirica sull'evoluzione delle imprese della GDO. Industrie Alimentari, anno 61, n. 633, aprile 2022, p. 5-21, Chiriotti editore – Pinerolo.
[16] See objectives and outcomes on https://innovazione.gov.it/

– Public Administration Cloud: AgID is promoting the adoption of cloud computing by Italian public administrations to improve efficiency and reduce operating costs, giving them access to flexible and scalable IT resources.

– Guidelines for Digital Transformation: AgID has developed a set of guidelines and supporting documents to assist Italian public administrations in planning and implementing digital transformation.

These are just a few examples of the projects and initiatives promoted by AgID to foster the digital transformation of Italy's public administration. AgID continues to play a key role in coordinating efforts to modernise Italian public services and improve the experience of citizens and businesses in interacting with the public administration.

It is therefore increasingly evident that the technology that is fortunately being adopted in public administration can increasingly improve the efficiency, transparency, and quality of public services[17].

4. It can be observed that the competitiveness in international markets of our products depends precisely on the ability to assert the identities of local products with respect to standards and the prevailing tendencies towards homogeneity[18]; it therefore depends both on historical and traditional industrial forces and on the ability to adapt to innovations in the supply system of our territories.[19] And it can be affirmed that many small and medium-sized Italian companies, also as a reaction to globalisation and standardisation, have already for some time, think of the Third Italy

[17] Casalino N., Saso T., Borin B., Massella E., Lancioni F. (2019), Digital Competences for Civil Servants and Digital Ecosystems for More Effective Working Processes in Public Organizations, Lecture Notes in Information Systems and Organization - Digital Business Transformation, Organizing, Managing and Controlling in the Information Age Springer, Heidelberg, Germany, vol. 38, pp. 315-326.

[18] Becattini G. (1987), Mercato e forze locali: il distretto industriale. Il Mulino Bologna.

[19] Joime G.P. (2015), Green Economy e sviluppo locale, Aracne Editrice.

and industrial districts model[20], undertaken the path of widespread innovation[21]; above all following a business organisation model that could be defined as Spontaneous Participation, given the crucial, and time-honoured, importance of human capital and the close informal relations between capital and labour[22].

Faced with the risk of marginalisation due to the technology gap, and the consequent competitive need to modernise local production capacities, several Italian production areas have reacted with, perhaps more natural than planned, a strategy of concentration of production forces and area specialisation, constituting what can be called Sustainable Districts, precisely because of their ability to integrate economy and environment[23]. Sustainable Districts are part of the deep-rooted concept of industrial districts as well as that of the "milieu innovateur"[24], founded on that set of intra-firm and territorial relations that are also qualified by the ability of all agents (companies, families, other institutions) to feel part of a certain local system, whose interest is recognised, distinct from that of each of its members, and that lead to a culture that generates a localised dynamic process of collective learning.

A participatory development model that can be observed in various contexts in our country - from fashion to agri-food, from machine tools to robotics, both within corporate organisations and externally, understood as widespread networks and nodes of social relations and hinged on the enhancement of human resources, traditions, culture, and local knowledge. The case of typical agri-food products is emblematic[25].

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[20] Fua' G. (1983), a cura di Industrializzazione senza fratture, Il Mulino, Bologna.

[21] Bagnasco A. (1977), Tre Italie. La problematica territoriale dello sviluppo italiano, Il Mulino, Bologna.

[22] Porter M. (1991), Il vantaggio competitivo delle nazioni, Mondadori, Milano.

[23] Joime G.P. (2022), I limiti dello Sviluppo Sostenibile, Partecipazione Eclettica Edizioni, Massa

[24] Camagni R. (1995), The concept of innovative milieu and its relevance for public policies in European lagging regions, Papers in regional Science, Wiley Blackwell, vol. 74(4), pages 317-340, October.

[25] Joime G.P., Righini S. (2022), Tradizione Ecologica, l'agroalimentare italiano e la sfida della sostenibilità. Eclettica Edizioni, Massa.

In fact, Italy is the world leader in the number of PDOs and PGIs: with 814 products, of which 291 food and 523 wine, it accounts for 10% of the total turnover of the national agri-food industry. Geographical Indications represent a key factor in the growth of Made in Italy in the world, with an export value equal to 21% of exports in the agri-food sector and a positive trend that is close to double digits with +9.6%. And they are a driving force for other economic activities in the area (handicrafts, tourism, etc.) to foster endogenous local development.

In the Italian context - low public investment in innovation, small company size, inefficient bureaucracy, scarce interaction with the academic world - the economic development of sectors and territories is strongly, and I would say traditionally, participative and relational: companies that follow the path of innovation are not able to take on the growing risks of structural change processes alone but must share them, first and foremost with the cultural and managerial participation of the company's human capital, and in parallel with other specialised companies, following the Italian tradition of small business networks and industrial districts. If "local development is based on the cooperation and strategy capacities of local actors to manage the constraints posed by globalisation and to seize its opportunities"[26], it is precisely this capacity that depends on the implementation of digital modernisation processes of production systems and on the participation of all levels of business organisation in entrepreneurial objectives. Managerial participation, geographical proximity and socio-cultural proximity determine a high probability of interaction and synergy between economic agents, repeated contracts tending towards informality, absence of opportunistic behaviour, high division of labour and cooperation within the milieu: what we call its relational capital, made up of an attitude to cooperation, trust, cohesion and a sense of belonging[27]. Sense of belonging and local pride are in fact

[26] Trigila S. (2005), Sviluppo locale. Un progetto per l'Italia, Laterza Bari.
[27] Camagni, R (1995), op.cit.

elements that strengthen cooperative propensities, both by creating 'safety nets' for individual firms in times of difficulty and by increasing the potential for local creativity. The participative and communitarian nature of Italian industrial networks and districts has largely contributed to enhancing the identity, quality, and culture of territories, and to giving a deep-rooted meaning to the concept of 'Made in Italy'.

The strengthening of the territorial community has thus in many cases been the natural response of local power to global competition and the turbulent phase of permanent change in the world economic system, which affects all the components of the value chain of territorial economic systems with no less than four regulatory systems - global, supranational, national, and regional - and with a constant compulsory rush of technological innovations.

That of territorial clusters of enterprises is a model of diffuse innovative capacity, which therefore presents all those forms of learning that derive from experience, from the practical knowledge of producers (learning by doing) and users (learning by using), or that derive from their relationships (learning by interacting). In the district, information circulates through often informal relationships between workers, suppliers, competitors, customers, relatives, friends, public administrators; economic actors confront the same problems, trying new ways, proposing incremental innovations, sharing failures and successes. The introduction of technological innovations within a district takes on a widespread and collective character, it is a social process involving companies and the local population[28] . And it naturally involves the company's internal structure, which is increasingly dependent on the informal ties of people who work not only as labour or resources, but as professionals with a high level of autonomy, a sort of micro-enterprise allied with the company[29], who participate in the competitive dynamics and who actually take part both in company

[28] Becattini G. (2000), Dal distretto industriale allo sviluppo locale, Bollati Boringhieri Torino
[29] Butera F. (2019), Progettazione del lavoro e partecipazione nella quarta rivoluzione industriale. Annali Feltrinelli Milano

management and in the dense system of interactions between the company and the territory.

5. The capacity for local governance of the ecological and digital transition process thus becomes decisive for sustainable development; indeed, it is essential that these initiatives be coordinated and carried out within a systemic and integrated, networked approach. The challenge is to succeed in integrating new enabling infrastructures and eco-technological sensors with existing structures on the territory, exploiting synergies and interoperability between systems, in order to provide value-added services for businesses and citizens, thus contributing to improving their quality of life and strengthening local productive and competitive capacities. The strengthening of the many national specialities accompanied by the modernisation process of the territories (biotechnologies, renewable sources, energy efficiency, electric mobility and cycling, circular economy) can have important repercussions on the renewal of the entrepreneurial spirit of the territories, which for too long have been marginalised with respect to centralised logics. It is a matter of strengthening traditional roots, rather than replacing them with exogenous models, through a permanent culture of innovation[30].

The many national production areas and districts could constitute Sustainable Communities, based on local production traditions integrated with global technological models. Local authorities, municipalities, and networks of municipalities, could constitute a community response to the challenge of ecological, digital transition and international competition, as empirically demonstrated by the development of the many Italian industrial districts as well as by the success of typical and local food and wine products, due to the presence of shared models of behaviour, mutual trust,

[30] Joime G.P. (2023), Per una via italiana alla transizione ecologica. in Pagine Libere, Edizioni Sindacali, Roma

common languages and representations and common moral and cognitive codes. Above all, by adapting the PNRR guidelines and funding to specific local realities. “Geographical proximity and socio-cultural proximity determine a high probability of interaction and synergy between economic agents, repeated contracts tending towards informality, absence of opportunistic behaviour, high division of labour and cooperation within the milieu: what we call its relational capital, made up of an attitude to cooperation, trust, cohesion and sense of belonging”[31] .

The quantity of services provided by municipal administrations largely depends on the possibility of enjoying the rights of citizenship provided for by the Constitution. Municipal administrations are also responsible for 46% of public sector investments, a figure that is even more significant now that the NRP entrusts them with a significant share of planned capital expenditure commitments (between 40 and 50 billion)[32] .

The role of local public institutions, if prepared for change, would therefore be decisive in directing the process of development and modernisation of the territory, in fostering the acquisition of innovations and the implementation of next-generation communication and energy network and system infrastructures, and thus in strengthening the competitive positioning of local typical products: for an ecological transition adapted to each individual territory.

But if the role of local authorities appears to be decisive for the achievement of sustainability - environmental, economic, and social - the ability of municipalities to meet their responsibilities in the provision of services and thus make a rapid impact on modernisation needs to be well assessed, it seems necessary to consider their limitations, noting the three long-standing critical issues, especially in the south part of Italy:

[31]Camagni R. (1993), Principi di economia urbana e territoriale, Carrocci.
[32] Viesti G. (2022), The municipalities and the challenge of the NRP, Eticaeconomia.

– staffing, which is shrinking sharply and is lower in quantity in the South (but in all municipalities staffing levels have fallen significantly in recent years (from 479,233 in 2007 to 348,036 in 2020)[33] due to a substantial freeze on turnover;

– investment realisation times, which are longer in the Mezzogiorno;

– the ability to deliver services, also downstream of the NRP investments.

"In particular, the turnover freeze has contributed to a significant increase in the average age of employees. Eighty percent of employees in southern municipalities in 2019 were over 50 years old, a significantly higher percentage than in the North (60 percent) .... Thus, there are very few young employees in the municipalities of the South. The limited turnover also helps to explain the very low proportion of university-educated staff in all Italian municipalities, but again particularly in the South. Thus, we come to the first conclusion: without a radical quantitative and qualitative strengthening of the staffing of municipalities, throughout Italy but especially in the South, many of them will hardly be able to perform their functions promptly and with quality... And here is the second conclusion: if the PNRR is to be implemented, and if it is to be done without significant territorial disparities, it is indispensable and urgent to support the procurement capacity of the municipalities, particularly in the South. The last conclusion of this note is then that without a decisive acceleration in the establishment of the Essential Levels of Performance and standard requirements and a full implementation of the mechanisms of the municipal solidarity fund, the weakest municipalities (in the South, but not only) will find it difficult to carry out their current and investment activities in the coming years and, moreover, the substantial

33 Marinuzzi and Tortorella, 'The PNRR for Italian municipalities, between opportunities and challenges', Comuni d'Italia, 9/2022.

investments envisaged by the PNRR will risk not being translated into new or better services for citizens”[34].

6. Digital transformation is having a major impact on human resources in both the public and manufacturing sectors. If we consider the public sector, public organisations need to invest in training and developing the digital skills of employees to ensure that they are able to effectively use new technologies and digital services offered to citizens. This may require training programmes tailored to the specific needs of employees and different organisational units. Digital transformation requires a cultural change within public organisations[35], pushing towards a more innovation, collaboration, and citizen-centred service mindset. This may require an openness to change and greater flexibility on the part of employees. Digital transformation can lead to the creation of new roles and responsibilities within public organisations, such as data specialists, cybersecurity experts, digital transformation managers and project managers for digital initiatives. Public organisations can promote collaboration and the creation of multidisciplinary teams to develop and implement digital projects. This can foster interaction between different departments and organisational units and promote an integrated approach to digital transformation.

Considering the manufacturing sector instead, digital transformation may require an increased focus on employee skills to use and manage new digital technologies within manufacturing operations. This may include training in robotics, automation, data analysis and 3D printing. Digital transformation can lead to new ways of working[36], such as remote working, virtual collaboration, and the use of digital tools

[34] Viesti G., op.cit.
[35] Casalino N., Armenia S., Di Nauta P. (2021), Inspiring the Organizational Change and Accelerating the Digital Transition in Public Sector by Systems Thinking and System Dynamics Approaches, in Uskov V.L., Howlett R.J., Jain L.C. (eds), “Smart Education and e-Learning 2021”, vol. Smart Innovation, Systems and Technologies book series (SIST), vol 240, Springer, Singapore, pp. 197-214.
[36] Amendola C., Casalino N., La Bella S., Savastano M. (2021), Innovazione dei processi lavorativi e ruolo degli artefatti nei modelli di cultura organizzativa: un’indagine empirica sulla trasformazione

to communicate and collaborate with colleagues and business partners. This may require greater flexibility on the part of employees and new company policies to support digital working. The automation and robotization of manufacturing operations may lead to a reduction in demand for labour in some areas, but at the same time may create new job opportunities for technology experts and machine maintenance. Employees in the manufacturing sector need to acquire new digital skills to use new technologies and digital tools within manufacturing operations[37]. This may require training and skills development programmes to ensure that staff are adequately prepared for the change.

Training and investment are two crucial elements to ensure the success of the digital transformation in the public sector. Here is the role of both:

Training:

– Digital skills development: training enables public administration employees to acquire the necessary skills to use new technologies and digital tools effectively. This includes training on specific software, digital platforms, IT security and data management.

– Cultural change: training can help promote a cultural change within public administration, pushing towards a digitally oriented, collaborative and innovative mindset. This can be achieved through awareness-raising and training programmes on the benefits of digital transformation.

– Digital leadership: training of managers and leaders within public administration is essential to ensure effective leadership during the digital

digitale della Pubblica Amministrazione, rivista ProspettiveinOrganizzazione, special issue Artefatti come Man in the Mirror?

[37] Casalino N., D'Atri A., Braccini A.M. (2012), A Management Training System on ISO Standards for Organisational Change in SMEs, International Journal of Productivity and Quality Management (IJPQM), Inderscience Publishers, USA, Vol.9 No. 1, pp. 25-45.

transformation process. This includes the development of change management skills, data-driven decision-making skills and agile leadership.

– Citizen participation: training does not only concern employees but can also extend to citizens to ensure that they are informed and able to use the digital services offered by the public administration effectively and safely.

Investments:

– Technology infrastructure: investments in technology infrastructure are crucial to support the digital transformation of public administration. This includes the purchase of hardware, software and cloud services, as well as the upgrading of existing networks and digital platforms in the organization.

– Cybersecurity: investments in cybersecurity are essential to protect sensitive data and ensure the security of public administration systems and digital infrastructure. This includes the implementation of advanced security measures, such as data encryption and protection from cyber threats.

– Innovation and research: investments in innovation and research can help public administration to stay abreast of the latest trends and technological developments. This includes collaboration with universities, research institutes and the private sector to develop innovative solutions and test new technologies.

– Training and development: investments in employee training and digital skills development are essential to ensure the success of digital transformation. These include the creation of tailor-made training programmes and the allocation of resources to support the continuous learning of employees.

Some European countries have also introduced laws or regulations to promote agile and flexible working, allowing employees to work remotely or use flexible working arrangements to adapt to the digital transformation. This may include establishing specific rules and rights for agile workers and creating regulatory frameworks to regulate remote working. Work-life balance laws can be strengthened or updated to ensure that employees have the right to a healthy work-life balance during digital transformation. However, this is requiring the definition of working time limits, the right to digital disconnection and support for flexible working policies.

7. Public organisations, as the private organizations, must become more agile and flexible in order to adapt quickly to technological changes and the needs of citizens and entrepreneurs. This may require cutting red tape and adopting more streamlined decision-making processes. Digital transformation[38] can foster greater collaboration and partnerships between government agencies, the private sector and civil society to develop and implement innovative digital solutions.

If it is therefore possible that the ability to compete in the context of international ecological transition, especially in a system such as Italy's that has always focused on productive specialisation and local identities as key success factors, can start from territorial specificities, the strengthening and modernisation of local public administrations are also essential fundamentals for outlining an Italian path to ecological transition.

Digital transformation can lead to the creation of smart factories, which use advanced technologies such as IoT, data analysis and robotics to create highly efficient and flexible production environments.

[38] Amendola C., La Bella S., Savastano M., Gennaro A. (2023). Digital transformation in banking: Un'analisi empirica delle attuali sfide e prospettive del settore bancario in Italia. Rivista Bancaria - Minerva Bancaria N. 1-2, p. 103-142, Editrice Minerva Bancaria srl.

Digitisation can enable manufacturers to offer customised and tailor-made products for customers, using technologies such as 3D printing and additive manufacturing.

It can be said that the development model of the Third Italy of districts and networks is still showing capacity for learning, adaptation to innovations and competitive flexibility. It is a model that bases its vitality not only on the well-known relations between companies, which have been amply documented in the literature, but also, and in our opinion above all, on the culture of participation of all workers in small and medium-sized enterprises in company management and in the introduction and adaptation of innovations.

Therefore, in this scenario dominated by major technological transitions, which impose a renewed and even more energetic active commitment of the entire workforce, human capital is, and increasingly will be, the main lever for the competitive development of enterprises and industrial districts: participating, as is already the case in many Italian manufacturing realities, in decision-making processes, collaborating in the construction of the quality of the organisation, of the enterprise's products, and of its entrepreneurial success.

In this context, one can only hope for a rapid and shared legislative process for the introduction of the law on participation and thus finally for the full implementation of Article 46 of the Constitution: 'For the purposes of the economic and social elevation of labour and in harmony with the needs of production, the Republic recognises the right of workers to collaborate, in the ways and within the limits established by law, in the management of companies'.

Training and financial investments are complementary and indispensable to ensure an effective and successful digital transformation of the public administration and industry, enabling on the one hand to improve the efficiency, transparency and

quality of services offered to citizens and businesses, and on the other hand to recover production efficiency and margins[39].

Digital transformation is revolutionising the world of work, and human resources is no different. It is not only about technology, but also about cultural, creative and organisational changes. These impact business organisations, for example new technologies are requiring the development of new competencies, and it is thanks to these technologies that employees can be properly trained.

The digital era has led to the emergence of new professional figures. These include analysts, communication and digital marketing specialists, and digital HR. The latter need to be up-to-date on digital transformation trends and understand how virtual communication and digital-networks work[40].

Digital transformation has broadened the definition of human resources. The skills required have changed, and employees represent a strategic success factor for companies. HR departments need to understand and adapt to these changes and urgently focus on the professional development and growth of their organisations' staff.

In summary, digital transformation is redefining the role of human resources, requiring new skills, and opening up new opportunities.

In both sectors, digital transformation requires a significant commitment in human resources to ensure success and maximise the benefits of digital initiatives. It is crucial for public and private organisations to fully understand the impact of this revolution and to adequately prepare for the future. Training, skills development and

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[39] Pellegrini M., Uskov V., Casalino N. (2020), Reimagining and re-designing the post-Covid-19 higher education organizations to address new challenges and responses for safe and effective teaching activities, Law and Economics Yearly Review Journal - LEYR, Queen Mary University, London, UK, vol. 9, part 1, pp. 219-248.

[40] Ahmand S., Schroeder R.G. (2013), The impact of human resource management practices on operational performance: recognizing country and industry differences, Published by Elsevier Ltd.

change management are key to supporting and mentoring employees during this transformation process.

NON-ECONOMIC VARIABLES RELATED TO ECONOMIC GROWTH

Arton Hajdari * - Shenaj Haxhimustafa**

ABSTRACT: *Economic growth is a common macroeconomic objective for countries all over the world, but not only economic variables are significant determinants for its sustainability; there might be other crucial non-economic variables significantly related to it as well, such as Absence of Corruption, Fragility of Human Rights and Rule of Law, Human Development, and Peace. Therefore, this research paper, through a quantitative scientific approach, aimed to examine the relationship between the respective non-economic variables and economic growth. The sample of the study was quite representative since it covered 151 countries around the world. Data involved in this research were secondary and cross-sectional, collected from credible international institutions such as the World Bank, UNDP, Transparency International, Vision of Humanity and the Fund for Peace. The outcome of this research article, which used the Median regression model as the cardinal tool, provided reliable information on the significant relationship between non-economic variables and economic growth.*

SUMMARY: 1. Introduction. – 1.1. Hypotheses. – 2. Literature review. – 3. Methodology – 3.1. Research model and methods. – 3.2. Sample. – 3.3. Descriptive data. – 4. Findings and discussion. – 4.1. Formula and results. – 5. Conclusions.

*PhD candidate in the Faculty of Business and Economics at SEEU, Tetovo, North Macedonia.
**Professor of Entrepreneurship and Family Business at Faculty of Business and Economics, South-East European University, North Macedonia

1. While economic growth is already an obvious macroeconomic aggregate from the measuring point of view, the determining factors of its level are not easy to be stated or to be investigated. In other words, it might be said that not only economic variables are related to economic growth, but non-economic variables as well. Concerning this, as the title suggests, the objective of this research paper is to investigate the non-economic variables that might be significantly related to economic growth; i.e. to find out the relationship between non-economic variables and economic growth. One should clarify that since this paper uses cross-sectional data (in this instance for 151 countries for the year 2018), it does not draw of the causality of the non-economic variables on economic growth (i.e. there are no panel data used to measure the impact of non-economic variables on economic growth); instead, the study tries to find out the relationship between such variables. However, the research still provides credible results on the relationship between non-economic variables and economic growth, which is what it aimed to achieve based on the respective research question mentioned bellow.

The study considers the GDP per capita as a measure of economic growth level (i.e. economic growth being a dependent variable), while the independent non-economic variables are considered the following four: *Human Development (Human Development Index), Absence of Corruption (Corruption Perception Index - CPI), Peace (Global Peace Index)*, *Fragility of Human Rights and Rule of Law*. Based on the above-mentioned variables involved in the study, the research question of this article is as follows: *what is the relationship between non-economic variables and economic growth?* From this research question, are raised the four hypotheses of this study presented below.

Overall, this paper studied a crucial problem related to the main macroeconomic objective (i.e. economic growth), that of the non-economic variables related to economic growth, which is not an easy goal at all, but the research manages

to report thoroughly reliable outcomes, being a solid contribution to this field of study. Moreover, one can argue that non-economic variables are becoming much more relevant in the nowadays time (i.e. which is known as a sustainable development era) as the conventional laissez-faire approach towards the economy is dismissed, among other reasons, because of the environmental issues and financial crises that countries are facing worldwide (Hajdari & Hadzimustafa, 2023).

1.1. Based on the research question mentioned above, the hypotheses of this study are the following four.

- *The Absence of Corruption has a statistically significant positive relationship with economic growth.*
- *The Fragility of Human Rights and Rule of Law has a statistically significant negative relationship with economic growth.*
- *Human Development has a statistically significant positive relationship with economic growth.*
- *Peace has a statistically significant positive relationship with economic growth.*

Of course, the significance level of this research paper for the hypotheses test is a p-value less than 0.05, which is a typical threshold for hypothesis testing in economics science research.

2. Economic growth, as one of the most important macroeconomic objectives, is affected by many indicators and variables, including non-economic ones. As far as the corruption implications are concerned (not the absence of corruption but the existence of it), many scholars, using different types of scientific approaches, methods and models, have provided evidence of the negative relationship between corruption and economic growth (Gründler and Potrafke, 2019; Alfada, 2019; Cieslik and Goczek, 2018; Thach, et al. 2017; Grabova, 2014; Nwankwo, 2014; Mendonça, & Fonseca, 2012; Ajie & Wokekoro 2012; Swaleheen, 2011). But just like for other topics, for the

implication of corruption as well, the scholars do not fully agree with each other, depending on differences in the sample they take, the methodology they use etc. For example, Huang (2016) did a study for Asia-Pacific countries for the period 1997 - 2013 with a bootstrap panel Granger causality approach, showing the results of the study that in South Korea and China the relationship between corruption and economic growth is positively related and statistically significant; while in other remaining countries of the respective area of Asia-Pacific, the relationship of the corruption and economic growth was not statistically significant.

For worthwhile economic growth, another crucial non-economic variable to be considered by countries around the world, respectively policymakers of such countries is the rule of law. Even though the rule of law is not an easy concept to define, because of the different components that may be included in it, it can still be said that its role in economic growth is important (Luong et al., 2020; Ozpolat et al., 2016; Castiglione et al., 2015; Nedanovski & Shapkova Kocevska 2023). However, not all the studies have supported the same conclusion of the significant relationship between the rule of law and economic growth (Şasmaz & Sagdic, 2020; Ftoreková & Mádr, 2017). Moreover, some scholars investigated the implications of the rule of law in other segments of the economy, such as the relationship between the rule of law and capital market development (Dima et al., 2018) and the impact of rule of law on the business performance (Roxas et al., 2012), by finding out the significant relationships between such variables, which means indirectly such relationships findings can be related to economic growth as well since capital market development is proved to be positively related to economic growth (Cizo et al., 2020; Deltuvaitė & Sinevičienė, 2014).

Two other indicators involved in this research are Peace and Human Development, of course, both of them being non-economic variables. According to Bayar & Gavriletea (2018), there is a statistically significant positive impact of peace on economic growth and vice versa, a statistically negative impact on economic growth

in the absence of peace. A similar conclusion about the importance of peace on economic growth was provided by Santhirasegaram (2008) and Hassan & Baba (2016). Meanwhile, many other scholars gave a significant role of human development to economic growth (Elistia & Syahzuni, 2018; Taqi et al., 2021; Novid & Sumarsono, 2018; Gulcemal, 2020; Nainggolan et al., 2022; Lestari et al., 2021; Hoa & Phuoc, 2016).

All in all, from the literature review, presented and elaborated above, one can state and conclude that non-economic variables play a pivotal role in economic growth, therefore such variables and indicators should be the focus of countries around the world if they are to achieve satisfying economic growth results.

3

3.1. This paper is conducted through quantitative research methods; i.e. the research uses a quantitative scientific approach. The robust Median Regression model is the crucial part of this study, which finds out, as the title suggests, non-economic variables significantly related to economic growth. Data used in the model are cross-sectional for 151 countries around the world for the 2018 year. From the last years, 2018 seemed the most typical one to study the relationship of the non-economic variables and economic growth (that is why 2018 was taken as a sample in the research); i.e. the other years as 2019, 2020, etc., would be less typical, because of the crises that have been happening, which would potentially impact the results.

The sources of data involved in the study are secondary, collected from credible international institutions such as the World Banka, United Development Program (UNDP), Transparency International, and Vision for Humanity and the Fund for Peace. More concretely, data for the variable *GDP per capita* are from the World Bank, data for *Human Development (Human Development Index)* are from United Development Program (UNDP), data for the *Absence of Corruption (Corruption Perception Index - CPI)* are from Transparency International, data for the *Peace (Global Peace Index)* are

from Vision of Humanity, and data for *Fragility of Human Rights and Rule of Law* are from the Fund for Peace (Fragility States Index). All in all, this research paper, as mentioned using the quantitative scientific approach, reports credible results of the examination such as Descriptive Statistics, heteroskedasticity test normality test, VIF (Variance Inflation Factor), and the robust Median Regression mode and. All the computations of this research are done with the well-known STATA software or application.

3.2. The study, as mentioned using the cross-sectional data, takes as a sample 151 countries around the world. These countries differ not only in economic growth level but also in other areas included in the examination, such as human development level, peace, absence of corruption and fragility of human rights and rule of law. Thus, this large number of countries involved in the investigation (i.e. 151 countries) makes the sample thoroughly representative. For the respective information about the countries involved in this research, refer to the list at the end of this paper (the list makes the study more transparent and more suitable to other scholars in case the replication of the study is aimed).

3.3. The descriptive statistics or data of this research paper, done for all the log-transformed variables, are reported in the following table (having into account that this is only the initial part of the quantitative analysis).

Variable	Obs	Mean	Std. Dev.	Min	Max
lnGDPperca~a	151	8.589923	1.442213	5.613609	11.37086
lnAbsenceo~I	151	3.66639	.4319379	2.564949	4.477337
lnFrHumanR~a	151	1.578368	.664147	-.3566749	2.292535
lnHumanDev~x	151	-.3517376	.2353338	-.9213033	-.0387408
lnGlobalPe~x	151	.6796497	.2255303	.10436	1.255616

Of course, the above presented summary statistics (as usual) provide necessary information on the central tendency, variability, and range of the variables in the data

set. And based on these descriptive statistics, respectively based on the standard deviations, there seem to be significant differences between countries for each of the variables involved in this summary. In other words, these differences indicate that there are considerable deviations in economic development, the absence of corruption, the fragility of human rights and the rule of law, human development, and peace.

4.

4.1. The robust Median Regression model, being the cardinal part of this research paper, is run under the following formula:

GDP per capita = $\beta_0 + \beta_1$ * *Absence of Corruption* + β_2 * *Fragility of Human Rights and Rule of Law* + β_3 * *Human Development* + β_4 * *Peace* + ε.

Of course, β1, β2, β3, and β4 represent the regression coefficients (or slopes) for each independent variable of the study, which represent the change in natural logarithm of GDP per capita associated with a one per cent increase in the corresponding independent variable, while holding all other variables constant. The results of the OLS and two tests, VIF Variance Inflation Factor, Heteroskedasticity and Normality test are presented bellow.

Source	SS	df	MS			
Model	277.175699	4	69.2939246	Number of obs	=	151
Residual	34.8212084	146	.238501428	F(4, 146)	=	290.54
				Prob > F	=	0.0000
				R-squared	=	0.8884
				Adj R-squared	=	0.8853
Total	311.996907	150	2.07997938	Root MSE	=	.48837

lnGDPpercapita	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
lnHumanDevelopmentIndex	4.680177	.2427417	19.28	0.000	4.200436	5.159918
lnAbsenceofCorrCPI	.524873	.1743262	3.01	0.003	.1803443	.8694018
lnGlobalPeaceIndex	.4988493	.2918529	1.71	0.090	-.0779529	1.075651
lnFrHumanRightsandRuleofLa	-.3368947	.1039626	-3.24	0.001	-.5423606	-.1314287
_cons	8.504429	.8163482	10.42	0.000	6.891042	10.11781

The VIF - Variance Inflation Factor proves that there is some multicollinearity between independent variables, but the figures are not severe enough to be considered a significant issue. The variance inflator factor (VIF) results show that multicollinearity between independent variables is not a serious issue, since all such variables have VIF outcomes less than 5 (even in this case, as shown in the VIF table, are less than 4). Generally speaking, VIF values less than 5 are not considered problematic, and vice versa, VIF values more than 5 would indicate a high degree of multicollinearity among the independent variables, which could lead to biased regression estimates and inflated standard errors. See the results below.

Variable	VIF	1/VIF
lnAbsenceo~I	3.57	0.280435
lnFrHumanR~a	3.00	0.333517
lnGlobalPe~x	2.72	0.366996
lnHumanDev~x	2.05	0.487239
Mean VIF	2.84	

But two other tests, heteroskedasticity and normality tests prove that the OLS model of this research violates the assumptions, as presented in the following.

```
Breusch-Pagan / Cook-Weisberg test for heteroskedasticity
         Ho: Constant variance
         Variables: fitted values of lnGDPpercapita

         chi2(1)      =     3.65
         Prob > chi2  =   0.0561
```

Shapiro-Wilk W test for normal data

Variable	Obs	W	V	z	Prob>z
resid	151	0.98229	2.072	1.652	0.04924

Having into consideration that the Median Regression model is a robust model that is less sensitive to heteroskedasticity issues, non-normal or skewed data, and robustness to outliers, we decided to go on with this model instead of OSL. Bellow are presented its results, and afterwards are done the interpretations and discussion.

```
Iteration  1:  WLS sum of weighted deviations =  27.439214

Iteration  1: sum of abs. weighted deviations =  27.307568
Iteration  2: sum of abs. weighted deviations =  27.196138
Iteration  3: sum of abs. weighted deviations =  27.096193
Iteration  4: sum of abs. weighted deviations =  27.090836
Iteration  5: sum of abs. weighted deviations =  27.089956
Iteration  6: sum of abs. weighted deviations =  27.079546
Iteration  7: sum of abs. weighted deviations =  27.078248

Median regression                                 Number of obs =        151
  Raw sum of deviations 90.61517 (about 8.5683012)
  Min sum of deviations 27.07825                  Pseudo R2     =     0.7012
```

lnGDPpercapita	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
lnAbsenceofCorrCPI	.7145398	.2009608	3.56	0.001	.3173718	1.111708
lnFrHumanRightsandRuleofLa	-.4162734	.1198466	-3.47	0.001	-.6531317	-.179415
lnHumanDevelopmentIndex	4.578946	.2798293	16.36	0.000	4.025907	5.131986
lnGlobalPeaceIndex	.770833	.336444	2.29	0.023	.1059034	1.435763
_cons	7.654418	.941075	8.13	0.000	5.794528	9.514307

First of all, below is presented the formula with coefficients, based on the results found out by the above regression model.

Formula with results: _lnGDP per capita = 7.654418 + .7145398 * lnAbsence of Corruption + 0.4162734 * lnFragility of Human Rights and Rule of Law +4.578946 * lnHuman Development) - 0.770833 * ln(Peace) + ε._

The robust Median Regression model results indicates that all four independent variables, *Absence of Corruption, Fragility of Human Rights and Rule of Law, Human Development, and Peace* are significantly related to GDP per capita (in natural logarithm) at the 5% level of significance. Concretely, *the Absence of Corruption* (natural logarithm of *Corruption Perception Index*), *Human Development* (natural logarithm of *Human Development Index*), and *Peace* (natural logarithm of *Global Peace Index*) have positive coefficients, which suggest that higher levels of these variables are associated with higher levels of GDP per capita. On the other hand, of course, the *Fragility of Human Rights and Rule of Law* (natural logarithm of *Human Rights and Rule of Law*), has a negative coefficient, indicating that a higher level of this variable is associated with a lower level of GDP per capita. Since, as explained above, all the variables are in natural logarithm, it means in this case of the coefficients in the regression output that they indicate the estimated percentage change in GDP per capita for a one per cent increase in the respective independent variable, holding all other independent variables constant. Specifically, a 1% increase in *Absence of Corruption (Corruption Perception Index - CPI*) is associated with approximately 0.71% increase in the GDP per capita, holding all other independent variables constant; a 1% decrease in the *Fragility of Human Rights and Rule of Law (*natural logarithm *of Human Rights and Rule of Law*) is associated with 0.41% decrease in the GDP per capita, holding all other independent variables constant; a 1% increase in the variable *Human Development* (*Human Development Index*) is associated with approximately 4.57% increase in the GDP per capita, holding all other independent variables constant; and finally, a 1% increase in the *Peace* (*Global Peace Index*) is associated with 0.77%

increase in the GDP per capita, holding all other independent variables constant; coefficient for *Peace* (*Global Peace Index*) is not significant; while the intercept term 7.65, which indicates the expected value when all in independent variables are equal to zero.

Moreover, the pseudo R-squared as a measure of goodness of fit, represents the proportion of explained variability of the dependent variable, not as the average of the dependent variable as in OLS regression. As it may be seen from the results, the pseudo R-squared of the model is 0.7012 or 70.12%, which means it explains approximately 70% of the variability in the median of the natural logarithm of GDP per capita. It is worth mentioning that even though the pseudo-R-squared provides some information on the fit of the median regression model, the interpretation of the coefficients is much more informative. On the other hand, for the hypotheses testing, based on the findings of this research paper, it could be said that all of the four alternative hypotheses are proved, while the null ones are rejected, since all four variables, *Absence of Corruption, Fragility of Human Rights and Rule of Law, Human Development, and Peace,* have less than 0.05 p-values, respectively they are statistically significant at 5% level of significance. So as stated in the hypotheses of this paper, the *Absence of Corruption, Human Development, and Peace* have a statistically positive relationship with economic growth, while, the *Fragility of Human Rights and the Rule of Law* have a statistically negative relationship with economic growth.

5. This research paper, using a quantitative scientific approach, studied the non-economic variables related to economic growth, i.e. the relationship between non-economic variables and economic growth. The study considered GDP per capita as a dependent variable (as a measure of economic growth), on the other hand, four other non-economic variables were considered independent ones, such as *Absence of Corruption, Fragility of Human Rights and Rule of Law, Human Development, and*

Peace. The results of a robust Median Regression model, as a main tool of this study, show the significant relationship between the non-economic variables and economic growth since all four out of four non-economic variables involved in the research have resulted in a p-value less than 0.05. Specifically, the relationship between three non-economic variables, *Human Development* (as measured by the *Human Development Index*), the *Absence of Corruption* (as measured by the *Corruption Perception Index*), and *Peace* (as measured by the Global Peace Index) was found to be positively related and statistically significant to economic growth, at a 5% level of significance, while the relationship between the *Fragility of Human Rights and Rule of Law* (as a component and a measure of *Fragility States Index*) and economic growth was found to be negatively related and statistically significant (again at a 5% level of significance).

All in all, even though this research did not draw the causality between non-economic variables and economic growth (since it used cross-sectional data) still managed to report valuable findings on the relationship between the variables examined by using a virtuous representative sample of 151 countries (which, after all, was its aim).

References

1. Hajdari, A., & Hadzimustafa, S. (2023). ENVIRONMENTAL ISSUES AND FINANCIAL CRISES DISMISS LAISSEZ-FAIRE CAPITALISM. *Journal of Liberty and International Affairs*, *9*(2), 550-560.
2. Ozpolat, A., Guven, G. G., Ozsoy, F. N., & Bahar, A. (2016). Does rule of law affect economic growth positively? *Research in World Economy*, *7*(1), 107.
3. Gründler, K., & Potrafke, N. (2019). Corruption and economic growth: New empirical evidence. *European Journal of Political Economy*, *60*, 101810.
4. Grabova, P. (2014). Corruption impact on Economic Growth: An empirical analysis. *Journal of Economic Development, Management, IT, Finance, and Marketing*, *6*(2), 57.

5. Ajie, H. A., & Wokekoro, O. E. (2012). The impact of corruption on sustainable economic growth and development in Nigeria. *International Journal of Economic Development Research and Investment*, *3*(1), 91-109.

6. Nwankwo, O. F. (2014). Impact of corruption on economic growth in Nigeria. *Mediterranean Journal of Social Sciences*, *5*(6), 41.

7. Alfada, A. (2019). The destructive effect of corruption on economic growth in Indonesia: A threshold model. *Heliyon*, *5*(10), e02649.

8. Thach, N. N., Duong, M. B., & Oanh, T. T. K. (2017). Effects of corruption on economic growth-empirical study of Asia countries. *Imperial Journal of Interdisciplinary Research*, *7*, 791-804.

9. Huang, C. J. (2016). Is corruption bad for economic growth? Evidence from Asia-Pacific countries. *The North American Journal of Economics and Finance*, *35*, 247-256.

10. Gliem, J. A., & Gliem, R. R. (2003). Calculating, interpreting, and reporting Cronbach's alpha reliability coefficient for Likert-type scales. Midwest research-to-Practice Conference in Adult, Continuing, and community education.

11. Swaleheen, M. (2011). Economic growth with endogenous corruption: an empirical study. *Public Choice*, *146*, 23-41.

12. Cieślik, A., & Goczek, Ł. (2018). Control of corruption, international investment, and economic growth–Evidence from panel data. *World development*, *103*, 323-335.

13. Haggard, S., & Tiede, L. (2011). The rule of law and economic growth: where are we? *World development*, *39*(5), 673-685.

14. Mendonça, H. F. D., & Fonseca, A. O. D. (2012). Corruption, income, and rule of law: empirical evidence from developing and developed economies. *Brazilian Journal of Political Economy*, *32*, 305-314.

15. LUONG, T. T. H., NGUYEN, T. M., & NGUYEN, T. A. N. (2020). Rule of law, economic growth and shadow economy in transition countries. *The Journal of Asian Finance, Economics and Business*, *7*(4), 145-154.

16. Castiglione, C., Infante, D., & Smirnova, J. (2015). Environment and economic growth: is the rule of law the go-between? The case of high-income countries. *Energy, Sustainability and Society*, *5*, 1-7.

17. Dima, B., Barna, F., & Nachescu, M. L. (2018). Does rule of law support the capital market? *Economic research-Ekonomska istraživanja*, *31*(1), 461-479.

18. Čižo, E., Lavrinenko, O., & Ignatjeva, S. (2020). Analysis of the relationship between financial development and economic growth in the EU countries. *Insights into Regional Development*, *2*(3), 645-660.

19. Deltuvaitė, V., & Sinevičienė, L. (2014). Investigation of relationship between financial and economic development in the EU countries. *Procedia Economics and Finance*, *14*, 173-180.

20. ŞAŞMAZ, M. Ü., & SAĞDIÇ, E. N. (2020). The effect of government effectiveness and rule of law on economic growth: the case of European union transition economies. *Dokuz Eylül Üniversitesi İşletme Fakültesi Dergisi*, *21*(1), 203-217.

21. Roxas, B., Chadee, D., & Erwee, R. (2012). Effects of rule of law on firm performance in South Africa. *European Business Review*.

22. Ftoreková, M., & Mádr, M. (2017). The Rule of Law and Economic Growth in the Balkan States. *European Journal of Business Science and Technology*.

23. Nedanovski, P., & Shapkova Kocevska, K. (2023). Rule of Law and Economic Growth: Evidences From South East Europe.
https://repository.ukim.mk/handle/20.500.12188/25627

24. Bayar, Y., & Gavriletea, M. D. (2018). Peace, terrorism and economic growth in Middle East and North African countries. *Quality & Quantity*, *52*(5), 2373-2392.

25. Santhirasegaram, S. (2008). Peace and economic growth in developing countries: pooled data cross–country empirical study. In *International conference on applied economics–ICOAE* (p. 807).

26. Hassan, B. D., Fausat, A. F., & Baba, Y. A. (2016). The imperative of peace and security for the attainment of inclusive growth in Nigeria. *European Journal of Research in Social Sciences Vol*, *4*(2).

27. Elistia, E., & Syahzuni, B. A. (2018). The correlation of the human development index (HDI) towards economic growth (GDP per capita) in 10 ASEAN member countries. *Jhss (journal of humanities and social studies)*, *2*(2), 40-46.

28. Taqi, M., e Ali, M. S., Parveen, S., Babar, M., & Khan, I. M. (2021). An analysis of Human Development Index and Economic Growth. A Case Study of Pakistan. *iRASD Journal of Economics*, *3*(3), 261-271.

29. Novid, A., & Sumarsono, H. (2018). Human development index, capital expenditure, fiscal desentralization to economic growth and income inequality in East Java Indonesia. *Quantitative Economics Research*, *1*(2), 108-118.

30. Gulcemal, T. (2020). Effect of human development index on GDP for developing countries: A panel data analysis. *Journal of Economics Finance and Accounting*, *7*(4), 338-345.

31. Nainggolan, L. E., Lie, D., Siregar, R. T., & Nainggolan, N. T. (2022). Relationship Between Human Development Index and Economic Growth in Indonesia Using Simultaneous Model. *Journal of Positive School Psychology*, 695-706.

32. Lestari, N. K. S., Marhaeni, A. A. I. N., & Yasa, I. G. W. M. (2021). Does Human Development Index (HDI), Investment, and Unemployment Effects on Economic Growth and Poverty Levels?(A Case Study in Bali). *American Journal of Humanities and Social Sciences Research (AJHSSR)*, *5*(2), 416-426.

33. Hoa, P. T., & Phuoc, N. K. (2016). Human development index impact on economic growth. *HO CHI MINH CITY OPEN UNIVERSITY JOURNAL OF SCIENCE-ECONOMICS AND BUSINESS ADMINISTRATION*, *6*(1), 3-13.

34. World Bank. (2022). World development indicators. World Bank. Retrieved from https://databank.worldbank.org/source/world-development-indicators

35. Human Development Reports (UNDP). Human Development Index 2018. Retrieved from https://hdr.undp.org/data-center/human-development-index

36. Transparency International. (2018). Corruption Perceptions Index 2018. Retrieved from https://www.transparency.org/en/cpi/2018.

37. Vision of Humanity. (2018). Vision of Humanity. Global Peace Index 2018. Retrieved from https://www.visionofhumanity.org/.

38. Fund for Peace. (2018). Fragile States Index. Retrieved from https://fragilestatesindex.org/.

The full list of 151 countries involved in the sample

Afghanistan, Albania, Algeria, Angola, Argentina, Armenia, Australia, Austria, Azerbaijan, Bahrain, Bangladesh, Belarus, Belgium, Benin, Bhutan, Bolivia, Bosnia and Herzegovina, Botswana, Brazil, Bulgaria, Burkina Faso, Burundi, Cambodia, Cameroon, Canada, Central African Republic, Chad, Chile, China, Colombia, the Democratic Republic of the Congo, Republic of the Congo, Costa Rica, Cote d'Ivoire, Croatia, Cuba, Cyprus, Czech Republic, Denmark, Djibouti, Dominican Republic, Ecuador,

Egypt Arab Republic, El Salvador, Equatorial Guinea, Estonia, Ethiopia, Finland, France, Gabon, Gambia, Georgia, Germany, Ghana, Greece, Guatemala, Guinea, Guinea-Bissau, Guyana, Haiti, Honduras, Hungary, Iceland, India, Indonesia, Iran Islamic Republic, Iraq, Ireland, Israel, Italy, Jamaica, Japan, Jordan, Kazakhstan, Kenya, Kuwait, Kyrgyz Republic, Latvia, Lebanon, Lesotho, Liberia, Libya, Lithuania, Madagascar, Malawi, Malaysia, Mali, Mauritania, Mexico, Moldova, Mongolia, Montenegro, Morocco, Mozambique, Myanmar, Namibia, Nepal, Netherlands, New Zealand, Nicaragua, Niger, Nigeria, North Macedonia, Norway, Oman, Pakistan, Panama, Papua New Guinea, Paraguay, Peru, Philippines, Poland, Portugal, Qatar, Romania, Russian Federation, Rwanda, Saudi Arabia, Senegal, Sierra Leone, Singapore, Slovak Republic, Slovenia, South Africa, South Korea, Spain, Sri Lanka, Sudan, Sweden, Switzerland, Syrian Arab Republic, Tajikistan, Tanzania, Thailand, Timor-Leste, Togo, Trinidad and Tobago, Tunisia, Turkey, Turkmenistan, Uganda, Ukraine, United Arab Emirates, United Kingdom, United States of America, Uruguay, Uzbekistan, Vietnam, Yemen Republic, Zambia, Zimbabwe.

THE FUTURE OF FINANCE IS DIGITAL – ROBO-ADVISING AND ARTIFICIAL INTELLIGENCE – A CRITICAL APPRAISAL

Jörg Orgeldinger [*]

ABSTRACT: *After the two revolutions in finance over the last century – the efficient market mathematical finance revolution in the 1950s and the behavioral finance revolution in the 1970s now the third finance revolution with "machine finance" began. Robo-advising combines AI and financial expertise to offer accessible and personalized financial guidance. It analyzes data, optimizes portfolios, and provides lower-cost investment strategies. Robo-advisors automate tasks like portfolio rebalancing and offer efficiency and rational decision-making. However, concerns regarding data privacy, algorithmic bias, and regulations need attention. This article explores the benefits, challenges, and regulatory landscape of robo-advising. It emphasizes the support robo-advisory services provide in minimizing risk, generating returns, and maintaining portfolios. They offer an efficient alternative to traditional advisors, using technology and expertise for personalized investment guidance. Further on the fee structure of robo-advisors and the benefits they offer to financial advisors are described. It explains that traditional financial advisors typically charge fees ranging from 1% to 1.5% of total assets managed, while robo-advisors charge between 0% and 0.25% for basic services. The abstract also explores the impact of fees on investment performance and introduces the concept of robo-advisors using index ETFs to minimize fees. It further explains the two main types of robo-advisors: hybrid robo-advisors and pure robo-advisors. Additionally, the article provides examples of prominent robo-*

[*] Ph.D.(finance).

advisor providers and their assets under management. It concludes by highlighting the potential influence of artificial intelligence on robo-advising, including data analysis, personalized recommendations, and improved communication with investors.

SUMMARY: 1. Introduction. – 2. Literature overview. – 3. The characteristics of robo-advising, – 4. Security and regulation. – 5. How can robo-advisory support? – 6. Possible Fee Structure of a robo-advisor. – 7. The Future of Robo-Advice: Practical Examples. – 8. How artificial intelligence will affect robo-advising. – 9. Critical appraisal of robo-advising. – 9.1. Advantages. – 9.2. Disadvantages. – 10. Future research in AI and robo-advising can explore various avenues. – 11. Summary.

1. Robo-advising, also known as automated investment or digital advising, is revolutionizing the way people approach investing and financial planning. By leveraging technology and algorithms, robo-advisors provide personalized investment advice and portfolio management services to clients, making investing more accessible and convenient. In the rapidly evolving landscape of financial services, technology continues to redefine the way we approach investing. Among the notable advancements is the rise of robo-advising, a revolutionary approach to wealth management that combines artificial intelligence (AI) and financial expertise. With its promise of accessible and personalized financial guidance, robo-advising has swiftly gained traction, transforming the investment landscape for both novice and seasoned investors alike. Robo-advising refers to automated platform-driven investment advisory services that leverage AI algorithms to provide tailored investment strategies and portfolio management. These digital advisors offer an alternative to traditional financial advisors, intending to democratize access to professional investment expertise and lowering costs. By utilizing cutting-edge technology, robo-advisors analyze vast amounts of data, assess risk profiles, and optimize investment portfolios, all while maintaining a user-friendly and intuitive interface.

The fundamental concept driving robo-advising is the marriage of human financial expertise with the computational power of AI. By removing the need for face-to-face interactions, robo-advisors offer investors the convenience of instant access to financial insights and recommendations at any time and from anywhere. Whether an individual is planning for retirement, investing in stocks and bonds, or saving for a specific goal, robo-advisors provide customized strategies tailored to their unique financial circumstances, risk tolerance, and investment objectives. In addition to personalized recommendations, robo-advisors boast several distinct advantages. With lower management fees compared to traditional financial advisors, they enable investors with smaller portfolios to access professional-level guidance that was previously out of reach. Furthermore, robo-advisors employ sophisticated algorithms that continuously monitor market trends, automatically rebalance portfolios, and adjust investment strategies as needed, all with minimal human intervention. This automation ensures that investments stay aligned with the investor's goals and risk appetite, saving time and effort for individuals who prefer a hands-off approach. However, while robo-advising has gained popularity and disrupted the financial services industry, it is not without its considerations. As with any technology-driven solution, concerns such as data privacy, algorithmic bias, and potential system vulnerabilities need to be addressed to ensure investor trust and regulatory compliance. Striking the right balance between automation and human oversight is crucial to maintain the integrity and reliability of these AI-driven platforms.

In this article, we delve deeper into the world of robot advising, exploring the underlying technology, benefits and challenges it presents. We examine how robo-advisors construct investment portfolios, the factors they consider, and the strategies they employ to optimize returns while managing risk. We also discuss the evolving regulatory landscape surrounding robo-advising and the steps taken to protect investors. As the financial industry continues its digital transformation, robo-advising

stands as a testament to the power of AI in democratizing access to quality financial advice. By combining human expertise with the efficiency of automation, these digital advisors offer investors an opportunity to make informed decisions and build robust investment portfolios. Join us on this exploration of robo-advising and the impact it has on reshaping the way we invest and plan for the future.

2. There is much literature available on robo-advising. The field is continuously evolving, and researchers are exploring various aspects, including technology advancements, investor behavior, regulatory implications, and the impact on traditional financial services. There are different definitions for robo-advising: Betterment CEO Jon Stein (CNBC) defines it: "Robo-advisors have opened up investing to a wider audience, making it more accessible and affordable for everyday investors." According to Tania Carlone, Managing Director at Accenture Wealth and Asset Management. [Source: Forbes] "Robo-advisors are particularly appealing to young investors who are comfortable with technology and want a digital solution for their investment needs."

According to Agarwal, Driscoll, Gabaix, and Laibson (2009), younger investors lack investment knowledge, and many older investors suffer from diminishing cognitive ability. Lam (2016) found that robo-advisors, automated investment platforms that provide investment advice without the intervention of a human advisor, have emerged as an alternative to traditional sources. Phoon and Koh (2017) describe how robo-advisors' assets under management (AUM) have risen manyfold through competitiveness in pricing, transparency, and services. Blanche, Casaló, and Flavián (2019) analyze data from a web survey of 765 North American, British, and Portuguese potential users of robo-advisory and propose a research framework to better understand robo-advisor adoption. Fisch, Labouré, and Turner (2019) describe the growth of the robo-advisor industry and the services that robo-advisors offer. In his paper "CAN SLIM Method V.s Robo Advising Stock Market Simulation" Ambalangodage

(2019) also introduces the newest technologies for robo-advising. Cheng et al (2019) investigate the trust-influencing mechanism of robo-advisors by a mixed-method approach. Rühr (2020) investigates user preferences with robo-advising and the performance-control dilemma. Wang, Haoran, and Shi Yu (2021) proposed a full-cycle, data-driven (model-free) investment robo-advising framework that leverages both inverse optimization and deep reinforcement learning techniques. Alsabah and Capponi (2021) introduced a reinforcement learning framework for retail robo-advising. Capponi, Olafsson et al. (2022) describe how automated investment managers, or robo-advisors, have emerged as an alternative to traditional financial advisors. In a very interesting study by Hao, Rubin, et al. (2022) they prove that robo-advising improves financial sophistication. Investors have more diversified portfolios and exhibit fewer behavioral biases in portfolio management. Later many special analyses were performed. Anshari, Almunawar, and Masri (2022) examine the concept of a robo-advisor with digital twin capabilities for personal financial management. Kunschke, Spitz, and Pohle (2022) give new details what technical innovations and how FinTech is changing the traditional banking sector based on adapted regulation.

There is a huge literature on robo-advising and how it is adapted in different countries, e.g in their paper Integrating the 'Troublemakers': A Taxonomy for Cooperation between Banks and Fintechs" Drasch, Schweizer, and Urbach (2018) describe how robo-advisory improves the customers' investment opportunities in China.

On artificial intelligence, we also find dozens of books. In their book Artificial Financial Intelligence in China by Zhang and Zhao (2021) they prove that artificial intelligence technologies in the form of facial, speech, and semantic recognition have great advantages. In their book Artificial Intelligence for Financial Markets Barrau and Douady (2022) introduce the artificial intelligence technique of polymodels and apply it to the prediction of stock returns.

In their book ‘Digitalisierung im Asset Management’ (Soldatos and Kyriazis (2022) demonstrate that digital finance increases trust and personalization using AI. Artificial intelligence applications like search and recommendation engines, and artificial intelligence platforms such as Google Maps, Chat GPT, BloombergGPT, and Stable Diffusion can be perceived as early manifestations of the ongoing transformation according to Seppälä, Mucha, Mattila (2023).

There are two very interesting modern papers on open AIs chatbot:

Biswas, Nath, and Mukhopadhyaya (2023) in their paper ChatGPT in Investment Decision Making found out that chatgpt has different red flags to consider: dependency on the quality of input, transparency, data security, dynamic markets, and changing regulatory framework. Hariri (2023) provides a comprehensive overview of ChatGPT, its applications, advantages, and limitation.

3. In the ever-evolving world of finance, robo-advising has emerged as a game-changing approach to investment management. Combining the power of automation and advanced algorithms, robo-advisors provide investors with a seamless and cost-effective way to navigate the complexities of asset allocation, portfolio management, and financial planning (please refer to Nathmann 2019). At the heart of robo-advising lies the ability to optimize asset allocation by leveraging key financial data. By analyzing expected returns, deviations, and correlations among various asset classes, robo-advisors can identify portfolio compositions that offer the optimal risk-to-return ratio. Gone are the days of relying solely on rule-of-thumb strategies; robo-advisors utilize sophisticated models and historical trends to make data-driven investment decisions. Robo-advising represents a significant advancement in the financial services industry, aligning itself with the broader fintech revolution. These automated investment management platforms harness technology to provide investors with personalized advice and tailored portfolios. Through user-friendly interfaces and online questionnaires, robo-advisors gather crucial information about investors' risk

tolerance, financial goals, and time horizons, enabling them to construct portfolios that align with individual needs and preferences.

4. Robo-advisors prioritize the protection of sensitive personal and financial information. They employ robust data encryption, secure storage practices, and strict access controls to prevent unauthorized access or breaches of user data. As digital platforms, robo-advisors are aware of the potential risks of cyberattacks. To mitigate these risks, they implement measures such as firewalls, intrusion detection systems, regular security audits, and comprehensive employee training to ensure the security of their systems and defend against potential threats. Robo-advisors implement identity verification procedures to ensure the authenticity of their users. This may involve thorough identity document checks, verification through trusted third-party services, or other authentication methods to prevent fraudulent activities.

Robo-advisors operate within the framework of financial regulations and compliance requirements specific to the jurisdictions they serve. These regulations may include registration, licensing, and ongoing reporting obligations to regulatory bodies such as financial authorities or securities commissions. Regulations aim to protect investors by requiring robo-advisors to adhere to certain standards. This includes disclosing relevant information, ensuring transparency of charges, providing clear details about investment strategies and risks, and addressing any potential conflicts of interest. Robo-advisors are typically required to assess the suitability of investment recommendations based on investors' profiles, risk tolerance, and investment objectives. They must ensure that the recommended portfolios align with investors' financial situations and preferences. Robo-advisors have established compliance frameworks and procedures to ensure adherence to relevant regulations. This may involve monitoring and reporting transactions, conducting periodic audits, and implementing internal controls to maintain compliance standards.

Depending on the jurisdiction, robo-advisors may have a fiduciary duty to act in the best interests of their clients. This duty entails providing suitable investment advice, managing conflicts of interest, and prioritizing clients' financial well-being. It is important to note that regulatory requirements for robo-advisors may vary across jurisdictions. Regulations continue to evolve to adapt to technological advancements and the unique challenges posed by digital investment platforms. Robo-advisors must stay updated on the regulatory landscape and ensure compliance with applicable laws and guidelines to maintain the trust and confidence of their clients. Security is of utmost importance in financial investments, particularly for robo-advisors, as they are often young and innovative companies in Germany. Ensuring transparent handling of all security-related matters is crucial. Rest assured that there are legal frameworks in place for the business operations of robo-advisors in Germany, offering maximum security.

These digital platforms collaborate with banks that keep deposits in accounts as special assets, ensuring the safety of funds even in the event of the robo-advisor or the cooperating bank facing bankruptcy. Additionally, statutory deposit guarantees protect investment amounts, with up to EUR 100,000 per bank and customer. Robo-advisor investment amounts are treated as special assets, and statutory deposit protection also applies to credit balances in clearing accounts. However, it is important to note that regulation and supervision may vary, and risks are limited to price fluctuations. Data protection and encrypted transmissions remain fundamental aspects of ensuring security.

5. Robo-advisory services play a crucial role in supporting investors by effectively addressing three key objectives. Firstly, they focus on minimizing risk to ensure the safety and security of investors' portfolios. Secondly, they strive to generate returns that align with investors' savings goals, facilitating the attainment of

specific financial thresholds they have established. Lastly, robo-advisory services aim to maintain a portfolio in accordance with investors' risk tolerance.

Traditionally, achieving these objectives has been the responsibility of financial advisors, and the industry of such advisors is widespread across the country. These professionals evaluate investors' risk tolerance using questionnaires that explore various aspects of their financial situations and their willingness to undertake risks. Based on this assessment, financial advisors recommend suitable asset classes and specific allocations to assist investors in reaching their financial goals. Additionally, they may provide support with tax planning and rebalancing, considering the tax advantages of the investment account and ensuring that the portfolio maintains the desired allocation over time.

Robo-advisory services streamline and automate the investment process by employing advanced algorithms and data analysis. These digital platforms gather information on investors' risk profiles and financial objectives, using the insights to construct optimized portfolios. Additionally, robo-advisors can assist with tax planning strategies and periodic rebalancing, dynamically adjusting portfolio allocations as various asset classes exhibit divergent performance over time and responding to changes in investors' circumstances. In essence, robo-advisory services serve as efficient and accessible alternatives to traditional financial advisors. They offer comprehensive support in the creation and management of investment portfolios that align with investors' risk tolerance, savings goals, and evolving market conditions. By seamlessly combining technology with financial expertise, robo-advisory services provide investors with a convenient and personalized experience, delivering robust investment guidance.

6. What benefits do financial advisors derive from this arrangement? They offer their services in exchange for a fee, typically ranging from 1% to 1.5% of the total assets

they manage. For instance, if an investor has $1 million under the management of a financial advisor, the advisor would charge approximately $10,000 per year as a fee. Additionally, the funds in which these managers invest also impose their fees. Most mutual funds, especially those actively managed, have fees associated with managing investors' funds. For actively managed funds, these fees typically fall between 0.75% and 1%. Therefore, when entrusting your money to a financial advisor, you might end up paying fees ranging from 1.75% to 2.5% for the management of your investments. The question arises: How do these fees impact your wealth? This inquiry is what prompts us to consider robo-advisors as an alternative. Robo-advisors are known for their relatively low fees. In the context of human advisors, who traditionally operated from physical offices, the general rule of thumb was charging approximately 1% of the assets under management. Thus, if you had a portfolio worth $1 million, the fee for managing your investments would amount to $10,000 per year. In contrast, robo-advisors charge between 0% and 0.25% for basic services, representing about a quarter of what a typical human advisor would charge for investment management services.

Example:

You save $1,000 per month and earn a return of 10% per year on your investment. The financial advisor with whom the investor has placed their money charges a fee of 1%.

If you have a manager who charges a higher fee, or you are invested in assets that charge additional fees because of management expenses, such that the total fee runs to 2%, we wind up with only about for example $3 million. Half of our investment is potentially eaten up by fees on investment management over our life of savings. Because of these fees, robo-advising has been born. These robo-advisors help to gauge risk tolerance. They use index ETFs to minimize fees. ETFs attempt to take active positions in a particular market and wind up having much lower management fees than

actively-managed mutual funds. These advisors then automatically rebalance your portfolio to maintain an asset allocation.

If the value of different assets in your allocation change, they will rebalance the portfolio. And they also rebalance the portfolio as you age and your goals change. There are two main types of these advisors. Hybrid robo-advisors are services that are mostly automated. So by and large you will not come into contact with a human being when using a hybrid robo-advisor. But there are situations where if you have enough money or you pay a certain fee, you can speak to a human advisor to get further advice on your asset allocation.

Accessing human support typically requires maintaining a higher minimum balance or incurring some form of fee. An illustration of such services is provided by Vanguard, which offers hybrid robo-advising services (Marszk/Lehmann, 2021, p. 15). The alternative automated advisor is the pure robo-advisor, where asset allocation is entirely automated, with no human interaction, conducted entirely online. These robo-advisors feature minimal fees and low minimum balances, achieving two primary objectives. Firstly, lower fees enable investors to retain a larger portion of their funds. Secondly, the low minimum balances enable individuals with limited wealth to initiate investments at an early stage. Two prominent examples of such robo-advisors, boasting the highest assets under management, include Wealthfront and Betterment. Subsequently, I will utilize Wealthfront as an illustration to elucidate how a robo-advisor attains its objectives.

How does a peer advisor function? Initially, an online questionnaire assesses your risk tolerance, considering two types of data. The first involves objective data, such as your age, income, and assets. Generally, older investors, those with higher income, and individuals with more assets are perceived as more risk-tolerant, based on quantifiable criteria rather than subjective beliefs. The second set of questions delves into subjective data, gauging responses to scenarios like market downturns.

The robo-advisor then combines the objective and subjective data to determine an overall risk tolerance. This approach is rooted in behavioral finance, recognizing that individuals often overestimate their risk tolerance. This tendency is particularly pronounced in men, especially those with post-secondary education, who may perceive themselves as highly risk-tolerant despite demonstrating a different behavior in practice. Subsequently, the robo-advisor employs the information gleaned from the risk tolerance questionnaire to select a portfolio situated on the efficient frontier. To recap our previous discussions, the efficient frontier represents the asset allocations with the highest expected return relative to a given level of risk and, consequently, a specific level of risk tolerance.

7. In their working paper "Who uses robo-advising and how?" Baulkaran1 and Jain (2023) show from India data that users of robo-advisory services are relatively young, predominantly male, married, small investors, and professionals. There may be no such thing as a "pure" robo-advisors. Two of the largest independent robots are Wealthfront and Betterment. Both have client service representatives and expanding business models. From the industry viewpoint, the robot model is useful because it makes clients with relatively modest investable assets more economically viable to service. In this section, we describe some financial institutions which use robo-advising to manage their portfolios.

Royal Bank of Scotland

Royal Bank of Scotland together with IBM is piloting a robot that will answer customer questions and pass requests on to the right agents (Davradakis, Emmanouil; Santos, Ricardo (2019) p. 9).

SEB Bank

Sweden's SEB bank became the first bank to use IPsoft's cognitive technology for customer services. (Davradakis, Emmanouil; Santos, Ricardo (2019) p. 9).

Sberbank

Sberbank invested about USD 1 billion toward this aim, e.g. via its research labs dealing, among other things, with robotics, blockchain, and artificial intelligence (AI) (Allinger, Barisitz, and Timel (2022).

Vanguard Personal Advisor - around $32 billion in assets

One example which has grown dramatically recently is the Vanguard personal advisor services which were re-branded after being around for a long time, a couple of years ago as a robot. By June of 2015, it had $21 billion of assets, as of the first quarter of 2019 it had almost 116 billion. By all accounts, it's the largest financial Robo. Vanguard Personal Advisor Services rebranded as a robot in May 2015. By June it had $21.2 billion AUM1, and $115 billion as of 1st quarter of 20192, and is likely the largest robot. Wealthfront has $11 billion AUM as of 1st quarter of 2019. (Betterment overtook Wealth Front's AUM in July 20153, and has $16 billion as of 1st quarter of 2019) 90% of Wealthfront AUM is in Vanguard funds 3. Betterment caught up with Wealthfront by pivoting its business model to emphasize DC plan sales to small companies. Over the last three years, various large brokerages or asset managers have acquired or built robots or robot-like offerings (e.g., Schwab, Merrill Lynch); and Fidelity controls much of Betterment's order flow and earns referral fees

Betterment - around $6 billion in assets

Betterment, in some sense, is viewed to have caught up with Wealthfront by pivoting its business model to emphasize defined contribution plan sales in smaller companies, which historically has not been the bailiwick of Wealthfront.

Over the last several years, certain large brokerages and asset managers have acquired, built, or develop robo-like offerings. Firms like Blackrock, Schwab, Merrill. Fidelity controls much of the Betterment order flow, and of course, also earns referral fees in doing so.

Wealthfront - around $5 billion

Wealthfront, which is another top 10 firm, has about $11 billion of assets as of the first quarter of 2019. Betterment overtook Wealthfront AUM back in 2015, and we'll discuss that in a second, having about $16 billion as of the same mark to market. 90 percent of Wealthfront assets have been placed in Vanguard funds as part of the underlying strategy across asset allocation categories. Wealthfront in particular uses a model that is called the Black-Litterman model for thinking about expected returns. The model uses the capital asset pricing model, as an anchor. The capital asset pricing model tells us something about how expected returns are determined. Although this particular equation may look like a little bit of math, it has a relatively simple interpretation. What this particular expression is saying is that the expected return on an asset ought to be equal to the risk-free rate, plus a measure of risk that's given by the ratio of the covariance of the return on the asset with a return on a market portfolio, divided by the variance, multiplied by a risk premium, the risk premium on the market portfolio. People often see this written as the expected return is the risk-free rate plus the Beta times the market risk premium. The concept behind the CAPM is relatively simple and it says that any investor can invest in a broad market portfolio. So if the investor can invest in a broad market portfolio, the amount of risk that we're taking on by investing in an individual asset is quantified by how much that asset co-moves with the return on the market portfolio.

If it comoves more, that means when the market portfolio does well, the asset goes up by more in value, but when the market does poorly, the asset goes down more in value. We usually think of times when market returns are low or when asset prices fall as being bad times. So by investing in an asset that has a high Beta, we're going to have very low returns at exactly the time when we would like to have relatively high returns, that is to say, bad times or recessions. As a result, we think we get a higher expected return for investing in these more risky assets. What I'm showing you on this particular slide is a set of numbers from a wealth-front white paper as to what they

expect the returns on different asset classes to be. US stocks, which are typical US equities, and foreign developed stocks, which are equities in developed markets such as Germany, the United Kingdom, Japan, etc. Emerging market stocks are the stocks of economies that are not quite as developed such as those of Mexico, Argentina, or say Thailand, or the Philippines. Dividend stocks are stocks that pay high dividends, and then the remaining asset classes are different areas of the economy outside of stocks. Natural Resources refer to areas of the economy such as oil and minerals. Real estate encompasses both residential and corporate real estate. US government bonds are those bonds issued by the US treasury, tips are bonds issued by the treasury that have inflation protection.

Municipal bonds are issued by states and local entities and usually have some tax advantage associated with them, US corporate bonds are issued by US corporations, and emerging market bonds are generally the bonds of emerging market governments, so similar to treasury bonds but being issued by the government of Mexico for example, and then risk parody. Wealthfront e.g. is going to solve your particular risk tolerance. As we discussed previously, the second major input to an asset allocation problem is the risk involved in a particular asset class. Wealthfront estimates for the risk involved in each of the individual asset classes has captured by their return volatility. The main thing to see from this particular slide is that there is a lot of variation in the risk of the different asset classes. At the lowest end of the spectrum, US government bonds have an annual volatility of only about four percent, municipal bonds of five percent, tips of six percent, and US corporate bonds of seven percent. At the higher end of the spectrum are typically equities. Our stocks have a volatility of 15 percent. At the highest end, emerging market stocks have a volatility of 23 percent.

So the trade-off between these different asset classes is going to depend on the individual investor's risk tolerance, A higher risk tolerance will tend to shift more of

the portfolio allocation to the US in emerging market stocks and away from the bond investments.

What this allocation is showing is that the vast majority of money is being invested in stocks, US stocks, foreign stocks, emerging markets, and dividend stocks. A fairly small fraction of my money is being invested in bonds, corporate bonds, and emerging market bonds. Finally, 90 percent of this portfolio was invested in US stocks and real estate, and about 10 percent was invested in corporate and emerging market bonds. Wealthfront is doing in this particular situation is taking the risk tolerance reflecting how willing you are to take on the standard deviation of a portfolio and allocating my assets among these different portfolios to achieve a target standard deviation with as high of an expected return as possible.

The asset allocations vary across the entire spectrum. The risk score can go from 0-10. This corresponds to an amount of volatility that one is willing to take on, which is commensurate with his utility function. One example is an investor who has a risk score of zero will take on a volatility of five percent in her portfolio, whereas an investor who has a risk score of 10 will take on a volatility of 15 percent in her portfolio. Each score or each unit of score represents an additional one percent per year of volatility. Again, the key thing to notice here is that as we go to the left end of the risk aversion scale, for those investors who have a relatively low-risk tolerance, there is relatively little allocation placed in orange, yellow, and brown securities, which are relatively risky, and much more are placed in light blue and dark blue securities which are relatively safe. For risk-averse investors, what we wind up seeing is that there is a fairly small allocation that's going to stocks, emerging markets, and other similar securities in the neighborhood of around 25-30 percent, whereas for our more risk-tolerant investors, about 90 percent of the allocation is going to these riskier asset classes. In 2019, it was reported that Wahed, a US-based investment fund company,

had become the first globally accessible halal robo-advisor for Islamic value-based investing (Sahabuddin et al. 2023 p. 131).

8. Artificial intelligence (AI) is expected to have a significant impact on robo-advising. Grennan and Michaely (2021) observed 290 FinTechs and 57% use artificial intelligence (AI) to generate investment signals. By using artificial intelligence, banks can offer chatbots, virtual assistants, and Robo-advisors that establish a direct connection with clients and enable the delivery of multiple services (Pal and Singh 2019). AI can analyze vast amounts of data and extract valuable insights to inform investment strategies. By leveraging machine learning algorithms, robo-advisors can continuously learn and adapt to changing market conditions, allowing for more accurate predictions and better-informed investment decisions. AI can help robo-advisors provide more personalized recommendations and tailored investment strategies. By analyzing individual preferences, risk tolerance, financial goals, and other relevant factors, AI algorithms can create customized portfolios that align with each investor's specific needs. AI-powered robo-advisors can utilize natural language processing capabilities to communicate with investors more effectively. They can understand and respond to investors' queries, provide explanations, and conversationally offer guidance, making the overall user experience more intuitive and engaging.

AI can enhance risk management techniques used by robo-advisors. By continuously monitoring market trends, news, and economic indicators, AI algorithms can identify potential risks and adjust investment strategies accordingly. This real-time risk assessment can help mitigate losses and maximize returns. AI can incorporate insights from behavioral finance into robo-advising. By analyzing investor behavior, sentiment, and biases, AI algorithms can account for emotional factors that may influence investment decisions. This can lead to more effective strategies that align

with investors' psychological tendencies and promote better long-term outcomes. AI-driven automation can streamline various aspects of robot advising, including portfolio rebalancing, tax optimization, and trade execution.

By reducing manual intervention and minimizing human error, AI can enhance operational efficiency, lower costs, and deliver a more seamless and consistent user experience. AI-powered algorithms can help detect fraudulent activities and enhance cybersecurity measures within robo-advisory platforms. By analyzing patterns, anomalies, and historical data, AI can identify potential threats, protect investor information, and ensure the integrity of transactions. Overall, the integration of AI into robo-advising has the potential to improve decision-making, increase personalization, and enhance the overall efficiency and effectiveness of the investment process. However, it is important to ensure that appropriate safeguards are in place to address ethical considerations, data privacy, and transparency, as the reliance on AI algorithms introduces new challenges and responsibilities for both providers and regulators. Robo-advisory, in comparison to humans, may offer superior returns because of the low cost of financial advisory stemming from the use of artificial intelligence (Brenner & Meyll, 2020; Lui & Lamb, 2018).

9.

9.1. Robo-advising offers several major advantages, starting with its structured processes. First and foremost, it provides accessibility and affordability to a broader investor base. Traditional financial advisors often require higher minimum investments and charge substantial fees, making their services inaccessible to many. In contrast, robo-advisors offer low-cost solutions, enabling individuals with smaller portfolios to access professional-grade financial guidance (please refer to So (2021), p. 11). Also Philippon (2019) ON FINTECH AND FINANCIAL INCLUSION analyses the cost structure of roboavising. Moreover, robo-advisors deliver automation and efficiency

in portfolio management. Through automatic rebalancing, tax loss harvesting, and progress reporting, these platforms ensure that investment strategies remain aligned with investors' goals and adapt to changing market conditions. The systematic and emotion-free nature of robo-advising eliminates biases and impulsive decision-making, promoting a disciplined and rational investment approach. Users do not need in-depth specialist knowledge to answer questions as they are kept clear and simple.

The registration process with a Robo Advisor is straightforward, requiring users to open a clearing account with the provider's partner bank and transfer their investment amount or monthly savings installments. The Robo Advisor then accesses the account and implements the selected investment strategy. Most robo-advisors use investment strategies based on Exchange Traded Funds (ETFs) or index funds, which provide broad diversification by mapping various relevant indices without active fund management. These funds have low costs, resulting in better returns compared to traditional investment funds. Investors benefit from risk diversification, automated transactions, and cost savings (cost reductions of robo-advisory in Rubini 1019 p. 90).

Robo-advisors act as intermediaries between investors and their investment portfolios. Unlike human fund managers, the algorithms used by robo-advisors make objective decisions based on mathematical models for risk management. It is important to note that from a legal standpoint, robo-advisory operates in a gray area, and most providers exclude liability. Conducting a thorough robo-advisor comparison can provide valuable guidance, as conditions, services, and investment strategies may vary between providers. The number of investment strategies offered also differs, so it's essential to study the available options carefully. Intelligent tools provided by the robo-advisor should display available funds and offer detailed reporting. Providers approved as intermediaries according to Section 34f of the Commercial Code in Germany can only present standardized portfolios and must work with third parties as brokers. Therefore, investors must initiate recommended adjustments themselves.

Conversely, a financial portfolio manager licensed according to Section 32 of the German Banking Act can make and implement all decisions based on an analysis of the investor's specifications, within defined parameters, and under the supervision of German regulator BaFin. In 2016 Faubion prove that Robo-advisors promise to be the next step in the evolving world of retirement planning.

Many robo-advisors use portfolios with static weightings, such as 40 percent equities and 60 percent bonds, based on the "modern portfolio theory" developed by Markowitz in the 1950s. However, technological advancements have surpassed this approach, and modern robo-advisors use technology-driven models that dynamically adjust portfolio weightings based on risk tolerance and expected returns. These adjustments aim to maintain a constant level of risk, made possible by today's computing power. Robo-advising combines the precision and efficiency of technology with the personalized touch of investment advice, making it an art of fintech. It offers a lean and transparent cost structure for capital investment, allowing individuals to invest in relatively small amounts. Automated processes save time and effort, and convenient and risk-minimizing diversification is achieved across different asset classes. However, robo-advising does not provide real advice, and investment strategies are largely standardized, lacking individualization. Providers generally do not offer in-depth inquiries, so investors should possess solid basic knowledge. Costs are still higher compared to self-initiated investments, but lower than those associated with traditional human financial advisors (opposing traditional finance: Rossi und D'Accunto 2021).

Another significant advantage of robo-advisors is periodic rebalancing. Typical investment portfolios may become unbalanced if one asset class performs exceptionally well, resulting in overexposure to that class. Robo-advisors automatically monitor portfolios and rebalance them to maintain the desired asset allocation. They also consider changes in age, life situations, and risk tolerance to ensure an optimal

asset allocation for investors. Robo-advising makes investing more accessible to a wider range of individuals, eliminates the need for large minimum investment amounts, and offers lower fees compared to traditional human financial advisors. It provides a convenient and user-friendly investment experience, with 24/7 accessibility. Robo-advisors employ modern portfolio theory, rely on data-driven decisions, continuously monitor portfolios, and offer transparency. However, it's important to acknowledge that while robo-advising has its advantages, it may not suit everyone, particularly those seeking personalized guidance or facing complex financial situations.

9.2. Robo-advisors, relying on algorithms and automation, may not offer the same level of personalized advice and tailored investment strategies as human financial advisors. They may not fully consider individual circumstances, goals, or risk tolerance. The technology-driven nature of robo-advising can result in a lack of human interaction, which may be preferred by some investors who seek guidance, reassurance, and emotional support during market volatility or major life events. Robo-advisors may not be equipped to handle complex financial situations that require in-depth analysis, customized strategies, or specialized knowledge. They typically focus on simpler investment needs and may not be suitable for individuals with intricate financial situations or unique investment requirements.

Robo-advisors base their investment decisions on historical data and algorithms, which means they may not fully account for unpredictable market events or sudden changes in economic conditions. They may lack the flexibility to adapt quickly to new circumstances or emerging investment opportunities. While robo-advisors offer diversified portfolios, they often have a limited range of investment options compared to traditional financial advisors. Their focus on ETFs or index funds may not provide access to certain asset classes or specialized investment products that

could be beneficial in specific situations. Like any technology-based platform, robo-advisors are vulnerable to technical glitches, system failures, or cybersecurity risks. These issues could disrupt account access, compromise personal information, or lead to financial losses. Robo-advisors do not provide emotional guidance or behavioral coaching, which can be crucial during market volatility when investors may face the temptation to make impulsive decisions based on short-term fluctuations. Human advisors often offer guidance to help investors stay disciplined and focused on long-term goals. Algorithms used by robo-advisors rely on historical data and predefined rules, potentially lacking the same level of human judgment, intuition, or ability to interpret non-quantifiable factors that can impact investment decisions.

The regulatory landscape for robo-advisors is still evolving, resulting in uncertainties or legal gray areas regarding their operations, compliance requirements, and potential liabilities. It is important for investors to carefully review the terms and conditions, as well as the regulatory framework, to ensure their rights and protections are adequately addressed. Robo-advising may not be appropriate if you are knowledgeable about the financial market, prefer to develop and pursue an individual investment strategy and manage your portfolio independently. Opening a suitable custody account and trading with financial instruments that align with your style might be a better option. While processes in robo-advising are largely automated, they still require human intervention. Providers may differ in terms of necessary shifts, employee support, and customer training and education. Some companies use modern technologies exclusively for communication, while others digitally map a significant part of the process. Different authors warn of the risks of robo-advising (please refer to: Silva (2019)). However, it's important to recognize that robo-advising may not be suitable for all investors. Those with complex financial needs or a desire for a more hands-on approach may prefer the personalized touch of traditional advisors. Furthermore, concerns such as data privacy, regulatory compliance, and

algorithmic transparency warrant careful consideration as the industry continues to evolve.

10. *Explainability and Transparency*: Investigate methods to improve the explainability and transparency of AI-driven robo-advisors. Understanding how these systems make decisions is crucial for user trust and regulatory compliance.

Behavioral Finance Integration: Explore the integration of behavioral finance principles into robo-advisory algorithms. Understanding investor behavior and biases can lead to more personalized and effective investment recommendations.

Dynamic Risk Management: Research dynamic risk management strategies that allow robo-advisors to adapt portfolios in real-time based on changing market conditions and individual investor circumstances.

Integration of Alternative Data: Investigate the incorporation of alternative data sources, such as social media sentiment or macroeconomic indicators, into robo-advisory algorithms to improve predictive capabilities.

Hybrid Models: Explore hybrid models that combine the strengths of AI-driven algorithms with human expertise. Investigate how a collaborative approach can enhance decision-making and address complex financial scenarios.

Personalization and Customization: Study ways to further personalize and customize robo-advisory services to better meet individual investor preferences, financial goals, and unique risk tolerances.

Ethical Considerations: Examine the ethical implications of AI in robo-advising, including issues related to bias, fairness, and the responsible use of customer data. Develop frameworks for ethical AI in financial services.

Robo-Advising for Specific Asset Classes: Investigate the application of robo-advising to specific asset classes beyond traditional stocks and bonds, such as real estate, commodities, or alternative investments.

Natural Language Processing (NLP): Explore the integration of advanced natural language processing techniques to enhance communication between robo-advisors and users. This can improve user experience and comprehension.

Long-Term Performance Evaluation: Conduct longitudinal studies to assess the long-term performance and effectiveness of robo-advisory portfolios. Analyze how these portfolios perform during various market cycles and economic conditions.

Regulatory Compliance: Investigate how robo-advisors can continuously ensure compliance with evolving financial regulations and navigate the complexities of regulatory frameworks globally.

User Education and Trust: Explore strategies to enhance user education about robo-advisory services, addressing potential misconceptions and building trust in the technology.

Global Market Adoption: Study the adoption and acceptance of robo-advisory services in different global markets. Understand cultural, regulatory, and economic factors influencing the uptake of these technologies.

These research hints can serve as a foundation for exploring new dimensions and advancements in the intersection of AI and robo-advising. Researchers can delve into specific aspects based on their interests and the evolving landscape of financial technology.

11. Robo-advising seamlessly integrates artificial intelligence and financial expertise to craft individualized investment strategies. It delivers accessibility, affordability, and efficiency, featuring reduced fees and automated portfolio management. Despite concerns surrounding data privacy and regulatory adherence, robo-advisors prioritize security and ensure compliance with financial regulations. These platforms excel in minimizing risk, yielding returns, and aligning portfolios with investors' preferences. In essence, robo-advisory services serve investors by offering

tailored guidance and adept management of investment portfolios. The fee structure of robo-advisors typically ranges from 0% to 0.25% for basic services, significantly lower than the 1% to 1.5% charged by human financial advisors. Robo-advisors leverage index ETFs with lower management fees and automatically rebalance portfolios to maintain an optimal asset allocation. This cost-effective approach not only enables investors to save on fees but also facilitates early investment for those with smaller balances. However, it's noteworthy that certain robo-advisors may impose higher fees for personalized human advice or necessitate higher minimum balances. The integration of artificial intelligence in robo-advising facilitates data analysis, tailors recommendations, and fosters effective communication with investors. By enhancing the accuracy and adaptability of investment strategies, AI contributes to an improved overall robo-advising experience.

Literature

Agarwal, S., Driscoll, J., Gabaix, X., & Laibson, D. (2009). The age of reason: Financial decisions over the lifecycle with implications for regulation. *Brookings Papers on Economic Activity, 2*, 51-117.

Allinger, K., Barisitz, S., & Timel, A. (2022). Russia's large fintechs and digital ecosystems–in the face of war and sanctions. *Focus on European and Economic Integration, 3*, 47-65.

Alsabah, H., et al. (2021). Robo-advising: Learning investors' risk preferences via portfolio choices. *Journal of Financial Econometrics, 19*(2), 369-392.

Ambalangodage, N. B. (2019). CAN SLIM Method Vs Robo Advising Stock Market Simulation.

Anshari, M., Almunawar, M. N., & Masri, M. (2022). Digital twin: financial technology's next frontier of robo-advisor. *Journal of Risk and Financial Management, 15*(4), 163.

Barrau, T., & Douady, R. (2022). Artificial Intelligence for Financial Markets. No. hal-03929243. *HAL*.

Baulkaran, V., & Jain, P. (2023). Who uses robo-advising and how?. *Financial Review*.

Belanche, D., Casaló, L. V., & Flavián, C. (2019). Artificial Intelligence in FinTech: understanding robo-advisors adoption among customers. *Industrial Management & Data Systems*.

Biswas, S., Joshi, N., & Mukhopadhyaya, J. N. (ChatGPT in Investment Decision Making: An Introductory Discussion).

Brenner, L., & Meyll, T. (2020). Robo-advisors: A substitute for human financial advice? *Journal of Behavioral and Experimental Finance, 25*. https://doi.org/10.1016/j.jbef.2020.100275

Capponi, A., Olafsson, S., & Zariphopoulou, T. (2022). Personalized robo-advising: Enhancing investment through client interaction. *Management Science, 68*(4), 2485-2512.

Cheng, X., et al. (2019). Exploring the trust influencing mechanism of robo-advisor service: A mixed method approach. *Sustainability, 11*(18), 4917.

D'Acunto, F., & Rossi, A. G. (2021). Robo-advising. *Springer International Publishing*.

Davradakis, E., & Santos, R. (2019). Blockchain, FinTechs and their relevance for international financial institutions. No. 2019/01. *EIB Working Papers*.

Drasch, B. J., Schweizer, A., & Urbach, N. (2018). Integrating the 'Troublemakers': A taxonomy for cooperation between banks and fintechs. *Journal of Economics and Business, 100*, 26-42.

Faubion, B. (2016). Effect of automated advising platforms on the financial advising market.

Fisch, J. E., Labouré, M., & Turner, J. A. (2019). The Emergence of the Robo-advisor. *The Disruptive Impact of FinTech on Retirement Systems, 13*.

Grennan, J., & Michaely, R. (2021). Fintechs and the market for financial analysis. *Journal of Financial and Quantitative Analysis, 56*(6), 1877-1907.

Hao, R., et al. (2022). Beyond Performance: The Financial Education Role of Robo-Advising. Available at SSRN 4230191.

Hariri, W. (2023). Unlocking the Potential of ChatGPT: A Comprehensive Exploration of its Applications. *Technology, 15*(2), 16.

Kunschke, D., Spitz, M. F., & Pohle, J. (2022). Digitalisierung im Asset Management-Sektor–die Technologie verändert die Märkte, jetzt folgt die Regulierung. *FinTech*, 291-308.

Lam, J. W. (2016). Robo-advisors: A portfolio management perspective. *Senior thesis, Yale College, 20*.

Lui, A., & Lamb, G. W. (2018). Artificial intelligence and augmented intelligence collaboration: Regaining trust and confidence in the financial sector. *Information & Communications Technology Law, 27*(3), 267–283. https://doi.org/10.1080/13600834.2018.1488659

Marszk, A., & Lechman, E. (Eds.). (2021). The digitalization of financial markets: The socioeconomic impact of financial technologies. *Routledge*.

Nathmann, M. (2019). FinTech.

Pal, S. N., & Singh, D. (2019). Chatbots and virtual assistant in Indian banks. *Industrija, 47*(4), 75–101. https://doi.org/10.5937/industrija47-24578

Philippon, T. (2019). On fintech and financial inclusion. No. w26330. *National Bureau of Economic Research*.

Phoon, K. F., & Koh, C. C. F. (2018). Robo-advisors and wealth management. *Journal of Alternative Investments, 20*(3), 79.

Rossi, A. G., & Utkus, S. P. (2020). Who benefits from robo-advising? Evidence from machine learning. *Evidence from Machine Learning (March 10, 2020)*.

Rubini, A. (2018). Fintech in a flash: financial technology made easy. *Walter de Gruyter GmbH & Co KG*.

Rühr, A. (2020). Robo-advisor configuration: an investigation of user preferences and the performance-control dilemma.

Sahabuddin, M., Ahmad, A. U. F., & Islam, M. A. (2023). Emergence of Islamic Finance in the Fourth Industrial Revolution and COVID-19 Post-Pandemic Era. *Palgrave CIBFR Studies in Islamic Finance*, 123-141.

Seppälä, T., Mucha, T., & Mattila, J. (2023). The Fifth Wave–BRIE-ETLA Collection of Articles. *The Research Institute of the Finnish Economy*.

Silva, P. M. (2019). Robo-advising: unfolding the risks.