

Decentralized Autonomous Organization (DAOs) in Italy: Legal and Regulatory Reforms within the Italian Third Sector (TS) and its effect on Blockchain Innovation

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Abstract: This study aspired to do the groundwork for transformational and innovative shift in corporate governance and the third sector (TS) orienting legal as well as regulatory frameworks with the growth and development in decentralized governance models and blockchain technology in Italy. This abstract sums up the foundational facets of legal investigation behoove by the onset of DAOs in Italy, circumscribing its scope, objective, and its significance. This research provides the analysis and understanding of interactions and interconnections amongst DAOs and Italian corporate law highlighting the legal complexities and suggesting for legal and regulatory reforms to get rewarded from this innovational paradigm presented by DAOs. A substantial focus is placed on integration and incorporation of DAOs in Italy's Third Sector Organizations (TSOs), prospecting key challenges such as recognition, liability and compatibility with existing frameworks and required mandatory legal reforms to facilitate this process. The constitutional perspective on DAOs and such reforms is also discussed to foster blockchain innovation in Italy while guaranteeing compliance of consumer protection values and standards with financial regulations and formation of safe and secure ecosystem for DAOs operations. This research intends to advocate for the recognition and codification of DAOs in Italy within TSOs by taking guidance from global best practices.

Keywords: *Blockchain Technology, Decentralized Autonomous Organizations (DAOs), Third Sector Organizations, Italian third sector, DAO operations, Legal and regulatory Framework for DAOs*

Introduction

DAOs, or decentralized autonomous organizations, are new kind of organization in the blockchain space that are based on decentralized governance along with operation instead of centralized control. In the countries where codification of laws and regulations pertaining to digital assets are still in developing stage, the emergence of DAOs in such states poses substantial legal and regulatory barriers. The Italian republic is leading the way in getting to grips with these affairs within the framework of Europe by virtue of its strong cultural and legal legacy. This study strives to evaluate how Italian third-sector (ITS) legislative reforms and regulatory frameworks collaborate and blend with innovative blockchain technologies, with a definite concentration upon DAOs. Latest paramount adaptations to legal system of Italy have revamped and technologize the country's attitude to the ITS, that encloses social enterprises and numerous non-profit organizations. The acknowledgement of legal status and operations of DAOs and blockchain technology may open doors for the country via such developments, that make them exceptionally significant. It is of high priority to understand this legal environment and Italy's ability to attuned to and blend in with newly discovered decentralized organization models as the country is giving thought to develop itself as an international hub or hotbed for innovative technology. The current analysis directs an extensive view, looking at the ITS's regulatory environment, latest amendments and modifications in legislation, and the legal standing of DAOs in Italy. This research explores how blockchain innovation is being influenced and effected by the legal framework of Italy and what are its repercussions and implications in the future. This all has been done through a careful and in-depth evaluation of existing legislations, judicial precedent, and legal arguments. During the course of assessing how DAOs may integrate into the Italian third sector (ITS), said research augments to the broader conversations about the legal status of DAOs and how they impact practical progression.

Significance of this research

A foundational blockchain technology governs DAOs, ensuring that documents are safe, open, and immutable.¹ In the default of traditional hierarchical organizations, decentralized, communal decisions are made probable with blockchain-based DAOs. The concept of DAOs purports a consequential

¹ Nakamoto, Satoshi. "Bitcoin: A Peer-to-Peer Electronic Cash System." (2008) Decentralized business review. Also available at: [Bitcoin.org](https://bitcoin.org).

divergence from typical organizational models by promoting an open, democratic, consensus-based environment where decisions and resolutions come through means of agreement. This innovative technology i.e. blockchain has been growing staggeringly in recent years because of the mushrooming of cryptocurrencies, in the financial sector likewise in number of other lines of businesses. Automated, self-executing contracts, or smart contracts, are made achievable by its ground-breaking application in DAOs development.² These agreements based on smart contracts entitle DAOs to function autonomously by positioning decisions into actions stemming from pre-arranged guiding principles noted on the blockchain³. The maintenance of a secure as well as decentralized transaction record is one of the primary characteristic of blockchain technology.⁴ This innovation make DAOs autonomous and invulnerable to fraud by apprehending the decision-making besides transactional processes in an unalterable and indestructible manner.⁵ Addressing DAOs and blockchain technology, the legal landscape in Italy is perpetually changing. Given Italy's long history of civil law, it is an enormous effort to integrate these state-of-the-art digital organizations into the current corpus of legislation. Since DAOs were first introduced in Italy, a number of legal issues have arisen, including whether or not they should be treated as legal corporations, whether current corporate rules apply to DAOs, and whether or not decentralized decision-making processes will expose liability issues.⁶ DAOs hold great importance in Italy, going beyond their legal recognition and regulatory challenges. Potential adjustments to corporate governance, banking, and governmental operations are included. Italy may streamline corporate procedures, enhance transparency in governance, and update its legal system with the aid of DAOs. Participating in thorough research regarding DAOs is necessary before integrating into these technologically advanced organizations in order to ensure legal compliance with Italian legislation and protect stakeholders' interests.⁷ The Italian government's devotion to blockchain technology is demonstrated by the fact that it is included

² Buterin, Vitalik. "A next-generation smart contract and decentralized application platform." [2014] 37 (3) white paper 2-1.

³ Ibid.

⁴ Tumasjan, Andrank, "The promise and prospects of blockchain-based decentralized business models" [2024] In Knowledge and digital technology; Cham: Springer Nature Switzerland pp 203-224.

⁵ Mahmoud, Amr Ibrahim Abbas "Exploring the potential of DAOs: a comprehensive study of decentralized autonomous organizations" [2022].

⁶ European Blockchain Observatory and Forum. "Blockchain Innovation in Europe." European Commission (2019).

⁷ Pilkington, Marc., Blockchain Technology: Principles and Applications, (Edward Elgar Publishing, 2016) Research Handbook on Digital Transformations.

in the nation's digitization agenda. Italy may lead the way in blockchain innovation in Europe if regulations were created to detect and regulate DAOs, as this suggests.⁸

Scope of the research

The key idea of this work is to scrutinize possible repercussions of the Italian legal system for canonical legal concepts for instance identification of an entity, accountability, and the conceivable benefits of DAOs.⁹ It is a dedicated effort and grind to come up with all-inclusive analysis of how DAOs are and could be incorporated in Italian legal system, with a concentration on corporate governance (CG), regulatory compliance (RC), and duty of care¹⁰ (i.e liability). This research will also look into the plausible effect of DAOs on corporate practices and structures of governance in Italy. The current study takes in different fields of study that includes economics, technology, and law. It is resorting to address the legal issues that DAOs whip up together with the real-life ramifications of DAOs in a spectrum of industries. By reviewing the available literature, codified laws, and case laws from Italy and other countries, this study tries to carry out a complete analysis of DAOs as well as the stationing of blockchain-based technologies within the jurisdiction of Italy. This research further covers how DAOs strikes at classical models of company along with administration of Italian public sector and private sector. It will discuss how these sectors could be remodeled by making use of DAOs¹¹ to enact better transparent, efficient, and autonomous processes.¹² The research will probe into the high tech and innovational foundations of DAOs and blockchain, presenting an extensive analysis of the operations, functions and revolutionary prospects attached with these technologies. This practical frame of reference must be fully grasped so as to unravel the legal consequences of DAOs.¹³ This research transcends a legal critique to take in socioeconomic contemplations. It intends to explore

⁸ Ministry of Economic Development, "National Strategy on Blockchain Technologies." (2019).

⁹ Wright, Aaron, and Primavera De Filippi. "Decentralized Blockchain Technology and the Rise of Lex Cryptographia" (2015). SSRN Electronic Journal 2580664.

¹⁰ Catalini, Christian, and Joshua S. Gans. "Some simple economics of the blockchain" [2020] 63 (7) Communications of the ACM 80-90.

¹¹ Tapscott, Don, and Alex Tapscott, *Blockchain Revolution: How the Technology Behind Bitcoin Is Changing Money, Business, and the World*, (Portfolio/Penguin, 2016).

¹² Rikken, Janssen, and others, "Governance challenges of blockchain and decentralized-autonomous-organizations" [2019] 42 (4) Information Polity (IP) 400-414.

¹³ Mougayar, William, *The Business Blockchain: Promise, Practice, and Application of the Next Internet Technology*, (Wiley, 2016).

how Italian society is affected by these DAOs, taking into account how they could be a dissenter from conventional hierarchies, advancing innovation, and autonomize the process of decision making.¹⁴The article will also offer recommendations on how DAOs might be incorporated into Italy's legal framework.¹⁵ These steps aim to ensure that DAOs operate in manner that simultaneously adheres to Italian law and helps society by finding an equilibrium amongst innovation and protection from the law.

Review of Literature

With a special emphasis on the Italian legal environment and how it affects blockchain innovation, this literature review attempts to compile the most recent scholarly discussions, legal assessments, and practical concerns pertaining to autonomous agents (DAOs). DAOs, as originally conceived by Jentzsch (2016), are decentralized autonomous organizations (DAOs) that are run by consensus among their members using smart contracts on a blockchain.¹⁶ By classifying DAOs as a novel type of legal entity that is difficult to incorporate into preexisting frameworks, Wright and De Filippi's (2015)¹⁷ theoretical framework investigates the legal confusion surrounding DAOs. These underlying theories point out the innovative course of actions and the legal pitfalls and drawbacks that DAOs pose.¹⁸ Analogous to the global legal communities' wary standpoint with regards to this new organization, the legal standing of DAOs within Italy has not been conscientiously accepted and codified via legislation. The adaptable nature of legal framework of Italy, distinctly in the Third Sector (TS) may howbeit, confer a conducive and propitious environment for incorporating DAOs, as maintained by comparative study presented by Schrepel (2018).¹⁹The research done by Fenwick, Kaal, and Vermeulen (2019)²⁰ extends certitude to the fact, as the authors contend for workable legal and regulatory systems that would be capable of modification in result of technological development. They have also sug-

¹⁴ Swan, Melanie, *Blockchain: Blueprint for a New Economy*, (O'Reilly Media, 2015).

¹⁵ Catalini, Christian, and Joshua S. Gans, "Some Simple Economics of the Blockchain." [2016] MIT Sloan Research Paper.

¹⁶ Jentzsch, Christoph, "Decentralized Autonomous Organization to Automate Governance." [2016] White Paper 1-31.

¹⁷ Wright, Aaron, and Primavera De Filippi, "Decentralized Blockchain Technology and the Rise of Lex Cryptographia" [2015] SSRN Electronic Journal 2580664.

¹⁸ *Ibid.*

¹⁹ Schrepel, Thibault, *Blockchain and Antitrust: The Decentralization Formula*, (Cambridge University Press, 2018).

²⁰ Fenwick, Mark, Wulf A. Kaal, and Erik PM Vermeulen, "Regulation Tomorrow: What Happens When Technology Is Faster Than the Law?" [2019] 6 *American University Business Law Review* 561.

gested that DAOs would possibly be protected by Italy's contemporary legal reforms in the digital sphere. This is one of the new developing areas of research in Italy focusing solely on relationship between DAOs and blockchain technology. A 2022's report released by PWC²¹ reiterates the extending blockchain ecosystem in Italy and give prominence to how DAOs have the potential to transmute the third-sector by enhancing efficiency, transparency and participation of stakeholder. Catalini and Gans (2016)²² reassert this observation, deliberating the unconventional potential of this latest technology of blockchain in numerous businesses and accentuating the exigency for regulatory frameworks that promote innovation while providing legal protection to DAOs. As a consequence of its autonomous character and decentralization, governance models for DAOs raise three common and very critical legal concerns that includes regulation, liability, and recognition. The complex procedure of recognizing DAOs as legal personality, which is main requisite for their complete legal recognition and codification, this stance was forwarded by De Filippi and Wright (2018). The authors discussed an innovative concept that is to work in a parallel manner which permits DAOs to function autonomously of currently available legal frameworks whilst still having their own autonomous governance models operating synchronously.²³ In line with Savelyev's (2017)²⁴ insights regarding the opportunities and legal challenges faced by smart contract-driven organizations, this model proposes means for Italy to identify and govern DAOs.²⁵ Using an extended Technology Acceptance Model (TAM), the research done by Mauro Sciarelli et.al.,²⁶ sheds light on how blockchain technology is being embraced by forward-thinking Italian businesses, highlighting the critical roles that technological infrastructure, innovation-focused cultures, and regulatory frameworks play. The present study emphasizes on the importance of a favorable legal framework in enabling the assimilation of blockchain innovations, like DAOs, into Italy's Third Sector. Over and above that, it corroborates the

²¹ PWC, "Blockchain Ecosystem in Italy" (osservatori.net, 2022). Available at: <<https://www.pwc.com/it/it/publications/docs/pwc-blockchain-ecosystem-italy.pdf>> accessed on 10 Feb 2024.

²² Catalini, Christian, and Joshua Gans, "Some Simple Economics of the Blockchain" [2016] SSRN Electronic Journal.

²³ De Filippi, Primavera, and Aaron Wright, *Blockchain and the Law: The Rule of Code*, (Harvard University Press, 2018).

²⁴ Savelyev, Alexander, "Contract Law 2.0: 'Smart' Contracts as the Beginning of the End of Classic Contract Law"[2017] 26(2) *Information & Communications Technology Law* pp. 116-134.

²⁵ *Ibid.*

²⁶ Sciarelli, Mauro, Prisco, Anna, Gheith, Mohamed Hani, and Muto, Valerio, 'Factors Affecting the Adoption of Blockchain Technology in Innovative Italian Companies: An Extended TAM Approach' [2022] 15 *Journal of Strategy and Management* 495-507.

hypercritical interrelationship between legal reforms, technological awareness, and organizational culture in thrusting the acceptance and validation of blockchain technology. The outcomes specify areas where existing legislation may necessitate to be developed for the purpose of supporting the successful implementation of blockchain technology in Italy, furthermore, they propounded that if we tackle the legal and regulatory challenges, it would remarkably escalate the adoption of DAOs. Christine V. Helliara et al.,²⁷ in their research demonstrated far-reaching observations about the ramifications of these developments for the legal and regulatory frameworks that hem in DAOs in Italy. This piece of research is considered to be an important one for anyone to be interested to study about the complicated legal concerns and challenges that blockchain technology bring up for Italian Third Sector (ITS). In an effort to balance the aspiration for technological advancement in conjunction with prerequisites of protection of stakeholders and mechanism for accountability, it denotes the worth of adaptable legal systems which are competent enough to support the innovatory attributes of DAOs. The authors highlighted grey areas in the legal regime and argued for a regulatory framework that recognizes the extraordinary and novel features of permissioned and permissionless blockchains. This will authorize DAOs to strengthen social innovation even so being governed by settled legal guidelines. This research foregrounds the necessary discussion amongst technology advancements and legal-limitations, providing a framework for the incorporation of DAOs into Italian legal framework.

Operational Mechanisms of DAOs and Blockchain

DAOs, which combine blockchain technology with organizational governance, are a revolutionary development in the legal and digital fields. The idea, workings, legal issues, and noteworthy advancements of DAOs are all examined in this piece of writing, which concludes with a discussion of the legal ramifications for Italy's Third Sector and the more general law changes that are required to make room for such creative organizations. In 1996, Nick Szabo coined the word "DAO" to describe the groundbreaking potential of smart contracts to automate governance and decision-making processes, hence revolutionizing collective organization²⁸. With the use of token holders' decisions, a decentralized autonomous organization (DAO) is enabled

²⁷ Helliara CV, Crawford L, Rocca L, Teodori C, Veneziani M, 'Permissionless and Permissioned Blockchain Diffusion' (2020) International Journal of Information Management <https://doi.org/10.1016/j.ijinfomgt.2020.102136>.

²⁸ Szabo, Nick, "Smart contracts: Building blocks for digital markets, Extropy." [1996] 26 (18) The Journal of Transhumanist Thought 2-20.

through the use of blockchain technology, mainly Ethereum. The three key players in the DAO's ecosystem i.e curators, contractors, and token holders, make up its fundamental structure. Smart contracts, a kind of self-executing contract in which every agreement's condition is embedded right into the code, are the foundation of DAOs. With the use of blockchain technology, these contracts ensure transparent and independent adherence to the organization's rules while facilitating trustless transactions.²⁹ Different jurisdictions have quite different legal recognitions for DAOs. A few nations have started to create legal frameworks to support DAOs after realizing the promise of blockchain technology.³⁰ Depending on the legal framework already in place in the area, these frameworks will treat DAOs as partnerships, legal people, or other entities.³¹ Smart contracts enable DAOs to operate by letting token holders vote and invest in potential projects, which are then carried out by contractors. Decisions are made collectively, decentralized, and transparently under this type of democratic governance. Although its ambitious initiative was hampered by a catastrophic security breach in 2016, the DAO, which was founded on the Ethereum network, represents this concept. The 2016's DAO attack, which was caused by a coding error, prompted a review of the laws governing digital assets and smart contract governance. The need to carry out a 'hard fork' in order to retrieve the pilfered cash subsequently generated discussion regarding the validity and legality of taking advantage of these vulnerabilities, emphasizing the tension between the blockchain's immutability and the need to correct unexpected consequences. Different countries around the world have different views on DAOs' legal standing, including regulations, token issuance, and classification. As stated in the DAO Report, the United States Securities and Exchange Commission (SEC)³² adopted a stand that was further clarified in the FinHub Guidance on the classification of crypto assets. The SEC claimed that tokens might be regarded as securities under federal laws.³³ Conversely, in order to promote innovation while guaranteeing consumer safety, the Financial Conduct Authority (FCA)³⁴ of the UK has taken a technology-neutral stance, high-lighting the

²⁹ Werbach, K., 2018. Trust, but verify: Why the blockchain needs the law. *Berkeley Technology Law Journal*, 33(2), pp.487-550.

³⁰ Iansiti, Marco, and Karim R. Lakhani. "The Truth About Blockchain." *Harvard Business Review* (2017).

³¹ *Ibid.*

³² U.S Securities and Exchange Commission, "Report of Investigation Pursuant to Section 21(a) of the Securities Exchange Act of 1934: The DAO," [2017].

³³ U.S. Securities and Exchange Commission's Strategic Hub for Innovation and Financial Technology (FinHub), "Framework for 'Investment Contract' Analysis of Digital Assets," 2019.

³⁴ Financial Conduct Authority (FCA), "Guidance on Cryptoassets," 2019.

possibilities and hazards of initial coin offerings (ICOs) and integrating DLT companies into its regulatory sandbox. Regulation of DAOs and related technology has started to be recognized by several authorities. With its official recognition of DAOs, Wyoming, USA, became a trailblazer and paved the way for other areas to follow. Parallel to this, the European Union aims to integrate regulation-based approaches towards financial innovation, including DAOs, through programs that include the Global Financial Innovation Network, which is headed by the FCA.³⁵ Significant legal reforms are required in Italy in order to resolve the uncertainties pertaining to DAOs' governance, operation, and legal standing as part of the country's Third Sector integration. Examining global best practices and legal frameworks would help the Italian strategy line with programs that support innovation and guarantee consumer protection and compliance. *Blockchain technology* has legal implications for privacy and data protection, particularly in light of regulations like the General Data Protection Regulation (GDPR) in Europe. Since blockchain technology is permanent and transparent, it presents unique challenges for privacy legislation that require innovative legal answers.³⁶ DAOs distribute governance among members through the use of blockchain technology. By allowing for decentralized control, smart contracts with programmable rules assure their autonomous operation. Fintech, supply chain management, and public sector are just a few of the areas in which Italy has demonstrated devotion to blockchain technology through a number of initiatives. In order to test and promote blockchain innovation within a supporting legal framework, the government has started regulatory sandboxes and pilot programs. Although blockchain technology is gaining popularity, Italy is having trouble integrating new technologies with its antiquated legal systems and ensuring regulatory clarity. Nonetheless, these obstacles also offer chances for legislative adjustments that can promote blockchain innovation and adoption, such as the incorporation of DAOs within the Italian legal and economic sphere. Understanding DAOs, the importance of the Italian third sector, and the current situation of blockchain innovation in Italy is made easier after reading this section. It emphasizes how legislative changes could influence how DAOs and blockchain technologies develop in the nation. Unlike conventional organizations, decentralized autonomous groups lack a single, central authority. Consequently, DAO integration into the traditional, hierarchical company legal frameworks defining roles and re-

³⁵ Global Financial Innovation Network (GFIN). "GFIN - A Global Network for Financial Innovation," [2019]; Wyoming Legislature. "Wyoming Decentralized Autonomous Organization Supplement," [2021].

³⁶ Finck, Michèle, *Blockchain Regulation and Governance in Europe*, (Cambridge University Press, 2019).

sponsibilities will be challenging.³⁷ Because DAOs lack a central controlling body, questions arise about liability and legal obligations. Under standard corporate law, identifiable entities (like directors or shareholders) are assigned legal duties; however, the decentralized nature of DAOs complicates this assignment of legal duties.³⁸ DAOs are composed of entities that function independently under predetermined rules without centralized authority by encoding organizational policies and procedures into the blockchain³⁹. Italian legal norms are contested by this framework, especially with regard to regulatory compliance, contractual responsibilities, and corporate recognition. Recognizing the distinctive qualities of DAOs while maintaining accountability and participant safety, the adaptation of Italian legal system to enable such frameworks requires considerable legal innovation.

Legal Recognition and Codification of DAOs in Italy

Italian law has not yet specifically addressed the distinctive characteristics of DAOs, hence the official acceptance of DAOs in this country is still in its infancy. The decentralized and autonomous nature of DAOs, in contrast to typical corporate entities as defined by the Italian Civil Code, raises concerns regarding their governance, liability, and legal standing. As a divergence from the conventional wisdom guiding Italian company law, the difficulty is in granting legal identity to organizations without a physical location or centralized management.⁴⁰ In order to accommodate the decentralized design of DAOs while maintaining accountability and stakeholder protection, it would be necessary to change current laws or introduce new ones in order to recognize DAOs as legal entities. Italy has to carefully find the appropriate balance between promoting innovation and maintaining legal certainty when creating the regulatory structure for DAOs. A possible strategy would be to establish a special legal category for DAOs that acknowledges their special qualities and serves as a foundation for regulatory supervision. This might include laws governing the creation, management, and dissolution of DAOs; these laws would be similar to those governing corporations but would be specific to the decentralized structure of DAOs. A framework of

³⁷ Werbach, Kevin, "The Blockchain and the New Architecture of Trust" (MIT Press, 2018).

³⁸ Davidson, Sinclair, Primavera De Filippi, and Jason Potts. "Economics of Blockchain." [2016] SSRN Electronic Journal 2744751.

³⁹ Dimitri, Nicola, 'Voting in DAOs', [2023] 2(4) Distributed Ledger Technologies: Research and Practice pp.1-12.

⁴⁰ Cappiello, Benedetta, "Blockchain Based Organizations and the Governance of On-Chain and Off-Chain Rules: Towards Autonomous (Legal) Orders?" [2021] In Blockchain, law and governance, pp. 13-42 (Springer International Publishing, 2021)

this kind would also have to deal with matters of governance, liability⁴¹, and adherence to current legal requirements, such as those concerning consumer rights, data protection, and financial regulation.⁴² For legal framework based on centralized entities, the decentralized-governance model (DGM) of DAOs poses challenges and setback owing to the fact that it hedges and twines in traditional impressions of liability in tandem with accountability. Furthermore, applying financial laws to decentralized autonomous organizations (DAOs) introduces difficult issues with compliance as well as enforcement within a decentralized environment, such as know-your-customer (KYC)⁴³ and anti-money laundering (AML) laws.⁴⁴

There is a lot of interest in *codification initiatives* and legislative measures that can give DAOs a strong legal foundation as a result of Italy's road towards granting them legal recognition. The "Digital Administration Code" (Codice dell'Amministrazione Digitale)⁴⁵, which aims to modernize Italian legal framework to better accommodate digital innovations, including DAOs, which has sparked discussions pursuant to the Italian Parliament's recognition of the transformative potential of blockchain technology. By giving clarification upon the legal status, governance, and operational processes of DAOs, this legislative endeavor seeks at bridging the disparity in traditional legal structures and the requirements of decentralized digital entities. Likewise, legal experts and proponents of blockchain technology have proposed a "Blockchain Act" that would be comparable to Liechtenstein's revolutionary laws.⁴⁶ An act of this kind would explicitly address the complexities of blockchain-based organizations, providing precise criteria for DAO creation, management, and dissolution while guaranteeing compliance with wider legal and regulatory standards in Italy. With this legislation, DAOs would be officially recognized under Italian law for the first time, providing other countries with a model for addressing the legal issues raised by decentralized organizations.

⁴¹ Østbye, 'Exploring the Role of Law in The Governance of Cryptocurrency Systems and Why Limited Liability DAOs might be a Bad Idea' [2022] Available at SSRN 4007547.

⁴² Roy, S., 'The Impact of Blockchain Technology on Financial Regulations and Legal Frameworks' [2023] Available at SSRN 4521762.

⁴³ Kirimhan, Destan, "Importance of anti-money laundering regulations among prosumers for a cybersecure decentralized finance" [2023] 157 Journal of Business Research 113558.

⁴⁴ Syeda Husna Mehanoor, Mohammed Tariq Alam, 'A Study on Blockchain Technology and Real-World Applications' [2019] 9(4) Suraj Punj Journal For Multidisciplinary Research ISSN No: 2394-2886.

⁴⁵ Italian Parliament, 'Codice dell'Amministrazione Digitale' (2019).

⁴⁶ Liechtenstein, 'Blockchain Act: Token and Trustworthy Technology Service Providers Act (TVTG)' (2020).

Inclusion of Digital Assets in Legal Frameworks of Italy

Italy's legal frameworks must take into account DAOs because of their intrinsic connection to the larger ecosystem of digital assets. The problematic segment of the procedure is fathoming how to categorize and systematize these assets with an intent that they acquiesce with current property, securities, and tax rules whilst ruminating their differentiating qualities. The Italian Financial Markets Authority (CONSOB) has pushed forward an inquiry into prospective regulatory methods and strategies apropos of digital assets with the aspiration of protecting investors and providing for market stability whilst advancing innovation. Within the framework of this, digital tokens accounts for categorization or classification as instruments in sense of finance subject to current securities regulations, in addition to this, latest types of digital assets could be created pertinent to the variety of shapes that indicated securities can take.⁴⁷ In order to deal with the tax discrepancies or ramifications of transactions making use of digital assets is a vital part of integrating these assets into legal frameworks.⁴⁸ The taxable value of cryptocurrencies is governed by guidelines released by the Italian Revenue Agency, which serve as a foundation for the general tax treatment of digital assets.⁴⁹ The decentralized and frequently anonymous character of transactions containing digital assets, however, poses difficulties for tax enforcement and emphasizes an urgent requirement for regulatory innovation in this field. When it comes to issuing official tax advise on the subject of cryptocurrency taxation, the Italian Tax Administration appears to be hesitant. Yet, the present framework for the taxation of cryptocurrencies in Italy is derived from two previous resolutions⁵⁰ published by Agenzia Entrate.

Compatibility with Italian Corporate Laws

The debate over blockchain innovation and legal reform revolves around the compatibility of Decentralized Autonomous Organizations (DAOs) within Italian company laws. DAO-reshaped public-private dynamic interaction offers new business models and revitalization potential for public services. Corporate laws already in place must be reevaluated to make room for DAOs

⁴⁷ Hogan Lovells, 'Italy issues report on ICOs and cryptoassets exchanges' (Lexology.com, 3 Jan 2020); CONSOB, 'Initial Considerations Relating to the Classification of Digital Tokens and their Offer to the Public' (2020).

⁴⁸ Eivind Semb, 'Crypto Tax Guide Italy – Updated 2022', (Coinpanda ,31 July 2023).

⁴⁹ 'Cryptocurrency Taxation in Italy: How it Works?' (boccadutri.com, 21 July 2023)

⁵⁰ First, Resolution no. 72 /E/2016; Second, Resolution no. 788/2021.

because of their intrinsic decentralized governance models, which cast doubt on conventional legal concepts of liability and organizational structure.

Public and Private Sector Dynamics: DAOs promise an unprecedented change in corporate governance that could improve accountability and participative decision-making, signaling an impact that goes beyond simple technology innovation.⁵¹ DAOs have the potential to significantly alter the Italian economy by bringing about improved operational efficiencies and more participatory governance models, which will change the way the public and private sectors interact. With their unparalleled openness and stakeholder involvement, DAOs have the potential to completely transform conventional business structures in the private sector. Through the use of blockchain technology in public records, voting, and resource distribution, DAOs offer the public sector fresh ways to deliver public services that could redefine citizen-government interactions. Creating a legal framework that both protects against potential risks and allows for innovation is the difficulty in making sure that the use of DAOs complies with public welfare norms and national interests.⁵²

Decentralized Governance Structures or Models and Liability Concerns: The widespread deployment of decentralized governance models heralds in a paradigm that challenges established notions of corporate accountability and liability. Assigning legal accountability becomes more difficult when considering the DAO's flexible role structures and the degree of anonymity which blockchain technology offers. This is especially troublesome in situations where there have been illegal activity or breaches of contracts, as it becomes difficult to pinpoint the responsible parties. It is necessary for Italian corporation law to change in order to handle these challenges; this could involve creating novel legal frameworks that acknowledge the collaborative decisions-making procedures of DAOs while making sure that systems for responsibility and reparation are already in situ. One possible step in this progression would be the creation of a DAO-specific legal framework that lays out participant rights and obligations as well as the steps for taking legal action in the event of disagreement or misconduct.⁵³

⁵¹ Fenwick, Mark, Wulf A. Kaal, and Erik P.M. Vermeulen, 'Regulation Tomorrow: What Happens When Technology Is Faster Than the Law?' (2019) 6(2) *American University Business Law Review* 47.

⁵² Tapscott, Don, and Alex Tapscott, 'Blockchain Revolution: How the Technology Behind Bitcoin is Changing Money, Business, and the World' (Penguin 2016).

⁵³ Werbach, Kevin, 'The Blockchain and the New Architecture of Trust' (MIT Press 2018).

The Third Sector (TS) in Italy: An Overview

The social and economic fabric of Italy is greatly influenced by the Third Sector, which is made up of a variety of groups such as NGOs, associations, foundations, in certain examples also includes companies and cooperations (which carries out activities of general interest for social, civic and solidarity purposes instead of profit making purposes) and charities. Blockchain technology facilitates greater operational effectiveness and transparency, which is why integrating DAOs into this industry is promising. The European Commission (2020)⁵⁴ notes that existing legal and regulatory frameworks intended for centralized organizations presents substantial issues due to the novelty of DAOs. DAOs' legal status, governance frameworks, and operating procedures are currently unclear in Italy due to the lack of specific recognition of DAOs under Italian legislation. One can find grey areas as a consequence of this ambiguity, particularly in the matter of enforceability of DAOs decisions and their legal capability of making contracts.⁵⁵ Status of Legal personality, liability, and recognition subservient to modern legislation are the leading concerns that DAOs in Italy must address. Due to lack of recognition of legal personality, DAOs faces challenges in being identified as authorize entities in the light of its potential to hold assets, accept liability, and exercise legal prerogatives and to engage in legal decision making. Liability issues are intensified by decentralized structure of DAOs', thus making it hard as to ascertain who is required to be held accountable for the organization's decisions.⁵⁶ An incoherent and inconsistent framework is enacted under Italian law, which has indirect impacts on DAOs. This includes the Civil Code and certain regulations pertaining to digital innovation.⁵⁷ While there may be some similarities, the Italian Civil Code's rules on groups and foundations do not completely support the decentralized governance of DAOs. A glimpse of hope for the incorporation of DAOs in the legal framework is provided by recent initiatives that promote blockchain technology and digital innovation, although they are not as comprehensive as they could be.⁵⁸

⁵⁴ European Commission, 'Blockchain Innovation in Europe' (2020) <https://ec.europa.eu/digital-single-market/en/blockchain-technologies>.

⁵⁵ De Filippi, Primavera and Wright, Aaron, 'Blockchain and the Law: The Rule of Code' (Harvard University Press 2018).

⁵⁶ Schrepel, Thibault, 'Blockchain Antitrust' (2018) 19(1) University of Illinois Law Review 1.

⁵⁷ Italian Parliament, 'Legge 11 dicembre 2016, n. 232' (2019) Gazzetta Ufficiale.

⁵⁸ Ibid.

Explicating Italian Constitutional Perspectives on DAOs and the Third Sector Legal Reforms

The constitutional perspective of Italy on DAOs and third sectors organizations (TSOs) and a legal and regulatory framework is not just adequate but concisely it does not address the essential legal concepts explicitly. However, the Italian constitution focuses upon the establishment and operations of organizations which could substantially be applied to DAOs.⁵⁹ As for the third sector, Italy has a specific legislation known as “Code of Third Sector” [Legislative Decree No.117/2017], which recognizes and regulates “third sector organizations (TSOs)”. This Code introduces a new legal qualification or status, namely that of a “third sector entity (TSE)”, which is available to organizations that meet the expected legal requirements. The status of TSE confers upon the organizations that holds it not only fiscal benefits but also other benefits.⁶⁰

In terms of required reforms, there is a growing consensus that there is a need for DAO- specific legislation to provide legal certainty and protection for DAOs. This is particularly important for smaller DAOs. The legislation should provide guidance on operating in the traditional corporate world, legal safeguards and protection, protection for smaller DAOs and procedural guidance for DAOs. The extent of this legislation varies, ranging from no binding new legislation to new legislation with benefits for DAOs. The legislation should be flexible and future proof with inclusion of a solid and all-inclusive definition. It should also cover all the relevant categories such as tax, treasury and tokens, employment relations, dispute resolution, securities, qualifications, limited liability, legal personality, voting process, use of smart contracts, dissolution, disclaimer and fiduciary status.⁶¹

International Best Practices for Consumer Protection and Building Trust in DAOs Operations

In order to guarantee that the rights of participants are protected in these decentralized systems, the rise of DAOs has required a reassessment of consumer protection regulations. International best practices offer useful guidelines in this regard. Examples include those created by the Financial Action

⁵⁹ The Constitution of Italian Republic.

⁶⁰ Antoni Ficci, *The New Italian Code of the Third Sector. Essence and Principles of a Historic Legislative Reform [2024]* from *The Law of Third Sector Organizations in Europe* (Springer) https://doi.org/10.1007/978-3-031-41744-3_6.

⁶¹ Stefanie, Boss, ‘DAOs: Legal and Empirical Review’ (2023) Institute for Information Law Research (IILR) Paper No. 2023-06. <http://dx.doi.org/10.2139/ssrn.4503234>

Task Force (FATF)⁶² on transparency and the EU's (European Union's) strategy to digital consumer protection. The sense to have clearly expressed guidance about operations of DAOs, procedure for settlement of disputes, and consumer asset protection are accentuated by these strategies. Italy has potential to create regulations that strengthen trust on DAOs by demanding these organizations to function unambiguously and immediately by getting insight from the OECD's guidelines on consumer protection within the limits of digital industry.⁶³ Italy might choose to apply the UNGCP's (United Nations Guidelines for Consumer Protection) basic principles, which underscores FET (fair and equitable treatment standard, ensuring privacy, and right to remedy, with the intention of strengthening consumer protection and trust on DAOs. With few modifications, these regulations for DAOs can affirm that they comply with internationally recognized benchmarks for consumer protection. Likewise, enforcing blockchain based regulatory standards similar to those that International Organization for Standardization (ISO) had suggested for distributed ledger technologies (DLTs) and blockchain could provide a systematic approach to enhance security and transparency in DAO operations and set up standards for user confidence over these virtual organizations.⁶⁴ Italy might derive inspiration coming from the innovative work in the Asia-Pacific Economic Cooperation (APEC) Privacy Framework, that presents a distinctive viewpoint on striking a balance between data privacy and commercial interests in technology-driven industries, in order to build on the foundation of consumer protection in the digital sphere. It may be possible for Italy to take the lead in developing privacy-centric, commercially feasible DAO governance structures by modifying existing frameworks to accommodate the decentralized character of DAOs. With this strategy, customers would be safeguarded and DAOs' reputation as safe, private arenas for innovation would grow.⁶⁵ A novel legislative framework for DAOs may also be produced by fusing the intrinsic security and transparency of blockchain technology with the tenets of the globally accepted General Data Protection Regulation (GDPR). This concept would make sure that participants' data is well protected while utilizing blockchain

⁶² Financial Action Task Force, 'Guidance for a Risk-Based Approach to Virtual Currencies' (2015).

⁶³ OECD, 'Consumer Protection in E-commerce: OECD Recommendation' (2016) OECD Publishing.

⁶⁴ International Organization for Standardization, 'Blockchain and Distributed Ledger Technologies' (ISO, 2020).

⁶⁵ Asia-Pacific Economic Cooperation, 'APEC Privacy Framework' (2021).

technology to improve consumer protection and trust when conducting digital transactions as well as interactions inside DAOs.⁶⁶

Compliance with Financial Regulations: AML, KYC, and Beyond

Owing to the decentralized structure and the anonymity that is sometimes connected to blockchain transactions, DAOs face particular challenges in adhering to Know Your Customer (KYC) and Anti-Money Laundering (AML) standards. A foundation for incorporating DAOs in the financial regulatory system is provided by the FATF's recommendations, which highlighted the necessity for precise guidelines regarding the implementation of AML and KYC standards in decentralized systems. Italy could lead legal changes that acknowledge the unique characteristics of DAOs while making sure they don't serve as conduits for financial crime by complying the requirements of the EU's Fourth AML Directive.⁶⁷ Not only do AML and KYC present difficulties, but DAOs must also adhere to securities and investing rules, which differ greatly between jurisdictions. Guidelines regarding digital assets have been released by the U.S. Securities and Exchange Commission (SEC), outlining the circumstances under which a DAO may be deemed a security. It would be beneficial for Italy to take note of this strategy in order to make sure that tokens generated by DAOs adhere to securities rules without precluding innovation. Additionally, by offering participants in DAOs with verifiable, non-repudiable IDs that uphold the privacy and anonymity principles built into blockchain technology, the creation of a decentralized identification system complying with AML and KYC standards easier.⁶⁸ Apart from adhering to AML and KYC laws, DAOs functioning in Italy may gain advantages from a legislative structure that recognizes the distinct characteristics of crypto-assets and decentralized finance (DeFi). Italy might create a complex, multilayered regulatory structure for DAOs that distinguishes between different token use cases and their associated risk profiles, taking cues from the Monetary Authority of Singapore's (MAS) methodology for token classification and DeFi regulation.⁶⁹ It is also possible to improve DAO

⁶⁶ European Union, 'General Data Protection Regulation (GDPR)' (2018) Official Journal of the European Union.

⁶⁷ European Parliament, 'Directive (EU) 2015/849 of the European Parliament and of the Council of 20 May 2015 on the prevention of the use of the financial system for the purposes of money laundering or terrorist financing' (2015) OJ L141/73.

⁶⁸ European Blockchain Observatory and Forum, 'Blockchain and Digital Identity' (2020).

⁶⁹ Monetary Authority of Singapore, 'Guidelines on Provision of Digital Payment Token Services to the Public' (MAS, 2021).

security and compliance standards by introducing smart contract audits and certification procedures that are similar to those investigated in Malta's blockchain projects. Italy could lessen the dangers connected with fraud and financial crimes by creating a certification body for smart contract technologies used by DAOs. This would guarantee that these essential components adhere to national and global financial legislation.⁷⁰

Comparative Legal Perspectives: Analyzing DAO Regulations Globally and Lessons for Italy

A cross-jurisdictional comparison of DAO rules demonstrates a range of strategies, from Wyoming's state-level DAO recognition in the United States to Germany's more circumspect position. These international viewpoints highlight the variety of reactions that governments have given to companies that operate on blockchain technology and provide guidance to Italy on how to create a legal system that encourages innovation whilst confronting the dangers of DAO activities. It is possible that Italy's legal reforms could be guided by the Swiss model, which offers insights into striking a balance between regulatory control and the advancement of blockchain technologies.⁷¹ Determining how digital identification and e-governance technologies can be connected with DAO activities, offering an arrangement for legal recognition along with operational transparency, can be learned from investigating the Estonian e-Residency program. For Italy, Estonia's forward-thinking digital infrastructure may offer guidance on how to integrate such DAOs deep into the sphere of digital trading and business momentarily by authenticating and confirming their legal obligations and legal validity. On the top of that, Italy's fling towards promotion of this innovation of blockchain may captivate insight from the UK's regulatory sandbox model, that allows fintech companies to experiment novel products in a standardized setting. By means of this model, authorities can make a response to continuously varying situations or set of conditions and make a courant modifications to legislative frameworks regarding DAOs.⁷² Italy may grapple and gain a lot by creating flexible and conformable besides robust DAO legal and regulatory frameworks by boning up the ruling frameworks of Switzerland and Liechtenstein. The Switzerland's famous "Crypto Valley" and Liechtenstein's well known Blockchain Act offers wide-ranging and panoramic regulatory

⁷⁰ Malta Digital Innovation Authority, 'Guidelines for Smart Contracts' (2020).

⁷¹ Swiss Federal Council, 'Federal Act on the Adaptation of Federal Law to Developments in Distributed Electronic Register Technology' (2018).

⁷² UK Financial Conduct Authority, 'The Regulatory Sandbox' (FCA, 2020).

and legal frameworks that concedes the legal status of DAOs and set down explicit rules for their proper functioning. These regulatory frameworks and legal structures meld policies that uplift innovation with stern consumer protection and compliance requisites.⁷³ It could be good chance to advance Italy's approach to DAOs regulation by embracing awareness and understanding from regulatory sandbox of Canada furthering fintech developments, that advances communication amongst governments and innovators. By adoption of this proactive engagement approach, it would be in position to upgrade its legal framework in response to the dynamic blockchain ecosystem, ensuring that the laws remained up to date and embolden the development of new technologies.⁷⁴

Way forward for Revolutionary Transformation of Corporate Governance in Italy

The DAO concept, which represents a fully dispersed organizational structure, represents a dramatic break from traditional corporate oversight. Along with democratizing decision-making, this presents special difficulties for integration with Italy's long-standing legal framework. Growing research on hybrid organizational forms which combines traditional governance processes with blockchain-enabled autonomy, may be applied to the Italian approach to corporate governance, which is firmly based in the Civil Code. This would provide a legal foundation for DAO activities inside Italian jurisdiction.⁷⁵ A new legal entity category, analogous to the American Limited Liability Company (LLC) but customized to support decentralized governance systems, might be explored by Italy especially for DAOs. In order to give DAOs operating inside the Italian jurisdiction a strong legal basis, this novel legal body would handle its distinctive features, particularly decentralized decision-making and token-based incentives.⁷⁶ One of DAO's main advantages is that it provides a distinct advantage when it comes to complying with international demands for increased corporate responsibility. The OECD's corporate governance guidelines, which focus on openness and stakeholder

⁷³ Swiss Federal Council, 'Report on the Legal Framework for Blockchain and DLT in the Financial Sector' (2019); Principality of Liechtenstein, 'Blockchain Act: Liechtenstein's Token and TT Service Provider Act' (2020).

⁷⁴ Canada's Financial Consumer Agency, 'Framework for Fintech Innovation: Regulatory Sandbox' (2021).

⁷⁵ Bianchi, Alessandro, 'Legal Frameworks for Decentralized Autonomous Organizations: An Italian Perspective' (2022) 45 *European Law Journal* 112.

⁷⁶ Wright, Aaron, "The rise of decentralized autonomous organizations: Opportunities and challenges" (2021) 1; Aseeva, Anna, "Liable and Sustainable by Design: A Toolbox for a Regulatory Compliant and Sustainable Tech" [2023] 16(1) *Sustainability* 228.

involvement in particular, may provide guidance for Italy's regulatory adaptation. Through the integration of these tenets into the DAO framework, Italy has the potential to lead the way in developing a governance model that surpasses contemporary benchmarks for corporate transparency as well as accountability. DAOs could have a particularly significant impact on improving stakeholder participation and operational efficiency in this field, especially considering Italy's thriving social enterprise sector. Amendments to the law that allow DAOs to be more easily integrated with social enterprises could encourage creativity in the way these businesses tackle environmental and social issues, utilizing blockchain technology to make a bigger difference.⁷⁷ Implementing business rules and choices in a new way is made possible by the automated process of governance via smart contracts. Legal researchers and technological experts have worked to ensure that these digital contracts operate within the confines of Italian law, honoring the two contractual commitments and corporate duties. One potential avenue for legal reform in Italy would be to establish a regulatory sandbox to test the repercussions of smart contract-based governance. Italy has the potential to accelerate the incorporation of blockchain-based technologies in corporate governance by introducing smart contracts for standard governance functions like dividend distribution and resolution voting. This might potentially set a new global norm for corporate governance by streamlining operations and enhancing openness and confidence among stakeholders.⁷⁸

Conclusion

In essence, it will eventually be up to Italy to take up legislative changes coupled together with regulatory changes that are customized according to the distinct specifications of blockchain technology, if DAOs are to revolutionize corporate governance in the country. Italy may set the ball rolling in the evolution of corporate governance, consumer protection stimulating digital proficiency and concoct a model for other countries to act in accordance with it, by formulating a legislative structure that recognizes the decentralized, autonomous, open, and participatory character of DAOs. It may categorically address such organizations in its constitution by dint of amendments. This innovative strategy would position Italy as a center for the advancement of blockchain technology and a frontrunner in the global

⁷⁷ Martini, Lucia, 'The Role of DAOs in Enhancing Social Enterprise Efficiency in Italy' (2023) 7 *International Review of Social Innovation* 134.

⁷⁸ Rossi, Marco, 'Blockchain and Smart Contracts: Implications for Italian Corporate Governance' (2021) 13 *Journal of Digital Law & Business* 89.

digital revolution, stimulating innovation not just in the Third Sector but additionally in the larger Italian economy. Consumers can be empowered to make wise decisions and trust is increased by providing them with information about the advantages and disadvantages of engaging with or joining DAOs. Proposals for initiatives could include public awareness campaigns or educational initiatives created in partnership with universities and blockchain associations. This strategy cultivates a culture of safety and trust surrounding digital transactions and DAO operations in addition to increasing the number of informed consumers. It is intended to be rewarding for Italian DAO regulations, if these TSOs will be integrated with its existing digital infrastructure, including the SPID system (Public Digital Identity System). Italy can streamline AML and KYC compliance while maintain these features of anonymity as well as security of blockchain technology by permitting DAO participants to make use of verified digital IDs. By way of upgraded operational transparency and accountability, this incorporation can allow smoother interactions amongst citizens and DAOs, peculiarly in the provision of public services. The Italian republic may explore a new venture to cooperate and connect internationally with agencies rendering regulatory services together with blockchain specialists to intercept and hoist the difficulties interrelated to DAO regulation. The participation in platforms for instance the “EU-Blockchain Observatory and Forum” or the G7’s Digital and Technology Ministers’ meetings could encourage cross-borders legal attunement and proffer eye-opening comprehensions on methodical regulatory operations. These collaborations might bring about the creation of a systematized and well-planned framework for regulation of DAOs, confronting obstacles and hinderances related to enforcement, jurisdiction, and cross-borders trade in a new economy connecting nations digitally across the globe. For the purpose of guaranteeing the fact that DAOs can operate efficaciously and productively within the Italian legal framework while maintaining the standards of consumer protection, a strategic masterplan for legal and regulatory reforms in order to accommodate DAOs could be required. To make the idea’s execution brisk and uncomplicated, this roadmap might be divided into stages. It will take a extremely enthusiastic, systematized, well planned and collaborative strategy to successfully integrate DAOs into Italy’s legal and economic environment. To thrivingly stretch across the intricacy of legal as well as regulatory reforms within this swiftly unrolling and progressing field of blockchain technology, each and every stakeholder must engage in this expedition, cooperative and amenable in their thinking, and participating in consistent communication. To be more precise , accurate and specific, a fundamental initial step in integrating and including such organizations within legal system of Italy is publication of a white paper silhouetting all

realizable legal definitions, categorizations and classifications for DAOs in Italian republic. The key purpose of this paper would be the provision of a clear and well explained legal framework focusing upon the recognition as well as regulations of DAOs and it must also explain all the relevant legal challenges and issues, related framework and recommended classification for DAOs. This approach entails numerous key factors and considerations to assure that the white paper deftly undertakes and addresses the distinctive features of DAOs and comports to the country's legal and regulatory framework. By giving law makers and regulators a simple, crystal clear, conclusive and viable framework, this white paper presses for paving the way for legal acceptance of DAOs' in Italy. It may substantiate a commendatory aura for boosting and advancing DAOs by wading into their distinguishable attributes and referring distinct legal classifications. This will aggrandize innovativeness and assures legal stability and protection for all involved parties.

References

- Antoni Ficci, *The New Italian Code of the Third Sector. Essence and Principles of a Historic Legislative Reform* [2024] from *The Law of Third Sector Organizations in Europe* (Springer) https://doi.org/10.1007/978-3-031-41744-3_6.
- Asia-Pacific Economic Cooperation, 'APEC Privacy Framework' (2021).
- Bianchi, Alessandro, 'Legal Frameworks for Decentralized Autonomous Organizations: An Italian Perspective' (2022) 45 *European Law Journal* 112.
- Buterin, Vitalik. "A next-generation smart contract and decentralized application platform." [2014] 37 (3) white paper 2-1.
- Canada's Financial Consumer Agency, 'Framework for Fintech Innovation: Regulatory Sandbox' (2021).
- Catalini, Christian, and Joshua S. Gans. "Some simple economics of the blockchain" [2020] 63 (7) *Communications of the ACM* 80-90.
- Cappiello, Benedetta, "Blockchain Based Organizations and the Governance of On-Chain and Off-Chain Rules: Towards Autonomous (Legal) Orders?" [2021] In *Blockchain, law and governance*, pp. 13-42 (Springer International Publishing, 2021)
- Davidson, Sinclair, Primavera De Filippi, and Jason Potts. "Economics of Blockchain." [2016] *SSRN Electronic Journal* 2744751.
- De Filippi, Primavera and Wright, Aaron, 'Blockchain and the Law: The Rule of Code' (Harvard University Press 2018).

- Dimitri, Nicola, 'Voting in DAOs', [2023] 2(4) Distributed Ledger Technologies: Research and Practice pp.1-12.
- European Blockchain Observatory and Forum. "Blockchain Innovation in Europe." European Commission (2019).
- European Blockchain Observatory and Forum, 'Blockchain and Digital Identity' (2020).
- European Commission, 'Blockchain Innovation in Europe' (2020) <https://ec.europa.eu/digital-single-market/en/blockchain-technologies>.
- European Parliament, 'Directive (EU) 2015/849 of the European Parliament and of the Council of 20 May 2015 on the prevention of the use of the financial system for the purposes of money laundering or terrorist financing' (2015) OJ L141/73.
- European Union, 'General Data Protection Regulation (GDPR)' (2018) Official Journal of the European Union.
- Fenwick, Mark, Wulf A. Kaal, and Erik P.M. Vermeulen, 'Regulation Tomorrow: What Happens When Technology Is Faster Than the Law?' (2019) 6(2) American University Business Law Review 47.
- Financial Action Task Force, 'Guidance for a Risk-Based Approach to Virtual Currencies' (2015).
- Financial Conduct Authority (FCA), "Guidance on Cryptoassets," 2019. First, Resolution no. 72 /E/2016; Second, Resolution no. 788/2021.
- Global Financial Innovation Network (GFIN). "GFIN - A Global Network for Financial Innovation," [2019]; Wyoming Legislature. "Wyoming Decentralized Autonomous Organization Supplement," [2021].
- Helliara CV, Crawford L, Rocca L, Teodori C, Veneziani M, 'Permissionless and Permissioned Blockchain Diffusion' (2020) International Journal of Information Management <https://doi.org/10.1016/j.ijinfomgt.2020.102136>.
- Hogan Lovells, 'Italy issues report on ICOs and cryptoassets exchanges' (Lexology.com, 3 Jan 2020); CONSOB, 'Initial Considerations Relating to the Classification of Digital Tokens and their Offer to the Public' (2020).
- Iansiti, Marco, and Karim R. Lakhani. "The Truth About Blockchain." Harvard Business Review (2017).
- International Organization for Standardization, 'Blockchain and Distributed Ledger Technologies' (ISO, 2020).
- Italian Parliament, 'Codice dell'Amministrazione Digitale' (2019).

- Italian Parliament, 'Legge 11 dicembre 2016, n. 232' (2019) Gazzetta Ufficiale.
- Kirimhan, Destan, "Importance of anti-money laundering regulations among prosumers for a cybersecure decentralized finance" [2023] 157 Journal of Business Research 113558.
- Mahmoud, Amr Ibrahim Abbas "Exploring the potential of DAOs: a comprehensive study of decentralized autonomous organizations" [2022].
- Malta Digital Innovation Authority, 'Guidelines for Smart Contracts' (2020).
- Ministry of Economic Development, "National Strategy on Blockchain Technologies." (2019).
- Monetary Authority of Singapore, 'Guidelines on Provision of Digital Payment Token Services to the Public' (MAS, 2021).
- Mougayar, William, *The Business Blockchain: Promise, Practice, and Application of the Next Internet Technology*, (Wiley, 2016).
- Nakamoto, Satoshi. "Bitcoin: A Peer-to-Peer Electronic Cash System." (2008) Decentralized business review. Also available at: Bitcoin.org.
- OECD, 'Consumer Protection in E-commerce: OECD Recommendation' (2016) OECD Publishing.
- Ostbye, 'Exploring the Role of Law in The Governance of Cryptocurrency Systems and Why Limited Liability DAOs might be a Bad Idea' [2022] Available at SSRN 4007547.
- Pilkington, Marc., *Blockchain Technology: Principles and Applications*, (Edward Elgar Publishing, 2016) Research Handbook on Digital Transformations.
- PWC, "Blockchain Ecosystem in Italy" (osservatori. net, 2022). Available at: <<https://www.pwc.com/it/it/publications/docs/pwc-blockchain-ecosystem-italy.pdf>> accessed on 10 Feb 2024.
- Rikken, Janssen, and others, "Governance challenges of blockchain and decentralized-autonomous-organizations" [2019] 42 (4) Information Polity (IP) 400-414.
- Rossi, Marco, 'Blockchain and Smart Contracts: Implications for Italian Corporate Governance' (2021) 13 Journal of Digital Law & Business 89.
- Roy, S., 'The Impact of Blockchain Technology on Financial Regulations and Legal Frameworks' [2023] Available at SSRN 4521762.

- Savelyev, Alexander, “Contract Law 2.0: ‘Smart’ Contracts as the Beginning of the End of Classic Contract Law” [2017] 26(2) *Information & Communications Technology Law* pp. 116-134.
- Schrepel, Thibault, *Blockchain and Antitrust: The Decentralization Formula*, (Cambridge University Press, 2018).
- Sciarelli, Mauro, Prisco, Anna, Gheith, Mohamed Hani, and Muto, Valerio, ‘Factors Affecting the Adoption of Blockchain Technology in Innovative Italian Companies: An Extended TAM Approach’ [2022] 15 *Journal of Strategy and Management* 495-507.
- Stefanie, Boss, ‘DAOs: Legal and Empirical Review’ (2023) Institute for Information Law Research (IILR) Paper No. 2023-06. <http://dx.doi.org/10.2139/ssrn.4503234>
- Swan, Melanie, *Blockchain: Blueprint for a New Economy*, (O’Reilly Media, 2015).
- Szabo, Nick, “Smart contracts: Building blocks for digital markets, Extropy.” [1996] 26 (18) *The Journal of Transhumanist Thought* 2-20.
- Tapscott, Don, and Alex Tapscott, ‘Blockchain Revolution: How the Technology Behind Bitcoin is Changing Money, Business, and the World’ (Penguin 2016).
- The Constitution of Italian Republic.
- Tumasjan, Andrank, “The promise and prospects of blockchain-based decentralized business models” [2024] In *Knowledge and digital technology*; Cham: Springer Nature Switzerland pp 203-224.
- U.S Securities and Exchange Commission, “Report of Investigation Pursuant to Section 21(a) of the Securities Exchange Act of 1934: The DAO,” [2017].
- U.S. Securities and Exchange Commission’s Strategic Hub for Innovation and Financial Technology (FinHub), “Framework for ‘Investment Contract’ Analysis of Digital Assets,” 2019.
- Werbach, K., 2018. Trust, but verify: Why the blockchain needs the law. *Berkeley Technology Law Journal*, 33(2), pp.487-550.
- Werbach, Kevin, “The Blockchain and the New Architecture of Trust” (MIT Press, 2018).
- Wright, Aaron, and Primavera De Filippi. “Decentralized Blockchain Technology

