LUISS

Degree Program in Corporate Finance

Course of Advanced corporate finance

Sustainability in corporate governance. Theoretical profiles and empirical analysis in the banking sector

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Academic year 2024/2025

INTRODUCTION

Recent deep changes have impacted the environment within which businesses are called to operate, and it is precisely in the environmental shift that the evolution of business characteristics and governance logics finds essential explanatory sources.

The change has developed along three directions, which are separable only for the sake of clarity, but in reality, they continuously overlap: (i) the pervasiveness of sustainability as a perspective for business survival, (ii) the rapidity and pervasiveness of technological progress and business innovation processes, and (iii) the evolution of the regulatory context.

As a result of the combined effect of these phenomena, the variety and variability of emerging issues under the attention of business governance and study have grown on one hand, and on the other, the corresponding responses.

The demands for sustainability in business activities, stemming from the evolution of the economy and society, have increasingly influenced the established relationships between the economy and finance in business governance and the relationship between businesses and their context. This has gained importance in terms of both breadth and timeliness. *Breadth* because sustainability transcends internal business characteristics to involve relationships between the regulatory, productive, and financial systems. *Timeliness* because it is of particular attention to scholars and operators who consider the relationship between economy, finance, and sustainability crucial for achieving efficient and effective forms of industrial production organization.

Therefore, businesses have increasingly focused on corporate social responsibility issues – also in light of the central role they have always played as drivers of change – in order to strengthen their credibility and reputation among various stakeholders, pursuing a logic of long-term value creation and applying a trichotomy between risk, return, and sustainability in their strategies. The transformation of the external environment, rooted in social and regulatory factors, has led to strategic and operational responses from businesses aimed at proactively adapting to the underlying contextual conditions and seizing emerging opportunities, while also emphasizing the need to gain and maintain support for their initiatives.

Sustainability is thus integrated into governance processes and business strategies, i.e., into the criteria underlying decision-making processes, as well as in the formulation and implementation phases of strategy.

The aforementioned phenomena are increasingly affecting financial intermediaries, given the role they play in the socio-economic development of the context in which they operate, and their inherent attention to managing the risks associated with the major changes and transformations affecting the economy and society.

In this context, the layering of regulatory provisions at the global and European levels, as well as the adoption by a growing number of supervisory authorities of policies and/or guidelines aimed at incorporating sustainability factors and risks into macroprudential frameworks for financial and monetary stability, has led to an increasing need for harmonization of defining objective criteria that allow for evaluating the alignment of a financial product with sustainability issues, and facilitate comparisons between them in terms of economic-financial returns and underlying economic activities. Specifically, the regulatory intent to introduce a model of sustainable financial intermediation aimed at promoting economic growth in line with sustainability poses a significant challenge for governing bodies, given the complexity of incorporating this into businesses' strategic and operational processes. This complexity arises from the cultural, governance, and managerial changes that such a model requires, as well as the need to combine sustainability risk identification with methods of evaluating the alignment of credit portfolios with new sustainability goals, ensuring transparency regarding risks stemming from specific sectors.

A clear fact is emerging: the journey toward a sustainable economy requires sharing a new route, one that is built, more than ever, on trust and mutual knowledge among financial intermediaries, businesses, and institutions (of various types).

The literature has investigated, from different perspectives, the effects of implementing sustainability practices in the strategic decision-making process of banking businesses. Several academic contributions have focused on the relationship between sustainability and financial performance, showing that it can be positive, negative, or mixed in different instances.

In this context, this work focuses on the pervasiveness of sustainability in the governance of banking businesses, particularly in light of recent guidelines from

European supervisory authorities, and contributes to the literature on the subject both theoretically and empirically.

As for the theoretical contribution, the paper frames sustainability within business theories, highlighting its pervasive role in the governance of businesses and banking intermediaries. It reconstructs the regulatory framework, reviews academic contributions on the subject, and finally identifies theoretical aspects still open regarding the role of sustainability within traditional drivers, objectives, and criteria that underpin business decision-making processes.

As for the empirical contribution, the work aims to enrich the literature on the relationship between sustainability performance and economic-financial performance in the banking sector, from both market-based and accounting-based perspectives, using a sample of listed and non-listed European banks during the period 2012-2021.

The work is structured into five chapters, reflecting an approach that first addresses the doctrinal and regulatory context, providing a conceptual framework for the phenomenon in question, which is consistent with its complexity, but also enables the identification of relevant profiles for the subsequent investigation, focused on the relationship between economic-financial performance and sustainability performance, and theoretical aspects still open regarding business decisions. The breadth of the topic justifies the reconstructive as well as interpretative nature of this work.

The first chapter presents the theoretical-conceptual framework on which sustainability is based, explicitly referring to fundamental business theories, its role in business governance, and its measurement. In this context, the interplay between economic-financial and social dimensions has led to the emergence of a new conception of governance actions, positioning sustainability as an element within the system of principles and doctrinal-methodological foundations on which business governance bases its actions. It is therefore the responsibility of management, through the adoption of good administrative rules and creative and distributive processes aimed at finding long-term balances, to identify the strategic path that both strengthens economic objectives (priorities for survival) and fosters the convergence of conflicting and heterogeneous interests of the various stakeholders directly or indirectly involved in business activity.

The chapter concludes with a discussion—developed further empirically in the fourth chapter—on the metrics for measuring sustainability performance and its relationship with economic-financial performance. This analysis highlights certain taxonomies of synthesis and the key issues related to evaluation and implementation.

The second chapter presents the regulatory context, starting from its international evolution and expanding into specific and derived regulations. Sustainability raises strongly intertwined issues involving businesses (financial and non-financial), consumers, investors, supervisory authorities, and regulators. Its transversal nature means it intersects and touches on regulatory and legislative mandates of various kinds.

The implications arising from this context are significant. The regulatory and legislative framework is highly fragmented and characterized by considerable fluidity, with interventions layered over time by international and European bodies. In this regard, the process of non-financial reporting has emerged as a tool with strong cognitive connotations necessary for businesses to create knowledge about their conduct towards various audiences and to consolidate support for their initiatives. In this context, in order to make communication on the subject as accessible, homogeneous, and comparable internationally and within the EU, numerous frameworks have been developed by various international organizations.

However, one fact remains: there is still no universal set of universally valid and shared principles that allow for the verification and temporal and spatial comparison of information on the subject.

The third chapter outlines academic contributions on sustainability in the economy and management of banking institutions, indicating that the significant break from the past induced by increasing attention to sustainability, combined with the central role assumed by financial businesses in major socio-economic changes (particularly banks, which are the focus of this paper), fosters the emergence of new (larger) dimensions and strategic spaces—opportunities and threats—requiring new action-reaction decisions.

Normative and social impulses have therefore directed banking actions toward social responsibility issues in order to gain, maintain, and enhance consensus around strategic-operational choices, all while responding to not only economic but also social

demands from various stakeholders with whom they have relationships, ensuring survival in a highly competitive context.

The ongoing transformation thus requires adopting a holistic approach that reflects across various aspects of the business model, through specific qualitative-quantitative elements in business management processes to define risk appetite (Risk Appetite Framework, RAF) and in strategic planning, (ii) the adoption of specific policies for fundraising and utilization, and (iii) the alignment within different business units and products and services to ensure consistency with the interests of various stakeholders. In this framework, supervision and doctrine have placed particular focus on environmental and climatic issues, especially in light of greater "awareness" of the impacts on traditional risks in terms of the stability of the financial system as a whole. In this regard, academic literature, focusing on the integration of sustainability into the formulation and implementation processes of banking business strategies—encouraged by supervisory authorities—can be conventionally classified into different strands, not without overlaps, namely (i) corporate governance, (ii) risk management policies, (iii) fundraising and employment policies, and (iv) economic-financial performance.

The fourth chapter, after defining the research design, focuses on the empirical analysis and resulting outcomes. In the academic literature on the subject, the relationship between sustainability and economic-financial performance is frequently discussed in various contributions, from which it emerges that this relationship can be sometimes positive, sometimes negative, and at other times mixed. In this context, considering that (i) the internal implementation of sustainability practices aligned with the expectations and demands projected by the external dimension can constitute a sort of intangible asset and these may not be adequately captured by accounting-based indicators, and (ii) each individual factor of the overall ESG score represents a synthesis of a variety of underlying elements (environmental, social, and governance) that may have a different relationship with the economic-financial performance of the business, this work aims to enrich the academic literature on the aforementioned area by broadening the analytical scope to include accounting-based and market-based metrics, while simultaneously highlighting the underlying elements that make up the ESG score.

CHAPTER I
ENTERPRISE PERFORMANCE IN THE ESG DIMENSION

1.1 Introduction to the topic of sustainability

In the recent past, especially in the wake of the global financial crisis, the issue of sustainable development, understood as development that enables the satisfaction of present needs (economic, environmental and social) without compromising that of future generations[1], has attracted increasing interest from regulators, businesses, investors and academics.

There has been a general recognition that the survival of business is closely linked to the well-being of the society of which it is a part, and from which it draws the basic elements for its own functioning[2]. Sustainability has thus presented businesses with new opportunities and challenges, prompting them to pursue, as part of their strategic declination, goals of consistency between real, financial, and social performance[3].

The topic of sustainability has therefore influenced the established relationships between economics and finance in corporate governance with increasing pervasiveness, gaining greater relevance in terms of breadth and topicality. Breadth, in that it transcends issues internal to the enterprise to invest the relationships between the regulatory, production and financial systems. Topicality, in that it is the subject of particular attention by scholars and practitioners who consider the relationship between economics, finance and sustainability crucial to the achievement of efficient organizational forms of industrial production.

On the merits, sustainability as a broad and topical but at the same time extremely complex issue can be conventionally summarized in the following principles:

[1] COMMISSIONE BRUNDTLAND (1987), "Il nostro futuro comune", Rapporto della Commissione Mondiale sull'Ambiente e lo Sviluppo, Nazioni Unite.
[2] CED – COMITATO PER LO SVILUPPO ECONOMICO (1976), Le responsabilità sociali delle imprese, New York.
[3] CRESPI F., MIGLIAVACCA M. (2020), "I determinanti del rating ESG nell'industria finanziaria: la stessa vecchia storia o una storia diversa?", Sustainability, vol. 12, n. 16: 1-20.

- multidimensionality: sustainability as a multidimensional concept of economic, environmental and social nature, requiring a non-hierarchical or pyramidal balance of the same;
- intergenerational perspective: sustainability requires identifying, assessing and managing current and future expectations, considering cause-and-effect relationships in the long-term of action and pursuing a short- and long-term balance;
- stakeholder approach: sustainability requires identifying the current needs and future expectations of current and noncurrent stakeholders from an intergenerational perspective;
- life-cycle thinking (LCT) approach: sustainability involves taking a holistic view of the life cycle of a given product/service, and, consequently, quantifying, managing and monitoring the upstream and downstream impacts of the production process[4].

The growing interest in sustainability and the realization of an economic transition has been stimulated by considerable legislative, as well as social, impetus through statutory and regulatory provisions, as well as standards and best practices at the international, including European, level. With reference to the EU context, the European legislator has in fact formalized, pursuant to Article 3(3) of the Treaty on the Functioning of the European Union (TFEU), the reinforcing intent to establish a single market that operates according to sustainability logics, in order to achieve European economic competitiveness in the medium to long term.
In short, the combined effect of regulatory and social impulses have directed corporate action toward issues of social responsibility, in order to acquire, preserve and increase consensus around its strategic and operational choices under a constraint of responding to current and potential demands and needs, not only economic, from the various

[4] ESCRIG-OLMEDO E., FERNANDEZ-IZQUIERDO M., FERRERO-FERRERO I., RIVERA-LIRIO J., MUÑOZ-TORRES M. (2019), "Valutare i valutatori: analizzare come le agenzie di rating ESG integrano i principi di sostenibilità", Sustainability, vol. 11, n. 3: 1-16.

stakeholders, with whom it weaves relationships to ensure its survival in a highly competitive environment[5].

In light of the premise just formulated, companies have paid increasing attention to sustainability in order to consolidate their credibility and reputation among different stakeholders, pursuing a logic of value creation in the medium to long term and declining a triadic vision between risk, return and social impact in their strategies[6].

Before addressing this issue in detail, it should also be emphasized the degree of conceptual mutability and terminological stratification that sustainability has assumed in the recent past, as a transition from Corporate Social Responsibility (CSR), focused on corporate social responsibility at the mainly informational-reputational level, to the concepts of sustainability and environmental, social and governance (ESG), as parameters, metrics and rational-decisional criteria that, by combining with profitability, guide management's strategic choices in the medium to long term[7]. CSR and ESG criteria respond, on different levels, to the growing demands by stakeholders to gain greater transparency regarding a given company's values, goals, and risks around sustainability issues.

In summary, CSR can be seen as the sustainability framework adopted by a given company, while ESG as criteria that make a consequent summary judgment.

ESG criteria, coined as a result of the instances promoted in 2004 by Kofi Annan in his capacity as Secretary-General of the United Nations, represent indicators that summarize the sustainable performance of a company from a twofold perspective, namely convenience in stakeholder decision-making and value-objective to strive for in the enterprise's strategic-decision-making process. In this sense, these criteria embrace a broader terminology than CSR[8].

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[5] CHIH H. L., CHIH H. H., CHEN T. Y. (2010), "Sui determinanti della responsabilità sociale d'impresa: evidenze internazionali nel settore finanziario", *Journal of Business Ethics*, vol. 93, n. 1: 115-135.

[6] ZIOLO M., FILIPIAK B. Z., BA˛K I., CHEBA K. (2019), "Come progettare sistemi finanziari più sostenibili: i ruoli dei fattori ambientali, sociali e di governance nel processo decisionale", *Sustainability*, vol. 11, n. 20: 1-34.

[7] ROLLI R. (2020), *L'impatto dei fattori ESG sull'impresa. Modelli di governance e nuove responsabilità*, Il Mulino, Bologna.

[8] GILLAN S. L., KOCH A., STARKS L. T. (2021), "Le imprese e la responsabilità sociale: una rassegna della ricerca su ESG e CSR nella finanza aziendale", *Journal of Corporate Finance*, vol. 66: 1-39.

Put another way, a broader view of sustainability as a global and cross-cutting value for all stakeholders has been progressively emerging, one that places alongside economic goals, those of environmental protection (E), social development (S) and good governance (G)[9]. Sustainability is thus combined in the triple ESG dimension in the following way:

- environmental (environmental - E): inherent in valuing the impact of business activity on the environment in terms of climate change, deforestation, environmental pollution and energy efficiency (natural resource management);
- social (social - S): inherent to the enhancement of the impact of business activity towards employees, customers, suppliers and target communities in terms of protection of minorities, gender policies and human rights;
- governance (G): inherent in the enhancement of governance dynamics in terms of shareholder rights, remuneration and composition of management, and compliance with regulations.

On this point, however, it should be noted that despite the copious legislative and regulatory interventions layered in the recent past, a regulatory definition that makes explicit the underlying contents of individual ESG criteria is still absent. A condition that has resulted in the emergence of market practices in valuing the materiality of the same by sector and business model, i.e., a representative nebulosity of the phenomenon in question.

The dimensions E, S and G just represented must be framed, at the same time, as a source of risk for the company (so-called "sustainability risk"), arising from events or conditions of an environmental, social or governance nature that, occurring, could "cause a significant actual or potential negative impact on the value of the investment"[10]. Sustainability risk, which can be further broken down into the subcategories of physical and transition risk, arises from the potential structural

[9] BOCCUZZI G. (2021), "Dalla sostenibilità economica alla sostenibilità sociale ESG. Le sfide per l'economia e la finanza", *Bancaria*, n. 10: 37-50

[10] PARLAMENTO EUROPEO E DEL CONSIGLIO (2019), Regolamento UE 2019/2088, dicembre.

changes that may affect the company's economic activity and, consequently, at the macroeconomic level, the stability of the financial system.

In this regard, it should be clarified that the transition from CSR to ESG concepts is also to be understood in terms of risk to the business activity, as a shift from merely reputational risks with limited effects on current and future economic-financial performance to risks with effects that can undermine the very survival of the business itself as they are directly grafted into strategic decisions.

Picking up on the distinction proposed by Ferrero[11] about the types of risks to which the enterprise is exposed, sustainability risk can presumably be framed in the so-called "extra-economic risks having economic effects" that may manifest themselves in a direct way direct on the business model and/or indirectly through the counterparts with whom the enterprise enters into business relations (e.g., customers and suppliers). It follows that management, since business activity is inherently characterized by uncertainty[12], must consider the two elementary dimensions when assessing its exposure to overall sustainability risk:

- Physical risk: inherent in the actual and/or potential physical effects of climate change on the operation of the enterprise. These can be defined as acute, in that they are caused by concrete weather and climate events, or chronic, as a consequence of the progressive change in the environmental and climate environment[13]. Such effects could be caused, for example, by natural disasters that may jeopardize the company's operations and, therefore, its survival;
- transition risk: inherent in the impacts arising from current or potential direct and indirect effects of the transition to an environmentally sustainable economy[14]. Such effects could be caused, for example, by the adoption of regulatory measures, technological progress, and changing market preferences.

[11] FERRERO G. (1987), *Impresa e management*, Giuffrè Editore, Milano.
[12] FERRERO G. (1987), *Impresa e management*, Giuffrè Editore, Milano.
[13] EBA – EUROPEAN BANKING AUTHORITY (2020a), "On management and supervision of ESG risks for credit institutions and investment firms", Discussion paper, ottobre.
[14] EBA – EUROPEAN BANKING AUTHORITY (2020a), "On management and supervision of ESG risks for credit institutions and investment firms", Discussion paper, ottobre.

Thus, these dimensions have an impact on the firm's economic activity and the financial system, either directly, for example, through lower profitability of the firm or devaluation of its assets, or indirectly through micro-financial changes[15].

It should also be considered that the highlighted phenomena do not only affect industrial firms, as they are directly and physically involved through their production processes, but rather reflexively also financial firms, considering the central role they have assumed in economic development, i.e., as a driver of change[16] due to their function of directing financial flows.

Financial firms may be subject to such risks either directly, i.e., directly on their business model, policies, governance, and risk management, or indirectly, i.e., through their counterparties (entrusted and non-entrusted). A possible negative impact of sustainability risk, to be understood not as a stand-alone risk but one that may manifest itself through the traditional risk categories (credit, market, liquidity, and operational) in a double-materiality perspective, as financial institutions may be impacted (outside-in perspective) through their counterparties or invested assets, which in turn may be impacted by (outside-in perspective) or impacted by (in- side-out perspective) ESG factors. Such perspectives should be taken into account by the financial intermediary in the overall ESG risk assessment.

In closing, during the recent past there has been a transition from a mere voluntaristic-promotional approach to a substantive approach, which considers the sustainability and the associated risks as strategic elements from which opportunities can be derived[17].

Within this framework, legislators and academic literature have paid particular attention toward the issues represented above, partly in light of an increased "awareness" of the impacts of such risks on the stability of the financial system as a whole[18].

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[15] BCE – BANCA CENTRALE EUROPEA (2020), *Guida sui rischi climatici e ambientali: aspettative di vigilanza in materia di gestione dei rischi e informativa*, novembre.

[16] BURANATRAKUL T., SWIERCZEK F. W. (2017), "Azioni strategiche per il cambiamento climatico nell'industria bancaria internazionale", Global Business Review, vol. 19, n. 1: 32-47.

[17] FORNASARI F. (2020), "Conoscenza e potere nella misurazione della corporazione sostenibile: le borse valori come regolatori della divulgazione dei fattori ESG", Washington University Global Studies Law Review, vol. 19, n. 2: 167-230.

[18] BURANATRAKUL T., SWIERCZEK F. W. (2017), "Azioni strategiche per il cambiamento climatico nell'industria bancaria internazionale", Global Business Review, vol. 19, n. 1: 32-47.

1.2 Sustainability and theories of the enterprise

The concept of sustainability (and its consequent formalization in corporate governance actions) has been the subject of copious and enduring academic debate, focusing on the purpose and role assumed by the firm in the reference context in which it operates, with the understanding that different purposes correspond to different roles. The academic literature on the subject has traditionally been divided into two main theoretical strands: neoclassical and institutionalist.

The conception of the firm's actions within the neoclassical strand draws directly from the Smithian view of the invisible hand, according to which the firm exclusively pursues a self-referential purpose of maximizing the value created for shareholders/owners (shareholder) and, indirectly, contributes to generating wealth for society[19]. Within this framework is the shareholder theory, according to which "there is one and only one responsibility of business - to use its resources and engage in activities designed to increase its profits so long as it stays within the rules of the game - which is to say, engages in open and free competition, without deception or fraud"[20]. According to neoclassical doctrine, the primary purpose of the firm is to be traced back to maximizing profit (value) for the shareholders, adopting, among the possible alternatives, solutions exclusively designed to achieve this end. The creation of value for society thus becomes an indirect purpose achievable through allocative market efficiency[21].

However, the neoclassical view--characterized, at least in its traditional or original formulations, by an oversimplification of the underlying assumptions (perfect market, homogeneity of products, choice of quantities only), aimed at allowing a connection between micro- and macroeconomics, i.e., by means of an abstract "sumability" of individual firms, to investigate the determinants of a general equilibrium--has in fact proved inadequate to the cognitive needs of real firms.

In the face of these elements, alongside the neoclassical discipline, the institutionalist strand developed with the intention of grasping the pluralistic and complex articulation

[19] FRIEDMAN M. (1970), "La responsabilità sociale delle imprese è aumentare i propri profitti", New York Times, settembre.
[20] STEWARD B. (1991), *La ricerca del valore*, Stern Stewart & Co, New York.
[21] DRUCKER P. F. (2001), *The Essential Drucker*, Harper Collins Publisher, New York (trad. it. *Il management, l'individuo, la società*, FrancoAngeli, Milano, 2002).

of the enterprise, that is to overcome neoclassical abstractness in the description of microeconomic phenomena.

According to the institutionalist doctrine, the actions of the enterprise directly recall the so-called 'social responsibilities of the businessman'[22], i.e. strategic choices that also consider the values expressed by the society of which the enterprise itself is an integral part. The enterprise is understood as an institution whose ultimate goal is the pursuit of economic and social development, thus relegating the pursuit of profit to one of the many purposes of acting. The result is a significant change of perspective: the enterprise, becoming the bearer of social responsibility, pursues the realisation of a collective utility, i.e. it considers itself not as a closed system separated from society and responding exclusively to the shareholders, but as an entity immersed in society that legitimises its own existence by responding to the latter's demands.

Within the institutionalist strand, the stakeholder theory plays a central role, which, referring to the Kantian principle of the individual as an end rather than as a means, conceives of the enterprise as an open system strongly interrelated with the various stakeholders, whose survival is consequential to the management's ability to generate value in line with the expectations of the stakeholders (primary and secondary), i.e. to create the necessary conditions for them to be interested in the enterprise's operations[23].

In summary, the transition from the neoclassical to the institutionalist strand highlights a profound change in the purpose and role assumed by the firm, as it shifts from the exclusive (or priority) objective of creating value for shareholders[24] to a broader vision, which considers the survival of the firm as strictly dependent on the management's ability to respond adequately to stakeholder demands[25].

Notwithstanding what has just been represented, it seems legitimate to ask whether there exists or has ever existed a real opposition between the neoclassical view and, therefore, the focus on maximising shareholder value, on the one hand, and the

[22] BOWEN H. R. (2013), *Le responsabilità sociali dell'imprenditore*, University of Iowa Press, Iowa City.
[23] DONALDSON T., PRESTON L. (1995), *La teoria degli stakeholder della corporazione: concetti, evidenze, implicazioni*, Academy of Management Review, vol. 20: 65-91.
[24] STEWARD B. (1991), *La ricerca del valore*, Stern Stewart & Co, New York.
[25] CLARKSON B. E. (1995), "Un quadro per analizzare e valutare la performance sociale delle imprese", The Academy of Management Review, vol. 20, n. 1: 92-117.

institutionalist view and, therefore, the focus on maximising stakeholder value, on the other. On closer inspection, it could be argued not. In the long run, in fact, there is a convergence between the interest of the shareholders and that of the other stakeholders, given the circumstance that the value of the shares is equal to the present value of the future cash flows that the company is able to generate, which in turn depends on the ability to satisfy the stakeholders.

In this regard, the theory of value creation-diffusion acts as a 'bridge' between the two visions, identifying as a rational and measurable objective of the enterprise the maximisation of economic value for all participants and not the exclusive prerogative of the shareholders. In this sense, the opposition between the different aims attributed to the enterprise actually tends to vanish as the time horizon widens[26].

Returning to the institutionalist conception proposed earlier, the investigation of the 'relationships that link the aspect or part to the whole and the business system to the broader economic context to which it belongs'[27], "reflects on the role of the business system in the economic context", reflects on the role assumed by the enterprise in the value chain, from a mere subject that produces output for the exclusive benefit of customers, to a subject-interlocutor that, operating according to the logic of competitiveness and consonance, dialogues harmoniously with the various stakeholders, generating value for sub- and suprasystems[28].

Recalling the dynamics between the internal and external context of the enterprise (1), the Italian economic-business literature, characterised by a greater degree of realism in its analysis[29] compared to the currents represented above, has always paid particular attention to the role assumed by the enterprise as a place of convergence of multiple interests, that is, as a necessary condition for the ultimate attainment of survival. In this sense, the enterprise is nothing more than a set of elements linked together by complex relationships, consisting at the same time of a multiplicity of sub-systems that aim to achieve a common goal[30].

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[26] SCIARELLI S. (1997), Economia e Gestione dell'Impresa, Cedam, Padova.
[27] CAVALIERI E. (1995a), L'Economia Aziendale e gli Studi d'Impresa, in Caselli L. (a cura di), Le parole dell'impresa, Guida alla lettura del cambiamento, vol. 2, FrancoAngeli, Milano.
[28] GOLINELLI G. M. (2017), L'Approccio Sistemico Vitale (ASV) al governo dell'impresa. Verso l'impresa sistema sostenibile, vol. 1, Cedam, Padova.
[29] VACCÀ S. (1985), "L'economia d'impresa alla ricerca di una identità", Economia e Politica Industriale, n. 45: 87-118.
[30] MASINI C. (1970), Lavoro e risparmio. Economia d'azienda, Utet, Torino.

The shift to institutionalist theory thus highlights not only a change in perspective, but also a broadening of it, in that the enterprise becomes an actor in a network of complex, stable and mutually influencing relationships. Relationships that cannot be described as dyadic and independent, but rather multiple and interdependent as they are woven between the enterprise and individual stakeholders in a bidirectional manner, but also between the stakeholders themselves[31].

A considerable degree of complexity arises for the enterprise in having to assess the transmission mechanisms of its actions and the consequent direct (towards the individual stakeholder) and indirect (propagation in the network of which it is part) action-reaction effects in time and space, as a prerequisite for affirming and consolidating its legitimacy and obtaining the maximum benefits in the system of relations of which it is part[32]. It is necessary to consider a broader perspective of the role assumed by the enterprise (and of the objectives to which it tends), from a subject focused on the mere creation of economic value to an actor that, sharing the value code of the network of which it is part, determines the success of the network itself.

There is, therefore, a close interdependence between the success of the enterprise (2) and the development of the network/society within which it is located, which, going beyond the mere concept of social responsibility, reconsiders the creation of economic-social value as a joint and interdependent process between the enterprise and the society to which it belongs[33]. The prerequisite for such success thus lies in the ability of the enterprise to operate harmoniously with the value code on which the network bases its decision-making processes.

On this assumption, which binds the company and its stakeholders, the concept of corporate social responsibility is grafted as a source of potential sustainable

[31] SCIARELLI M., TANI M. (2013), "L'approccio in rete e la gestione degli stakeholder", Business Systems Review, vol. 2, n. 2: 175-190.

[32] GOLINELLI G. M. (2017), L'Approccio Sistemico Vitale (ASV) al governo dell'impresa. Verso l'impresa sistema sostenibile, vol. 1, Cedam, Padova.

[33] GOLINELLI G. M. (2017), L'Approccio Sistemico Vitale (ASV) al governo dell'impresa. Verso l'impresa sistema sostenibile, vol. 1, Cedam, Padova.

competitive advantage[34]. Stakeholders understood as those who share in the company's risk and, at the same time, in the value created by the company[35].

In the light of what has been observed, the centrality of coherence between the relational and economic-social dimensions emerges, as the capacity of the enterprise to assume the social function to which it is called, i.e. the convergence of multiple interests, is intrinsically linked to the ultimate purpose of survival over time, i.e. the economic dimension (achievement of an economic, equity and financial balance), the competitive dimension (achievement and maintenance of a competitive advantage) and the social dimension (achievement and maintenance of consensus by stakeholders)[36].

In essence, the enterprise is the point of convergence of multiple instances and expectations that find substance and realisation in the economic coordination activity oriented towards their satisfaction. It is evident how the economic dimension and the social dimension are strongly interrelated, in that 'the enterprise, in order to be useful in the long run, must fulfil a vast sum of duties not only towards its employees but also towards the community in which it becomes. In sum, the enterprise must reconcile the profitability of its subject with the interests of those who willingly give their labour to the enterprise and must submit to the requirements dictated by the common good of the national collectivity in which it acts'[37].

In this broadened perspective, the interrelation between the economic/financial dimension and the social dimension has led to the emergence of a new profile of governance action, namely sustainability as an element that is grafted onto the system of principles and doctrinal and methodological foundations on which management bases its actions[38]. Action will therefore be guided by a criterion of maximising the utility/satisfaction of individual stakeholders in the Paretian sense, i.e. at parity with (or at least limiting the negative effects of) the satisfaction of the remaining actors/

[34] BOCKEN N., SHORT S., RANA P., EVANS S. (2014), "Una revisione della letteratura e delle pratiche per sviluppare archetipi di modelli di business sostenibili", Journal of Cleaner Production, vol. 65: 42-56.
[35] COLOMBI F. (2003), Finanza condizionata e teoria del valore. Del merito e del metodo, vol 1, Aracne Editrice, Roma.
[36] CODA V. (1995), L'orientamento strategico dell'impresa, Utet, Torino.
[37] ZAPPA G. (1956), Le produzioni nell'economia delle imprese, Giuffrè, Milano.
[38] GOLINELLI G. M., VOLPE L. (2012), Consonanza, Valore, Sostenibilità: Verso l'Impresa Sostenibile, Cedam, Padova.

stakeholders. Sustainability thus profiles an increasing degree of complexity as the effect of a constant and profound attention to the demands made by the various publics and the ability to respond in harmony to shared value codes. The continuous search for points of equilibrium has effects on individual moments in the value chain, profiling the emergence of new opportunities and new markets, as well as radical changes in the competitive arena[39]. The challenges looming for management are considerable and mainly concern

- change of perspective: considering sustainability and the related value creation as a joint process with the social one, which goes beyond the mere fulfilment of non-financial reporting, to become an issue of strategic, organisational, financial and governance relevance, and requires to be declined within a shared agenda within the company;
- vision beyond conventional boundaries: identifying and seizing new opportunities by responding to the demands of different audiences through a reconsideration of the offer and its upstream and downstream processes (production and distribution)[40];
- communication and reporting: developing languages and codes, i.e. metrics, that are able to represent the results achieved and the objectives to be reached in a fluid, effective, clear and unambiguous manner to the various stakeholders[41];

In conclusion, it can be stated that sustainability is a component of business evolution and constitutes a necessity (rather than a mere constraint) and a set of opportunities[42].

[39] PORTER M. E. (2008), On Competition, Harvard Business Review Press, Harvard.
[40] FREEMAN R. E. (1984), Strategic Management: A Stakeholder Approach, Cambridge University Press, Cambridge.
[41] PORTER M. E., KRAMER M. R. (2011), "The Big Idea: Creare valore condiviso. Come reinventare il capitalismo e scatenare un'ondata di innovazione e crescita", Harvard Business Review, vol. 89, n. 1-2: 62-77.
[42] FREY M. (1995), Ambiente naturale, in Caselli L. (a cura di), Le parole dell'impresa. Guida alla lettura del cambiamento, vol. 1, FrancoAngeli, Milano.

1.3 Sustainability and the relationship between the enterprise and the environment

The new sustainable conception of the universe described above involves the company as one of the main players in the search for a sustainable vision of society, i.e. the social organisation of production[43]. Social and regulatory impulses that have taken place in the recent past have influenced the relationship between business and society and, therefore, the former's actions in terms of opportunities and constraints; the latter originated mainly from the transformation of consumption models and the need for a different management of information flows.

The sudden transformation of the external environment and its increasing dynamism have determined strategic-operational responses on the part of companies characterised by a growing degree of complexity in decision-making processes. This approach arises, in particular, also in the light of the central role that the enterprise takes on in the context in which it is inserted, i.e. as a driver of change[44].

The current external environment therefore presents a considerable degree of complexity[45], which no longer provides, as in the past, clear and sure references for management and, at the same time, sanctions everything that is inconsistent with the instances expressed. The environment reacts to inconsistencies with disturbances that produce imbalances, inefficiencies and malfunctions in the company, which finds itself having to respond by innovating and conceiving the environment in a new way.

Hence, the centrality of the dynamic relationship between enterprise and environment is reaffirmed, based on a mutual compatibility of action and reaction, which determine a process of 'mutual causal determination'[46]. The crucial point becomes, therefore, the sensitivity of the company in capturing external stimuli, which do not depend so much on their magnitude as on the management's ability to grasp and process, through internal knowledge, environmental signals.

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[43] GOLINELLI G. M. (2017), L'Approccio Sistemico Vitale (ASV) al governo dell'impresa. Verso l'impresa sistema sostenibile, vol. 1, Cedam, Padova.

[44] VICARI S. (1998), La creatività dell'impresa, tra caso e necessità, Etas, Milano.

[45] RULLANI E. (1984), La teoria dell'impresa: soggetti, sistemi, evoluzione, in Rispoli M. (a cura di), L'impresa industriale. Economia, tecnologia, management, Il Mulino, Bologna.

[46] CAFFERATA R. (2009), Management in adattamento. Tra razionalità economica e imperfezione dei sistemi, Il Mulino, Bologna.

The company, in short, lives by systematically utilising potentialities and possibilities that loom up before it from the environment that surrounds it, which in turn evolves differently depending on how companies identify, select and respond, through their own cognitive baggage, to these potentialities. Thus, bidirectional propulsive forces between the enterprise and the environment emerge, which mainly determine the survival of the former in the latter, i.e. 'the enterprise, by innovating and researching the opportunities present in their potential state in the overall economy, in the environment and in technology, generates the change of the macro variables, and thus contributes to generating the evolution that binds the micro-macro binomial in a methodological unicum'.

It follows from this two-way relationship that enterprises at certain moments in their lives move away from the equilibrium (or quasi-equilibrium) position, crossing the boundaries of their normal operations. When they are beyond this threshold, they may either face conditions of severe disruption, proving incapable of resisting and reacting to such disruptions, suffering severe damage, to the point of failing to survive, or resilient, i.e. able to absorb such disruptions, seizing new strategic and operational opportunities[47]. In the latter case, companies react by appealing to their own creative capacity, i.e. by increasing their degree of knowledge of the external environment and laying the foundations for preserving their viability.

The environment in which the enterprise is immersed is thus not to be understood as a mere objective and external 'contour', but has a vitality of its own, in that it shapes the characteristics of the enterprise's internal context, conditioning its operations. In other words, the enterprise is immersed in the environment, but it is equally true that the environment pervades the enterprise, as it is nothing more than the combined effect of contextual variables in which it operates, i.e. cultural, historical and ethical elements[48].

It follows that what matters for the success of the enterprise is not only and not so much the consonance with the external environment, 'as the concept of internal coherence within the enterprise between the perception of the environment and the ways in which this perception is translated into concrete actions towards the

[47] LENGNICK-HALL C. A., BECK T. E., LENGNICK-HALL M. L. (2011), "Sviluppare una capacità di resilienza organizzativa attraverso la gestione strategica delle risorse umane", Human Resource Management Review, vol. 21, n. 3: 243-255.

[48] PORTER M. E., KRAMER M. R. (2006), "Strategia e società: il legame tra vantaggio competitivo e responsabilità sociale d'impresa", Harvard Business Review, vol. 84, n. 12: 78-92.

environment itself: it is between these that coherence must be maintained. If signals of errors arrive from the outside world, this means that the representation of the environment or the ways in which the enterprise copes with that representation must be changed'[49].

The perception of the company's actions with respect to the demands arising from the environment, such as sustainability, recalls the need to acquire and maintain the trust and consensus of the external context regarding its strategic and operational initiatives, by means of increasing sensitivity and attention to the expectations of the various stakeholders[50]. Consensus around the management objectives and directions that management intends to pursue constitutes, together with knowledge of the external context, the heart of the relationship between the company and individual stakeholders. In this regard, one recalls the distinction between real consensus, which the company enjoys with its stakeholders, and consensus necessary for the implementation of its strategic direction, since only when management is able to manage consensus around its strategic choices, realising a substantial equivalence between real and necessary consensus, will it be able to realise its project[51]. Referring to sustainability, consensus can be understood as social consensus, when the management's actions are accompanied by 'a conduct of open information, aimed at giving the company a degree of luminous transparency'[52] towards the various stakeholders.

To sum up, the systemic conception of the enterprise understands the latter as an entity open to the relationships and influences that come to it from the outside regarding the ability to obtain the resources and contributions essential for the continuation of the activity and the realisation of its purpose[53], so that knowledge and consensus (trust) represent closely interrelated resources that feed off each other.This creates the prerequisites for the establishment of a good reputation of the company (accreditation) and for the achievement of a competitive advantage i.e. the creation of value, as it

[49] VICARI S. (1998), La creatività dell'impresa, tra caso e necessità, Etas, Milano.
[50] GOLINELLI G. M. (2017), L'Approccio Sistemico Vitale (ASV) al governo dell'impresa. Verso l'impresa sistema sostenibile, vol. 1, Cedam, Padova.
[51] CODA V. (1995), L'orientamento strategico dell'impresa, Utet, Torino.
[52] FAZZI R. (1984), Il governo d'impresa, vol. 1, Giuffrè Editore, Milano.
[53] FERRARA G. (1995), Pianificazione strategica, in Caselli L. (a cura di), Le parole dell'impresa, Guida alla lettura del cambiamento, vol. 2, FrancoAngeli, Milano.

provides fundamental information to stakeholders about the attractiveness of the company itself[54].

In this sense, a good reputation and well-established know-how, among other aspects, lead to greater customer loyalty[55], favour the acquisition of new customers and amplify the appreciation of the company's work among the various stakeholders, fuelling a virtuous circle of attraction of further resources.

Therefore, sustainability (as long as it is implemented in the production and distribution processes and not relegated to mere 'appearance') influences the greater or lesser availability of resources (understood in a broad sense, such as financial, economic, know-how, accreditation, image, opportunity or chance resources) which, consequently, support and feed the process of technological innovation that is indispensable for the survival of the company and amplifies its success[56].

In the light of what has been observed, the business-environment relationship is enriched with new values, i.e. a new paradigm of sustainability, which characterises the instances and expectations of suprasystems and subsystems, and must be adequately reflected in the strategic declinations of management. In other words, 'a fundamental "value" is thus emerging [...] that profiles the company as increasingly "responsible" to the community and, therefore "socially controlled" in its behaviour and in the dynamic balance between economic conditions of existence and survival, on the one hand, and social function, on the other'[57].

Sustainability therefore requires a process of strategic innovation that, after a careful analysis of available resources (current and prospective) and the expected dynamics of demand (market) and supply (competitive), identifies possible development alternatives in terms of product (new products in current markets) and/or market diversification (new products in new markets)[58].

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[54] FOMBRUN C., SHANLEY M. (1990), "Cosa c'è in un nome? Costruire la reputazione e strategia aziendale", The Academy of Management Journal, vol. 33, n. 2: 233-258.
[55] BAGWELL K. (1990), "La differenziazione dei prodotti informativi come barriera all'ingresso", International Journal of Industrial Organization, vol. 8, n. 2: 207-223.
[56] MINTZBERG H. (1994), The Rise and Fall of Strategic Planning, Prentice Hall International Limited, New York (trad. it., Ascesa e declino della pianificazione strategica, Isedi, Milano, 1996).
[57] FERRERO G. (1987), Impresa e management, Giuffrè Editore, Milano.
[58] MCDONALD M., HUGH W. (2011), Marketing Plans, how to prepare them how to use them, John Wiley & Sons, Chichester.

In conclusion, the operation of the company is characterised by an increasing degree of complexity, as a result of the interpenetration of the real and financial dimensions, understood as a prerequisite for the very performance of action, and environmental and social sustainability, as an inalienable and undeniable objective that permeates society as a whole. The company's ability to coherently combine these two aspects (by means, also, of knowledge and experience), presents considerable challenges, but at the same time opens up new opportunities for achieving a competitive advantage or profitability in the long term[59].

1.4 Relationship between ESG and economic and financial performance

The essence of the enterprise lies in the employment of capital in order to achieve a difference between revenues and costs through the pursuit of maximum profitability - sales prices that cover the unit costs of production, allowing a congruous margin for the remuneration of the capital invested in production activities - in the satisfaction of customer needs, bearing in mind the requirements associated with the performance of production activities. The satisfaction of the needs of individuals is thus instrumental to the production of income and, at the same time, the extent to which the enterprise contributes to this satisfaction is dependent on the production of income itself. In this regard, it is observed that 'if enterprise production did not pursue the production of income, it could not contribute, even indirectly, through consumption, to the satisfaction of present needs, or, through savings, to the satisfaction of future needs'[60]. That said, recalling the considerations already developed above, sustainability requires medium to long term cost-benefit assessments, since, in the face of a huge commitment required by the combination of social and regulatory impulses, the enterprise must find justification in terms of benefits. The latter, in turn, are fundamental in fuelling the process of satisfying the demands promoted by the various publics.

[59] BOCCUZZI G. (2021), "Dalla sostenibilità economica alla sostenibilità sociale ESG. Le sfide per l'economia e la finanza", Bancaria, n. 10: 37-50.
[60] ZAPPA G. (1956), Le produzioni nell'economia delle imprese, Giuffrè, Milano.

Under these premises, a recent and copious flowering of studies and investigations has concerned the effects of implementing or not implementing sustainability principles at different hierarchical levels in the enterprise.

If on the one hand, the majority of these studies, although heterogeneous in terms of the scope of the analyses conducted, reveal the existence of a positive relationship between the growing adoption of sustainability practices and the economic-financial disclosure made by the company to the market, on the other hand, the investigation of the relationship between sustainability and economic-financial performance does not present convergent conclusions, with analyses showing a heterogeneity of results, this relationship being sometimes positive, sometimes negative and sometimes mixed.

Although there is therefore a shared consensus that ESG practices have a positive effect on society, it should be noted that the various contributions and lines of research are still in flux. On this point, it must also be remembered that the regulatory and methodological magmatic nature that characterises the qualitative and quantitative appreciation of sustainability makes the investigation of related phenomena far from easy.

Going back to what has already been represented regarding the theory of value creation-diffusion, which identifies as the rational and measurable objective of the enterprise the maximisation of the economic value of all participants[61], it is necessary to dwell on the effects resulting from the adoption of sustainability principles within the value creation process.

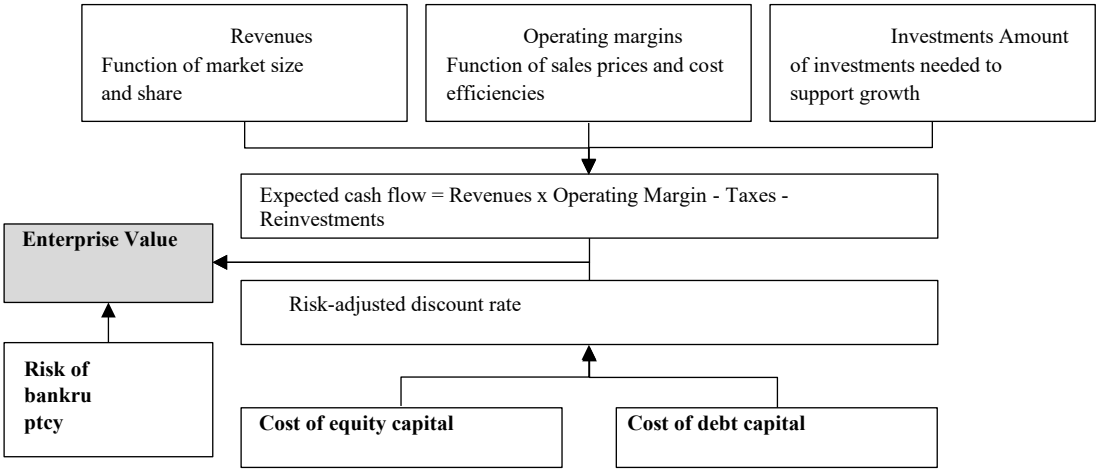
In particular, considering the increase in the company's net present value as the primary management objective, the value created depends on the size of the monetary (or income) flows discounted at a given rate, and thus also on the time and risk profile of these flows[62]. That said, the value created by a business depends on the following main elements

- revenue growth, understood as the ability to increase the quantities sold by means of a growth in the reference market and/or market shares;
- profitability, as the ratio between operating profit after tax and revenues;

[61] SCIARELLI S. (1997), Economia e Gestione dell'Impresa, Cedam, Padova.
[62] COLOMBI F. (2003), Finanza condizionata e teoria del valore. Del merito e del metodo, vol 1, Aracne Editrice, Roma.

- investments, as the amount needed to fuel the revenue growth process;
- risk, which in turn can be broken down into (i) operational risk, captured by the cost of capital, which measures uncertainty about expected revenues and operating profits, and (ii) bankruptcy risk, as the risk inherent in the failure to meet going concern requirements. An increase in risk - of one or both of its elementary components - leads to a decrease in firm value[63];

Figure I – Value drivers[64]



As anticipated, the academic literature does not agree in unanimously defining the causal effects of sustainability practices on firm value and individual underlying levers.

In light of the premise just formulated, Cornell and Damodaran[65] outline three possible scenarios depending on the relationship between sustainable conduct and firm value, namely the virtuous scenario, the punitive scenario, and the negative scenario.

[63] CORNELL B., DAMODARAN A. (2020), "Valutare l'ESG: Fare del bene o sembrare fare del bene?", The Journal of Impact and ESG Investing: 84.
[64] CORNELL B., DAMODARAN A. (2020), "Valutare l'ESG: Fare del bene o sembrare fare del bene?", The Journal of Impact and ESG Investing: 91.
[65] CORNELL B., DAMODARAN A. (2020), "Valutare l'ESG: Fare del bene o sembrare fare del bene?", The Journal of Impact and ESG Investing.

Regarding the virtuous scenario, the implementation of sustainability in the firm's strategies results in a competitive advantage[66] that promotes the creation of shareholder value in the medium to long term[67]. Companies benefit from sustainable conduct in the following dimensions, namely:

- customers, insofar as they are attracted by the sustainability performance of the enterprise favor goods with sustainable characteristics produced by the enterprise over those of competitors in their purchasing choices, resulting in an increase in quantities sold;
- margins, in that although they register a decrease in the short term due to an increase in operating costs aimed at responding to the growing needs of demand, the company's cost structure adjusts, enabling it to achieve higher margins in the medium to long term, for the same increase in revenues
- investment, as the above-mentioned increase in margins results in greater availability of resources to invest in production processes;

The effects depicted above are also reflected in the cost of equity capital, as investors may be incentivized to direct their resources toward virtuous firms as they are perceived as less risky (e.g., less likelihood of penalties and lawsuits), and in the cost of debt capital, as lenders may positively assess the firm's propensity for sustainability with repercussions on the probability of default. It follows that the implementation of good sustainability practices (ESG performance) has the effect of improved access to the capital market[68], lower cost of capital[69], increased demand for products and/or services, and reduced elasticity of demand[70] resulting in a more competitive firm

[66] PORTER M. E., KRAMER M. R. (2011), "La grande idea: Creare valore condiviso. Come reinventare il capitalismo e scatenare un'ondata di innovazione e crescita", Harvard Business Review, vol. 89, n. 1-2: 62-77.
[67] MIRALLES-QUIRÒS M. M., MIRALLES-QUIRÒS J. L., GONÇALVES L. M. V., REDONDO-HERNÀNDEZ J. (2018), "La rilevanza del valore delle performance ambientali, sociali e di governance: il caso brasiliano", Sustainability, vol. 10, n. 3: 1-15.
[68] CHEN I. J., HASAN I., LIN C. Y., NGUYEN T. N. V. (2021), "Le banche valutano il record ambientale dei mutuatari? Evidenza dai contratti finanziari", Journal of Business Ethics, vol. 174: 687-713.
[69] WITOLD J. H., MCGLINCH J. (2019), "ESG, eventi di credito materiali e rischio di credito", Journal of Applied Corporate Finance, vol. 31, n. 2: 105-117.
[70] GANGI F., MUSTILLI M., VARRONE N. (2019), "L'impatto della conoscenza della responsabilità sociale d'impresa (CSR) sulla performance finanziaria aziendale: evidenza dall'industria bancaria europea", Journal of Knowledge Management, vol. 23, n. 1: 110-134.

relative to competitors[71], increased economic and financial performance, and ultimately potentially higher dividends.

In conclusion, in the virtuous scenario, sustainability, and the associated effects on firm acceptance in the network, is an intangible (medium- to long-term) asset that is valued and appreciated by the market[72]. Thus, the firm's adoption of good sustainability practices and establishment of profitable relationships with its stakeholders can result in increased customer loyalty and operational flexibility, as well as mitigate the occurrence of possible legal and reputational risks[73].

In the punitive scenario, the relationship between sustainability and value creation is asymmetrical in nature in that, while the adoption of virtuous practices is not rewarded by the market, failure to implement them results in a punitive mechanism. In the latter circumstance, even if the non-sustainable firm charges lower selling prices than the sustainable firm, consumers refuse to buy its products and/or services, which has negative effects in terms of profitability in the medium to long term. Contextually, non-sustainable enterprises are perceived by the capital market as more risky than sustainable ones, with repercussions on the cost of equity capital and the cost of debt capital.

Compared to the previously illustrated case, in the present scenario, firms are thus "induced" to adhere to sustainability principles in order not to be sanctioned by stakeholders[74] and ultimately see their viability compromised.

In the negative scenario, the investment having to do with the implementation of sustainability practices leads to an increase in costs that is not rewarded by the market, resulting in a loss of competitiveness with respect to competitors and, therefore, a lower economic value. In contrast to previous cases, in the present scenario, firms are "rewarded" for not being sustainable, with a higher economic value than "virtuous" firms. Thus, resuming the individual dimensions of value, we show that:

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[71] WU M. W., SHEN C. H. (2013), "La responsabilità sociale d'impresa nell'industria bancaria: motivazioni e performance finanziaria", Journal of Banking and Finance, vol. 37, n. 9: 3529-3547.

[72] EDMANS A. (2022), "The End of ESG", working paper, n. 847: 1-26.

[73] NGUYEN P., KECSKÉS A., MANSI S. (2020), "La responsabilità sociale d'impresa crea valore per gli azionisti? L'importanza degli investitori a lungo termine", Journal of Banking and Finance, vol. 112: 1-65.

[74] CORNELL B., DAMODARAN A. (2020), "Valutare l'ESG: Fare del bene o sembrare fare del bene?", The Journal of Impact and ESG Investing: 76-93.

- customers: being attracted more by the affordability of products than by their sustainability, they prefer to purchase goods or services that have a lower selling price for the same expected utility;
- margins: firms that invest in greater sustainability experience higher costs and lower margins than non-sustainable firms, as they are not offset by demand appreciation;
- investment: non-sustainable firms having fewer constraints in terms of investment direction decision-making, invest in more efficient production processes.

That being said, the effects depicted above are also positively reflected in the cost of equity capital, as non-sustainable firms experience better economic performance, and in the cost of debt capital, as higher profits and cash flows are associated with lower credit risk. The combined effect of the elements just represented would result in an increase in the value of the unsustainable firm.

CHAPTER II
REGULATORY CONTEXT OF REFERENCE

2.1 The evolution of international regulation

For the purposes of this paper, after outlining the cross-cutting effects of sustainability in corporate governance, a discussion- albeit in its broad outlines-of the current regulatory environment pertaining to sustainability cannot be omitted here.
On a methodological level, there is no doubt that the breadth of issues underlying the subject matter makes it difficult to circumscribe the perimeter of relevant regulatory material. Sustainability, as already argued extensively, stimulates highly intricate issues, encompassing companies (financial and non-financial), consumers, investors, supervisors and regulators, fitting into heterogeneous legal and regulatory dictates.
That being said, a brief and modest description is deemed unavoidable, in the knowledge that the increased complexity of banking management, as well as the need to preserve and adopt suitable strategies to consolidate the fiduciary element of the relationship with *stakeholders*, is further exacerbated by the increased weight assumed by regulation and supervision by supervisory authorities and the potential vulnerability of institutions to risks, so to speak, other than the "traditional" ones.
The aim of this chapter is therefore to illustrate, albeit concisely, the magmatic nature of the regulatory environment, dividing the discussion, for the sake of clarity of exposition, into the following levels:

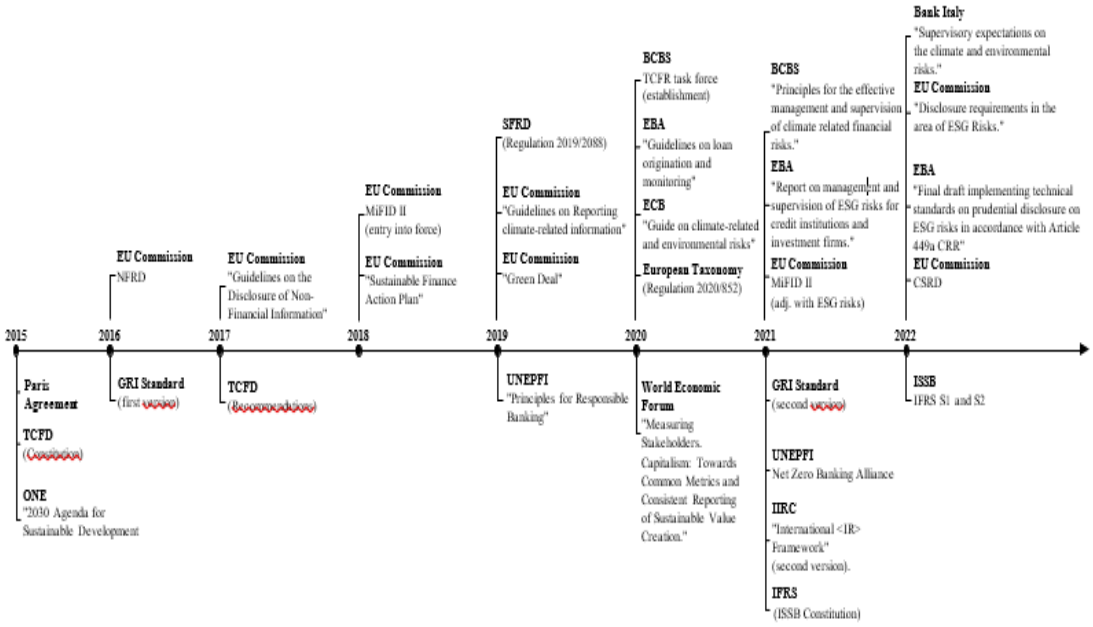
- Specific legislation: regulatory framework dealing with the defining aspects of sustainability and non-financial disclosure.
- derivative legislation: perimeter of all pre-existing banking regulations that are cross cut by the specific legislation;
- conditional regulation: the set of self-regulatory regulations internal to the enterprise (*policies*, regulations and codes) that reflect what is governed by specific and derived legislation[75].

[75] LA TORRE M. (2022), "Banche e finanza sostenibile: per un business model ESG- oriented", Bancaria, n. 5: 2-19.

While more attention will be devoted to the first two levels, a very brief outline will be drawn of the last, recalling in full what has already been argued in the first chapter of this paper.

The following page provides a chronology of the regulatory measures that will be briefly described below.

Figure II – Chronology of referenced regulatory measures



2.2 Specific regulation: brief reconstruction of the regulatory reference context

As anticipated, the regulatory environment regarding sustainability is largely jagged and characterized by regulatory magmaticity, with interventions layered over the recent past by international and European bodies.

As for international interventions having a voluntary nature, starting with corporate reporting following the first Global Reporting Initiative (GRI) frameworks published in 1997, there have been several modifications and additions, first with the standards

released by the Sustainable Accounting Standards Board[76] and later with the Climate Disclosure Standards Board (CDSB) framework.

An initial attempt at harmonization occurred, first, with the Sustainable Development Goals (SDGs) governed by the United Nations 2030 Agenda for Sustainable Development and, later, with the signing of the Paris Agreement by 197 member states of the United Nations Framework Convention on Climate Change. In 2015, the Financial Stability Board (FSB), responding to demands from various sectors about financial information related to environmental and sustainability issues, established the Task Force on Climate-related Financial Disclosure (TCFD), with the intention of issuing voluntary recommendations for climate-related financial reporting. The Basel Committee (BCBS) also formed its own task force in 2020, with a direct focus on climate-related financial risks.

As for the EU context, in 2019 the European Commission presented the so-called "Green Deal" as a growth strategy aimed at responding to current environmental challenges to achieve, through the introduction of incentives and penalties, carbon neutrality by 2050[77].

Mandatory and voluntary regulatory provisions, together with the methodologies and standards developed by practice, have been implemented with the intention of responding effectively to the growing demands of stakeholders (first and foremost investors).

However, the non-harmonized layering of international and European measures has resulted in a profoundly jagged and uneven regulatory framework, as well as significant heterogeneity in interpretation and application; also revealing, in certain circumstances, distorting phenomena with potential threats to the stability of the financial system.

This being the case, supranational legislators have gradually taken a perspective aimed at (i) harmonizing the regulatory framework, ensuring, as in the case of European Union, the preservation of an efficient and frictionless single market, based on the assumption that more transparent, harmonized and comprehensive disclosures about

[76] SASB – SUSTAINABILITY ACCOUNTING STANDARDS BOARD (2018), Banche Commerciali: Standard di Contabilità per la Sostenibilità, ottobre.

[77] COMMISSIONE EUROPEA (2019a), "Il Green Deal Europeo", Comunicazione della Commissione al Parlamento Europeo, al Consiglio, al Comitato Economico e Sociale Europeo e Al Comitato Delle Regioni, dicembre.

the sustainability of business activity is a key element in enhancing investor and consumer confidence, and (ii) implementing actions to mitigate sustainability risks on the financial system.

At the same time, banking and financial sector supervisors have also become increasingly aware of the consequences inherent in economic transformations, i.e., business opportunities and the associated risks arising from regulatory and climate impacts on the financial system. Specifically, with respect to risks, regarding (i) the environmental context, about direct physical risks from natural disasters and indirect transitional risks associated with regulatory actions and impacts on pledged assets, (ii) the social context, about risks attached to lawsuits and reputational cases, and (iii) the governance context, about internal control mechanisms and agency and compliance costs.

The above issues have been enucleated at the European level in the "*Action Plan for Financing Sustainable Growth*" published by the European Commission on March 8, 2018, which outlines in No. 10 actions, the European Union's strategies and lines of action, as well as the timetable of objectives and activities aimed implementing measures that support a transition to a sustainable economy, making the financial system more resilient to any impacts arising from these issues (European Commission, 2018a). The main elements of this plan are as follows:

"*Reorienting capital flows towards a more sustainable economy":* through the definition of a shared taxonomy at the European level on which activities can be defined as sustainable (so-called "European Taxonomy"), with the intention of facilitating the flow of financial resources towards sustainable investments and countering distorting phenomena such as greenwashing. This measure, implemented by EU Regulation 2020/852, declines No. 6 objectives that a financial activity must possess to be classified as sustainable, while defining metrics for its classification[78];

"*Integrating sustainability into risk management*": by way of integrating sustainability issues into rating judgments and market research in order to foster capital allocation to sustainable products and improve the information flow between issuers and investors. In this regard, ESMA published technical advice related to the integration of

[78] COMMISSIONE EUROPEA (2020), Study on Sustainability-Related Ratings, Data and Research, novembre.

sustainable finance into the MiFID II (Markets in Financial Instruments Directive) framework on investment services and the UCITS (Undertakings for the Collective Investment in Transferable Securities) and AIFMD (Alternative Investment Fund Managers Directive) frameworks aimed at further integrating sustainability issues into disclosure requirements. In addition, the EU Regulation 2019/2088 (Sustainable Financial Disclosure Regulation, SFDR) on sustainability disclosure in the financial services industry, to be implemented from March 2021, enshrined "harmonized transparency rules for financial market participants and financial advisors regarding the integration of sustainability risks and the consideration of adverse sustainability effects in their processes and communication of sustainability-related information related to financial products";

"*Promoting transparency and long-term vision*": aimed at strengthening communication on sustainability and accounting regulation and promoting sustainable corporate governance that mitigates short-termism in financial markets.

Based on the above, the EU legislature is implementing initiatives to encourage institutions and practitioners to consider sustainability factors as part of their strategies in order to seize the opportunities and understand the risks involved[79].

The central role in addressing these challenges in the near future lies with governance, which must guide the company toward the pursuit of sustainable success through a long-term vision, understood as "the goal that guides the actions of the governing body and is embodied in the creation of long-term value for the benefit of shareholders, taking into account the interests other stakeholders relevant to the company"[80].

In addition to what is depicted, the EU context is characterized by the coexistence of prudential measures-regarding credit institutions and investment firms in order to integrate sustainability risks into the broader risk management framework (i.e., credit, market, liquidity and operational)-and conduct measures.

The latter primarily include:

"*Directive 2014/95/EU (Non-Financial Reporting Directive, NFRD)*": the first European legislative text issued on sustainability, which came into force in 2017

[79] COMMISSIONE EUROPEA (2019b), "Orientamenti sulla comunicazione di informazioni di carattere non finanziario: Integrazione concernente la comunicazione di informazioni relative al clima", Comunicazione 2019/C 209/01, giugno.

[80] COMMISSIONE EUROPEA (2020), Study on Sustainability-Related Ratings, Data and Research, novembre.

(transposed in Italy by Legislative Decree No. 254/2016, which introduced the Non-Financial Statement, DNF), requires public interest entities (PIEs) to provide, as a principal matter, qualitative-quantitative disclosure on the impacts of their operations on these issues. This directive constitutes a so-called "*principle - based*" regulatory set of rules that offers individual recipients the opportunity to calibrate and articulate the disclosure in a specific way that is consistent with their business models values and strategies. In essence, such disclosures must respond not merely to an act of compliance, but rather possess the characteristics of usefulness, relevance, comparability and fairness, as well as be guided by the concept of "*materiality*" i.e., appropriateness with respect to the nature of the activity carried out, the specific characteristics of the business and the corporate organization (European Parliament and Council, 2020). In this regard, the proposed Corporate Sustainability Reporting Directive (or CSRD) adopted by the European Commission significantly expands reporting requirements and the scope of companies involved than the NFRD framework, as it targets not only PIEs and financial sector players, but also listed SMEs and large companies[81];

"*EU Regulation 2019/2088 (SFDR)*": requires traders and financial advisors to disclose processes for valuing the risks and impacts of ESG factors at the firm and financial product level.

Finally, the importance of other side initiatives is noted, such as, primarily:

"*IFRS Foundation*": consultation on sustainability reporting that is expected to create a basis for the development of comparable and consistent global sustainability reporting standards. This consultation, which ended on December 31, 2020, highlighted the need (i) for investors to receive reports that highlight the short-, medium-, and long-term impacts of these issues on the company's business model and enterprise value, and (ii) for coordination among the different standard setters create a global baseline that allows for easy comparability regarding sustainable reporting[82]. The central role assumed by the IFRS Foundation, which is responsible the governance

[81] COMMISSIONE EUROPEA (2021), Proposta di direttiva del Parlamento Europeo e del Consiglio che modifica la direttiva 2013/34/UE, la direttiva 2004/109/CE, la direttiva 2006/43/CE e il regolamento (UE) n. 537/2014 per quanto riguarda la comunicazione societaria sulla sostenibilità, aprile.

[82] IFRS FOUNDATION (2021a), Dichiarazione di Feedback dei Trustee della IFRS Foundation sul Documento di Consultazione sulla Rendicontazione della Sostenibilità, aprile.

and monitoring of the International Accounting Standards Board (IASB), is also evident in the establishment of the International Sustainability Standards Board (ISSB), whose purpose is to develop a global baseline and high-quality sustainability disclosure standards to meet the needs of investors[83];

"*International Integrated Reporting Council (IIRC)*": an international body established since 2010 and supported by the main international bodies on the subject (GRI, IASB, FASB and CDP), with intention of creating a shared reporting model that integrates economic information with sustainable information. In 2013, the IIRC published the International Integrated Reporting Framework (the so-called "International <IR> Framework"), containing guidelines, principles and key elements for the creation of integrated financial statements with the intention of supporting corporate decision-making in the creation of value in the short, medium and long term, as well as subsequent reporting process. In 2021, IIRC updated this document by expanding the concept of value creation and the concept of outcome (i.e., positive consequences and negative on capital financial, productive, intellectual, natural, human, social and relational, generated by business activity)[84];

• World Economic Forum (WEF): an international public-private organization composed of legislators, economists, and managers to set and share agendas on the topic. In 2020, commissioned by the WEF, the consulting firms Deloitte & Touche, Ernst & Young, KPMG and PricewaterhouseCoopers (so-called "Big Four") released the document "Measuring Stakeholder Capitalism: Towards Common Metrics and Consistent Reporting of Sustainable Value Creation," in which 21 primary common metrics and 34 secondary metrics are defined, useful for the drafting of a global system of shared and internationally comparable reporting[85].

However, it should be noted that the different standards illustrated are not fully aligned, with obvious difficulties for companies in determining actual declination of the standard in terms of materiality thresholds and, therefore, relative disclosure.

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[83] IFRS FOUNDATION (2021b), Dichiarazione del Monitoring Board della IFRS Foundation sull'annuncio della IFRS Foundation riguardo alla International Sustainability Standards Board, novembre.

[84] IIRC – INTERNATIONAL INTEGRATED REPORTING COUNCIL (2021), International <IR> Framework, gennaio.

[85] WEF – WORLD ECONOMIC FORUM (2020), Misurare il Capitalismo degli Stakeholder verso Metriche Comuni e una Rendicontazione Consistente della Creazione di Valore Sostenibile, settembre.

That being said, the regulatory measures represented are nonetheless subject to becoming, and the near future will likely see an expansion of disclosures, as well as the introduction of measures that integrate sustainability factors into aspects of risk management within already outlined regulatory frameworks. All hopefully in a harmonized and coordinated manner.

In conclusion, the underlying intention of the various regulatory sources seems quite clear, namely to broaden the audience of those involved in reporting activities (financial and non-financial) and to deepen the related information, as companies that "*adopt a longer-term perspective in decision-making processes, incur lower financing costs, attract and retain talented staff, perform better, have better relationships with consumers and stakeholders, and fewer and less significant business interruptions*"[86].

2.3 Specific legislation: summary reconstruction of non-financial reporting frameworks

Recalling what has already been represented about the regulatory framework of reference, the process of reporting non-financial information arises as a tool with a strong cognitive connotation, necessary for the company to create knowledge with regard to the conduct taken towards different publics and consolidate consensus around its initiatives. In this circumstance, to make communication on the issues in question as usable, homogeneous, and comparable at the international and EU level as possible, numerous frameworks have been developed by various international organizations. However, at present, a single framework of universally valid and shared principles that would allow for temporal and spatial verifiability and comparability of information on the issues at hand is still absent.

Specifically, the main frameworks used in practice at the international level are.

and European turn out to be as follows:

• Global Reporting Initiative Standard (or GRI Standard): the GRI reporting framework, initially released by the Global Sustainability Standards Board (GSSB) in

[86] CONSOB – COMMISSIONE NAZIONALE PER LE SOCIETÀ E LA BORSA (2017), "Disposizioni Attuative del Decreto Legislativo 30 dicembre 2016, n. 254 Relativo alla Comunicazione di Informazioni di Carattere Non Finanziario", Documento di consultazione, luglio.

2016, aims to create a common language for organizations and stakeholders through which to report on the economic, environmental and social impacts of organizations. The standards governed within that framework, divided into universal (i.e., pertaining to reporting principles, general disclosures, and management methods) and specific (i.e., pertaining to economic, environmental, and social issues) are designed to improve the quality and overall comparability of informational disclosure of impacts arising business activity, i.e., to enable greater transparency and accountability of organizations[87]. In summary, the GRI standards encapsulate the methodological instructions and approach necessary for companies to prepare sustainability reporting[88]

• Sustainability Accounting Standards Board (or SASB): the SASB, a nonprofit organization established in 2011, aims to develop sustainability disclosure standards that provide a shared language regarding corporate performance to enable the disclosure of ESG issues in a relevant, reliable and comparable manner to different stakeholders. These standards include No. 77 appendices, in which the most relevant issues are identified for each relevant industry sector[89];

• Task Force on Climate-related Financial Disclosure (or TCFD): the TCFD, established in 2015 by the Financial Stability Board (FSB), aims to quantify the risks generated by climate change on the stability of the financial system. In 2017, the TCFD developed a set of recommendations, universal and sectoral, aimed at promoting greater disclosure transparency on climate change-related financial risks by large firms in the financial markets. These recommendations are divided into four main thematic areas, namely governance, which is inherent to information about the involvement of management and supervisory bodies regarding the oversight and management of climate-related risks and opportunities strategy, which is inherent to information climate-related opportunities and risks, as well as impacts current and potential on the business, risk management, disclosure regarding climate-related risk management

[87] GSSB – GLOBAL SUSTAINABILITY STANDARDS BOARD (2021), GRI Standards.
[88] Companies preparing the DNF must follow a benchmark reporting standard and/or a completely autonomous methodology explicitly stated. Globally, several initiatives are found that aim to establish sustainable reporting guidelines. Regarding the relevance of the GRI Standards in Italy, it should be noted that the totality of the entities (no. 210 of which no. 150 companies with listed shares in Italy) that have published their DNF as of December 31, 2021 - pursuant to Consob's executive determination no. 61 of February 4, 2022 - use these standards (CONSOB, 2022a).
[89] SASB – SUSTAINABILITY ACCOUNTING STANDARDS BOARD (2018), Banche Commerciali: Standard di Contabilità per la Sostenibilità, ottobre.

processes, and metrics and targets, as the development of functional metrics and targets for measuring potential climate-related financial impacts based on identified risks and opportunities[90];

• Corporate Sustainability Reporting Directive (or CSRD): on April 21, 2021, the European Commission published a proposal for a Sustainability Reporting Directive (so-called "*CSRD*"), which will require European companies meeting certain size requirements to disclose a range of information on risks and impacts related to sustainability issues of their operations. The main objective of this measure, effective fiscal years 2023-2025, is to increase the quantity, quality and comparability of the information provided[91];

• European Taxonomy: classification of activities that can be considered sustainable based on alignment with EU environmental objectives. Specifically, under Article 8 of the European Taxonomy, companies subject to NFRD, and subsequently to the new CSRD, are expected to publish information regarding the alignment of their activities with the European Taxonomy. Specifically, non-financial firms must publish information regarding the portion of their revenues attributable to products or services aligned with the European Taxonomy, as well as the related dedicated investments (Capex and Opex), and financial firms must publish key indicators (KPIs) expressing the percentage of alignment with the European Taxonomy of assets under management. Implementation will be phased in over the period 2022-2024.

Regarding CSRD, the proposal for a European framework to replace the current NFRD framework assumes particular relevance in the area of financial and non-financial performance disclosure, as it establishes an equalization between financial and non-financial disclosures, which will have to be included in the management report published to accompany the annual financial statements (subject therefore, subject to audit by the statutory auditor) and will require European companies to disclose a range of information pertaining to the risks and impacts of their activities dual materiality perspective, i.e., environmental and social risks to which they are subject and impacts caused by their operations.

[90] TCFD – TASK FORCE ON CLIMATE-RELATED FINANCIAL DISCLOSURES (2017), Rapporto finale. Raccomandazioni della Task Force sulle Disclosures Finanziarie relative al Clima, giugno.

[91] COMMISSIONE EUROPEA (2021).

CSRD will therefore require companies to report in greater depth on their goals, strategies and role of corporate governance, while illustrating the process of collecting and processing data and information, including those pertaining to individual moments in the value chain. The data to be presented will be qualitative-quantitative, historical and prospective, and pertaining to short-, medium- and long-term time horizons.

The main goal of CSRD is to increase the quality, quantity and comparability of information that is disseminated on the topic of sustainability, while at the same time broadening the range of stakeholders significantly; all with the aim of ensuring an economically competitive single European market that operates according to sustainability logic in the medium- to long-term.

In addition, consider that while the SFDR imposes stricter requirements about the information provided by financial firms regarding sustainability risks, the CSRD aims to ensure that companies (including non-financial companies) report the information to investors and firms subject to the SFDR.

In summary, the international and European regulatory landscape appears to be characterized by high dynamism and deep regulatory stratification, in which non-financial reporting metrics and methodologies, still in continuous evolution, will hopefully be expanded to the audience stakeholders according to a principle of proportionality and, at the same time, by the search for greater transparency and convergence in order to avert any distorting phenomena, which could potentially undermine investor confidence and, therefore, financial market stability.

One fact emerges. The transition to a sustainable economy can only depend, in the main, on technological innovation and the quality and comparability of information[92]. However, the wish for a broadening of the mapping of subjects, with the inclusion of as many SMEs as possible as well (in this regard, consider the relevance of this issue for economic systems characterized, as in Italy, by productive fabrics with a high concentration of SMEs), comes up against a vuln us that is not easy to resolve: The availability of granular data of a qualitative-quantitative nature on which financial firms (and investors) can appreciate the sustainability of firms' productive activity in

[92] GALLETTA S., MAZZÙ S., NACITI V. (2022), "Un'analisi bibliometrica delle performance ESG nel settore bancario: Dallo stato attuale alle direzioni future", Research in International Business and Finance, vol. 62: 1-27.

order to monitor and manage the associated risks and, ultimately, make informed investments.

Overcoming this issue, which also inevitably passes through an increase in the degree of technological innovation of companies, is prodromal to the construction of an effective European taxonomy (not focused exclusively on the environmental aspect), that is, a system correlated with the availability of data in which the logic of convenience between the benefits of recognizing a given degree of sustainability and the cost of collecting the data itself is clear[93][94].

At the state of the art, the information needs in question have been partially addressed by banking intermediaries in a twofold perspective, on the one hand, for sustainability profiles pertaining to medium to large-sized companies, also relying on subjects external to the banking intermediaries themselves (agencies), on the other hand, for economic contexts characterized by a significant predominance of SMEs and, therefore, often outside the assessment perimeter of the aforementioned external subjects, by initiating a slow and extensive process of customer mapping through the use of internally developed qualitative methodologies.

2.4 Derivative legislation: summary reconstruction of the relevant banking regulations

Based on the above, supervisors are implementing initiatives to encourage institutions and operators to consider sustainability factors as part of their strategies in order to seize the opportunities and understand the risks.

[93] SABATINI G. (2022), "Verso una finanza sostenibile per un'economia sostenibile", Bancaria, n. 6: 2-7.

[94] On this point it is considered useful to recall the words of Onida (1970, pp. 42-43): "the surveys their own very differently high cost according to their breadth and complexity and the readiness of the information offered, thanks also to the use of more or less expensive instruments [...], to the employment of variously qualified personnel and to the related structure of entire organization of the company, as regards, among things, the centralization or decentralization of the various surveys. In concrete companies [...] the convenient arrangement of the surveys must naturally also take into account the said cost, and avoid excessive burdens in relation to the usefulness that the company may derive."

With reference to banking regulations, the initiatives promoted by the EBA, the ECB and the Basel Committee are of particular importance. The figure below highlights these initiatives with an indication of the date of publication.

Figure III – Summary reconstruction of the banking regulatory environment

Authority	Reference	Publication
EBA	Art. 98(8), CRD V	June 2013
	Art. *434a*, CRR II	May 2019
	Art *501c*, CRR II	May 2019
	Guidelines on loan origination and monitoring	May 2020
	Report on management and supervision of ESG risks for credit institutions and investment firms	June 2021
ECB	*Guide on climate-related and environmental risks*	November 2020
Basel Committee	*Principle for the effective management and supervision of climate-related financial risks*	June 2022

Proceeding in order, the role played by the EBA in sustainable finance takes on particular centrality, by virtue of the mandates given to it by the regulatory framework that emerged following the introduction of CRR II and CRD V[95]. In detail, the main mandates placed on the EBA appear to be as follows:

• Art. 9, CRD V: The EBA was asked to assess the possible inclusion of ESG risks in the supervisory review and evaluation process (so-called "*Supervisory Review and Evaluation Process, SREP*"), as well as to develop a uniform definition of ESG risks (physical risks and transition risks) and develop appropriate qualitative and quantitative criteria for assessing the impact of ESG risks on financial stability in the short, medium and long term, also including scenario and stress-test analyses. In addition, it should outline the arrangements, processes, mechanisms, and strategies to

[95] Regarding the regulatory environment, it should be noted that following the publication of EU Regulation 2019/876 (CRR II, Capital Requirements Regulation), which is part of the broader regulatory reform package of so-called "Risk Reduction Measures," comprising the regulatory interventions CRD V (Capital Requirements Directive), BRRD II (Banking Recovery and Resolution Directive) and SRMR II (Single Resolution Mechanism Regulation), significant changes have been introduced.

be implemented by institutions to identify, assess, and manage ESG risks, as well as the impact on lending and financial intermediation activities[96];

• Article 434a, CRR II: The EBA must provide for the development of model disclosures by 2021 for the inclusion of ESG risks in the Pillar 3 market disclosure requirements (as defined by the Basel Committee) under Part 8 CRR II[97]. This development ties in with the obligations on large institutions defined in Article 449a of CRR II, i.e., to disclose information about ESG risks, starting in June 2022[98];
• Art. 501c, CRR II: The EBA must consider whether a specific prudential treatment for exposures substantially associated with environmental and/or social objectives is warranted as part of Pillar 1 capital requirements (as defined by the Basel Committee), while considering the potential effects of such prudential treatment on financial stability and lending in the European Union[99]. Following up on the mandates above,

[96] Article 98 of CRD V states that: "EBA shall assess the potential inclusion in the review and evaluation performed by competent authorities of environmental, social and governance risks (ESG risks).
For the purposes of the first subparagraph, EBA's assessment shall comprise at least the following:
(a) the development of a uniform definition of ESG risks, including physical risks and transition risks; the latter shall include the risks related to the depreciation of assets due to regulatory changes;
(b) the development of appropriate qualitative and quantitative criteria for the assessment of the impact of ESG risks on the financial stability of institutions in the short, medium and long term; such criteria shall include stress testing processes and scenario analyses to assess the impact of ESG risks under scenarios with different severities;
(c) the arrangements, processes, mechanisms and strategies to be implemented by the institutions to identify, assess and manage ESG risks;
(d) the analysis methods and tools to assess the impact of ESG risks on lending and financial intermediation activities of institutions.
EBA shall submit a report on its findings to the Commission, the European Parliament and to the Council by June 28, 2021.
On the basis of the outcome of its report, EBA may, if appropriate, issue guidelines, in accordance Article 16 of Regulation (EU) No 1093/2010, regarding the uniform inclusion of ESG risks in the supervisory review and evaluation process performed by competent authorities."
[97] Pursuant to Articles 434a and 449a CRR, the EBA published in January 2022 the document "Final Report. Final draft implementing technical standards on prudential disclosures on ESG risks in accordance with Article 449a CRR," i.e., implementing technical standards specifying how and when the relevant institutions must make disclosures on ESG risks (physical and transitional) (EBA, 2022).
[98] Article 449a of CRR II states that: "With effect from June 28, 2022, large institutions that have issued securities admitted to trading on a regulated market of any Member State, as defined in Article 4(1)(21) of Directive 2014/65/EU, shall disclose information regarding environmental, social and governance risks, including physical risks and transition risks, defined in the report referred to Article 98(8) of Directive 2013/36/EU. The information referred to in the first subparagraph shall be published on an annual basis the first year and twice a year thereafter."
[99] Article 501c of CRR II states that: "The EBA shall, after consultation with the ESRB, assess, on the basis of available data and the conclusions of the Commission's High Level Expert Group on Sustainable Finance, whether dedicated prudential treatment of exposures related to activities substantially associated with environmental and/or social objectives is warranted. In particular, the EBA assesses:

the EBA has adopted strategies (i.e., strategy and risk management, key metrics, stress testing and scenario analysis, and prudential treatment), courses of action, and timeline underlying them as part of the "*EBA Action Plan on Sustainable Finance*" dated December 6, 2019. In addition, given the onerous nature of the mandates given to it, the EBA encourages individual institutions to take a proactive approach to consider from the outset the integration of ESG issues within their strategies, as well as in their risk management processes and internal control systems[100].

In addition to above, it should be noted that the EBA has recently published the following acts addressing the issue of sustainability:

• "*Guidelines on loan origination and monitoring*": these guidelines aim to close some gaps in lending practices while introducing so-called "Environmentally Sustainable Lending" and obligations on individual institutions regarding policies on lending, monitoring of such loans, and credit risk policies and procedures[101];

• "*Report on management and supervision of ESG risks for credit institutions and investment firms*". in light of the findings of the consultation process conducted from November 2020 to February 2021 focusing on the resilience of financial institutions about the potential impacts of ESG risks over different time horizons, the EBA highlights the need for individual institutions to consider ESG factors, and the risks associated with them, declining their strategies, business processes, corporate governance processes and risk management, pointing out, on the one hand, how the current regulatory framework may not allow the EBA itself to understand the effects, in terms of breadth and scope, of these risks on individual financial positions and related vulnerabilities, and proposing, on the other hand, a revisiting of the current

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a)The methodologies for assessing the actual riskiness of exposures related to assets substantially associated with environmental and/or social objectives than the riskiness of other exposures;
b)The development of appropriate criteria for assessing physical risks and transition risks;
c)The potential effects of dedicated prudential treatment of exposures related to assets substantially associated with environmental and/or social objectives on financial stability and bank lending in the Union. EBA shall submit a report on its findings to the European Parliament, the Council and the Commission by June 28, 2025.
On the basis of this report, the Commission shall submit to the European Parliament and the Council a legislative proposal, if appropriate."

[100] EBA – EUROPEAN BANKING AUTHORITY (2019), Piano d'Azione EBA sulla Finanza Sostenibile, dicembre.

[101] EBA – EUROPEAN BANKING AUTHORITY (2020b), “Sull'erogazione e monitoraggio dei prestiti”, Linee guida, maggio.

supervisory framework in order to detect whether individual institutions consider the long-term resilience of the business model[102][103].

As for the ECB, the "Guide on climate-related and environmental risks" represents the supervisor's expectations for institutions' governance of climate-related and environmental risks in order to boost their awareness and preparedness for the same. Specifically, these expectations cover business model and strategies, governance and risk appetite, risk management and disclosure[104].

In the context of strategic business planning, expectations concern the following:

• Promote a risk culture that also considers sustainability risks;

• Analyze the impact of climate and environmental risk on the environment in which they operate in the short, medium and long term in order to make informed decisions in setting corporate strategy;

• Conduct evaluations that span a medium- to long-term time horizon;

• Define strategies inherent in environmental risk for different credit and trading portfolios;

• Define performance indicators for each declination of environmental risk at the level of even assets and portfolios;

• Integrate climate risks within the frameworks on governance and risk appetite.

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[102] EBA – EUROPEAN BANKING AUTHORITY (2021a), Rapporto sulla gestione e supervisione dei rischi ESG per le istituzioni di credito e le società di investimento, giugno.

[103] In this regard, "The EBA sees the need for enhancing the incorporation of ESG risks into institutions' business strategies, business processes and proportionately incorporate ESG risks into their internal governance arrangements. Adjusting the business strategy of an institution to incorporate ESG risks as drivers of prudential risks can be considered as a progressive risk management tool to mitigate the potential impact of ESG risks. The EBA also sees a need to gradually develop methodologies and approaches to a climate risk stress test, while considering the methodological and data constraints. The objective of a climate risk stress test should be to inform on the resilience of institutions' own business model and investment strategies. In order to reflect the ESG risks in the supervisory evaluation, the EBA sees a need to proportionately incorporate the ESG factors and considerations into the business model analysis, in particular with regards to the analysis of business environment, the current business model, the analysis of the strategy, and the assessment of the viability and sustainability of the business model. However, the existing assessment under the Supervisory Review and Evaluation Process (SREP) of credit institutions might not sufficiently enable supervisors to understand the longer term impact of ESG risks, its breadth and magnitude, on future financial positions and related long-term vulnerabilities. In this context, the EBA sees a need to introduce a new area of analysis in the supervisory assessment, evaluating whether credit institutions sufficiently test the long-term resilience of the business model against the time horizon of the relevant public policies or broader transition trends, i.e. exceeding commonly used timeframes of 3-5 years or potentially even the ten-year-horizon already applied in some jurisdictions" (EBA, 2020a, p. 9).

[104] BCE – BANCA CENTRALE EUROPEA (2020), Guida sui rischi climatici e ambientali: aspettative di vigilanza in materia di gestione dei rischi e informativa, novembre.

Finally, the Basel Committee with the document "*Principle for the effective management and supervision of climate-related financial risks*," published in June 2022 and pertaining to the second pillar of the prudential control process, declines No. 18 principles for banks and for supervisors in order to provide, in accordance with the principle of proportionality regarding the size, complexity and risk profile of banks and the relevant banking system, improved practices inherent in the management of climate-related financial risks. Specifically, the principles for banks cover the identification and quantification of climate-related financial risks and the subsequent consideration of those judged to be material (over different time horizons) in their internal capital adequacy assessment (ICAAP) and liquidity assessment (ILAAP) processes (principle no. 5), the identification, monitoring and management of relevant climate-related financial risks and the subsequent consideration of them in the risk appetite and risk management framework (RAF), the consideration of climate-related risks in the corporate measurement and reporting system, the consideration of the impacts of climate-related risks on credit risk, market risk, liquidity risk and operational risk and conducting scenario analysis and stress tests in order to appreciate the degree of resilience of its business model and strategies, as well as on the institution's overall risk profile[105].

In conclusion, the various initiatives promoted by supervisors are moving in one common direction, namely, to emphasize about the magnitude of the effects of the issue at hand, encouraging intermediaries to consider ESG factors and related risks in the declination of their strategies (e.g., lending), business processes (e.g., internal control processes), governance processes and risk management practices, and, in general, prudential supervisory obligations.

[105] COMITATO DI BASILEA (2022), Principi per la gestione e supervisione efficace dei rischi finanziari legati al clima, giugno.

CHAPTER III

SUSTAINABILITY: RESEARCH METHODOLOGIES AND ANALYSIS OF INTERNATIONAL STUDIES

3.1 The relationship between sustainability and performance in banking

The adoption of an expanded perspective of interrelationship between the economic-financial and social dimensions has resulted in the emergence of a new line of thought of government action, namely sustainability as an element within the system of essential principles and doctrinal and methodological foundations on which corporate management must base its actions[106].

Thus, action will be guided by a criterion of maximizing the utilities/satisfaction of individual stakeholders in the Paretian sense, i.e., at parity with (or at least limiting the negative effects of) the satisfaction of the remaining actors/ stakeholders[107].

The enterprise, the bearer of social responsibility, thus becomes an "*instrument for creating quality in society*"[108] in that it views itself not as a closed and separate system but as an entity immersed in society that legitimizes its existence by responding to society's demands.

However, the phenomena highlighted concern not only industrial firms, as they are directly and physically involved through their production processes, but also financial firms, considering the role they play in economic-social development through their function of directing financial flows and knowledge of the context in which they are located, and their consubstantial focus on governing the risk inherent in the major changes and transformations affecting the economy and society[109].

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[106] GOLINELLI G. M., VOLPE L. (2012), Consonanza, Valore, Sostenibilità: Verso l'Impresa Sostenibile, Cedam, Padova.

[107] MOHR L. A., WEBB D. J., HARRIS K. E. (2001), "I Consumatori Si Aspettano che le Aziende Siano Socialmente Responsabili? L'Impatto della Responsabilità Sociale d'Impresa sul Comportamento d'Acquisto", The Journal of Consumer Affairs, vol. 35, n. 1: 45-72.

[108] NORMANN R. (1979), Le condizioni di sviluppo dell'impresa, Etas, Milano.

[109] BECK T., DEMIRGÜÇ-KUNT A., LEVINE R. (2010), "Istituzioni Finanziarie e Mercati tra Paesi e nel Tempo: Il Database Aggiornato sullo Sviluppo e la Struttura Finanziaria", The World Bank Economic Review, vol. 24, n. 1: 77-92.

It should be represented, preliminarily, that all the arguments expressed, in a general way regarding the enterprise, in Chapter I of this paper remain valid, given that the bank is "*an enterprise characterized by certain economic specificities but with an objective function absolutely similar to that of any other enterprise: to optimize its position in the markets in which it operates, according to certain objectives of return on equity, and to adopt a strategy consistent with these objectives*"[110].

That said, the centrality of the role assumed by financial firms in the growth of sustainable practices can be articulated from two angles: macroeconomic and microeconomic. As for the macroeconomic perspective, financial firms affect the amount of savings and investment, influence the marginal productivity of capital by allocating resources to certain projects rather than others, and affect the overall level of economic activity through the payment system and intermediation costs.

As for the microeconomic perspective, financial firms offer services to consumers and households based on specific demands and needs, screening and monitoring activities, and financial expertise and resources that influence the operations of individual firms[111].

In essence, in view of what has just been briefly argued, "*the system of credit institutions tends in turn to become the most representative phenomenon of the modern market, the most sensitive "place" of the same, the center that welcomes and propagates every life impulse of the economic world*"[112].

However, although the role of financial firms is central in supporting virtuous evolutionary trajectories of the economy toward more sustainable realities, this cannot be separated from effective actions by public institutions and supervisors capable of declining appropriate industrial, social, fiscal and monetary policies. The sustainable transition cannot be entrusted to a mere "leverage effect" of the financial sector capable of dragging industrial firms along, but requires broader positive, conscious and organic policies that foster highly dynamic modes of development[113].

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[110] ONADO M. (2004), La banca come impresa, Il Mulino, Bologna.
[111] SCHOLTENS B. (2006), "La Finanza come Motore della Responsabilità Sociale d'Impresa", Journal of Business Ethics, vol. 68: 19-33.
[112] CAPRARA U. (1946), La Banca. Principii di economica delle aziende di credito, Giuffrè Editore, Milano.
[113] CIPOLLONE P. (2022), "The Role of Central Banks for Green Finance", convegno "Second Digital Day", 11-12 marzo, Università di Firenze, Banca d'Italia.

In summary, the intermingling of legislative and regulatory interventions, together with the role assumed by financial and non-financial firms, is crucial to achieving the environmental goals listed in Article 9 of the European Taxonomy, namely:

- Climate change mitigation;
- Adaptation to climate change;
- Sustainable use and protection of water and marine resources;
- Transition to a circular economy;
- Pollution prevention and reduction;
- Protection and restoration of biodiversity and ecosystems.

By way of example only, three relevant cases are mentioned:

• industrial policies (technology-driven): the transition to a sustainable economy requires increasingly large investment flows toward clean energy production and storage, reducing those toward fossil fuel extraction. This represents a major shift from current policies in which fossil fuels are the main source of energy. On this topic, consider the innovative push toward transition of European policies aimed at promoting the use of energy from renewable sources (e.g., those for electricity generation), initiated in the early 2000s, and declined in individual EU countries, which through incentive tariff mechanisms (e.g., "*Feed-in Tariff*" and "*Feed-in Premium*"), recognize sustainable producers a price significantly higher than the market price for a medium- to long-term time horizon;

"Fiscal policies": imposing a "price" on carbon dioxide promotes the decarbonization process as it makes low-emission energy more competitive in the market and, consequently, encourages the reduction of fossil fuels. In addition, such fiscal policies, on the one hand, foster a general climate of confidence that encourages investment in new technologies and, on the other, generate resources (revenue) to be directed toward industrial energy transition policies. In this regard, International Monetary Fund and OECD highlight how policymakers can use several tools, namely:

"*Carbon Tax*": a tax instrument that addresses the amount of carbon dioxide emissions produced by the fossil fuel supply chain (i.e., processing and refining processes). Such taxes provide a degree of certainty regarding the future evolution of emission prices with direct revenue for finance administrations.

"*Emission Trading System (ETS")*: under the ETS, the legislature establishes an overall cap (cap) on allowable emissions (to which a number of emission "allowances" corresponds) by companies, beyond which these emissions must be covered through purchase of additional allowances on the market. The price of these additional allowances is determined by the interaction between demand (surplus entities) and supply (non-surplus entities). The legislature thus sets a maximum threshold (cap) that gradually decreases over the years in order to provide incentives to reduce emissions and, at the same time, generate revenue[114];

"*Fuel Excise Tax*": fuel excise taxes create economic incentives similar to carbon dioxide emission taxes and ETS, although their main objective is to raise revenue in the state budget. These taxes are therefore to be framed as implicit taxes on carbon dioxide emissions[115];

"*Monetary policies*": monetary policy initiatives can support the economic transition process by providing long-term funding for banks to deploy green policies against favorable interest rates. Given that climate change affects the ability of central banks to fulfill their price stability mandate (consider, for example, the likely increase in the riskiness of portfolio securities and potential losses in their value), initiatives are reported in the European context to safeguard central banks' balance sheets in order to tutal their ability to fulfill their price stability mandate, raising awareness among financial and non-financial actors about the potential impacts of climate change, and proactively addressing climate change through monetary policy instruments that directly involve the balance sheet of central banks. Regarding the latter initiative, the following are highlighted in the main:

"*Greening Central Bank Financing and/or Lending Quotas*": the ECB, under the mandate to support environmental goals and in the knowledge that refinancing operations conditions banks' lending policies[116], is developing a Green TLTRO program in order to facilitate the sustainable transition of the real economy through

[114] The EU legislature introduced and regulated the so-called "European Union Emissions Trading Scheme" with Directive 2003/87/EC, which came into effect on January 1, 2015.

[115] IMF – INTERNATIONAL MONETARY FUND, OECD – ORGANISATION FOR ECONOMIC COOPERATION AND DEVELOPMENT (2021), Politica Fiscale e Cambiamento Climatico: Rapporto IMF/OECD per i Ministri delle Finanze del G20 e i Governatori delle Banche Centrali, aprile.

[116] VAN'T KLOOSTER J., VAN TILBURG R. (2020), Mirare a una ripresa sostenibile con i Green TLTRO, Positive Money Europe, Bruxelles

the promotion of green lending policies aligned with the principles enshrined in the European Taxonomy;

"*Greening the Collateral Framework*": revision of eligibility criteria, utilization rules, and risk control measures regarding assets placed as collateral, based on aligning them with the principles enshrined in the European Taxonomy, with possible effects in terms of thresholds on carbon footprint, negative screening, and haircuts;

"*Greening outright Asset Purchase Programmes (Green QE)*": enhancement, within the framework of the ECB's public and private securities purchase programs, of environmental sustainability factors by revisiting the selection and calibration policies of the securities portfolio (so-called "*Green QE*"). This initiative could therefore lead to a check on the afference of securities to the principles of the European Taxonomy, with a possible gradual replacement of securities issued by entities considered as non-virtuous[117].

It is pointed out, also in the light of the various studies conducted, that the policies just represented, although separable, often appear bound by mutual relations and must therefore be observed as a coordinated and harmonized set of acts prodromal to the effective pursuit of the same ultimate goal[118].

As for the Italian context, it is noteworthy the initiative promoted by the legislature under Article 64, paragraph 2, of Decree Law 76/2020 (the so-called "*Simplification Decree*"), which has mandated SACE S.p.A. - the implementer of the so-called "Green New Deal" - to issue green guarantees and insurance coverage, within the limits of 2.5 billion euros, to Italian companies, of any size, that intend to avail themselves of financing for the implementation of projects having as their object one of the following purposes:

- Climate change mitigation and adaptation.
- Sustainable use and protection of water and marine resources.
- Transition circular economy.
- Pollution prevention and reduction.
- Protection and restoration of biodiversity and ecosystems.

[117] BCE – BANCA CENTRALE EUROPEA (2021), "Essere o non essere 'green': come può la politica monetaria reagire al cambiamento climatico?", Occasional paper, novembre.
[118] BCE – BANCA CENTRALE EUROPEA (2022), "Mitigazione del cambiamento climatico: quanto è efficace il green quantitative easing?", Working paper, agosto.

The issuance of such guarantees, which are of an "*explicit, unconditional, irrevocable nature and extend to the repayment of principal, payment of interest and any other ancillary charges, net of fees received for the same guarantees*"[119], is subject to the findings of a due diligence process that reflects what is governed by the European Taxonomy.

In conclusion, the journey toward a sustainable economy requires the sharing of a new course, charted, even more than in the past, on trust and mutual and contextual knowledge among the different actors involved. On the one hand, financial intermediaries must stimulate businesses to embark on the path by ensuring proper credit access conditions that enhance their sustainability profile, providing the assistance needed to implement new projects through new finance, and offering dedicated advisory services. On the other hand, businesses must be reliable travel companions by ensuring a higher degree of information transparency. On the other, institutions (of different natures) need to implement broader positive, conscious and organic policies that promote the achievement of the common goal[120].

3.2 Sustainability in bank economics and management: academic contributions and industry practice

The marked discontinuity effect from the past induced by the growing focus on sustainability combined with the central role assumed by financial firms, especially banks (the subject of this paper), fosters the emergence of new (larger) dimensions and strategic spaces-opportunities and threats-with the consequent need to make new action-reaction choices. Considering also the criticality of the reputational and fiduciary factor on which financial intermediation based[121] the ability banking firms

[119] Decreto legislative 76 del 2020, art. 64.
[120] SIANI G. (2022), "I fattori ESG nel sistema finanziario: il ruolo della vigilanza", convegno "Rischi ESG nel rapporto banca impresa", 11 marzo, Ned Community, Banca d'Italia.
[121] GANGI F., MUSTILLI M., VARRONE N. (2019), "L'impatto della conoscenza della responsabilità sociale d'impresa (CSR) sulle performance finanziarie aziendali: evidenze dall'industria bancaria europea", Journal of Knowledge Management, vol. 23, n. 1: 110-134.

in responding to these demands can be a valuable opportunity to seize new strategic-operational opportunities, also in light of their role in propelling change[122].

In particular, banking firms, stimulated also by the impulses coming from supervisors, have declined their strategies considering a three-dimensional relationship of risk, return, and social impact[123], also with the understanding that reputation can be an element of competitive advantage[124] that can expand the customer base and make one's business model less price sensitive[125].

The goal becomes, therefore, to seek the best combination of the elements that make up this three-dimensionality over a medium- to long-term horizon[126] and, at the same time, to promote consistency between long-range trajectories and initiatives in the short term.

In this regard, recalling what has already been argued extensively, the growth of sustainable practices of financial intermediaries, and banks in particular, has been influenced by considerable regulatory (as well as societal) momentum, with the adoption of regulatory provisions at both the global and European levels, as well as the implementation an increasing number central banks and supervisors of policies and/or guidelines inherent to the topic at hand, incorporating related risks into macroprudential financial and monetary stability frameworks[127].

In addition, there has been a growing need for harmonization at the community level of objective defining criteria, which would enable the appreciation of the consonance of a given financial product with the issue of sustainability, as well as facilitate the

[122] BURANATRAKUL T., SWIERCZEK F. W. (2017), "Azioni strategiche sul cambiamento climatico nell'industria bancaria internazionale", Global Business Review, vol. 19, n. 1: 32-47.
[123] ZIOLO M., FILIPIAK B. Z., BA˛K I., CHEBA K. (2019), "Come progettare sistemi finanziari più sostenibili: il ruolo dei fattori ambientali, sociali e di governance nel processo decisionale", Sustainability, vol. 11, n. 20: 1-34.
[124] FORCADELL F. J., ARACIL E. (2017), "La reputazione delle banche europee per la responsabilità sociale d'impresa", Corporate Social Responsibility and Environmental Management, vol. 24, n. 1: 1-14.
[125] GANGI F., MUSTILLI M., VARRONE N. (2019), "L'impatto della conoscenza della responsabilità sociale d'impresa (CSR) sulle performance finanziarie aziendali: evidenze dall'industria bancaria europea", Journal of Knowledge Management, vol. 23, n. 1: 110-134.
[126] BALDINI M. A., BRONZETTI G., SICOLI G. (2018), "The influence of corporate governance's decision on corporate social responsibility", International Journal of Business Performance Management, vol. 19, n. 1: 16-35.
[127] DIKAU S., VOLZ U. (2021), "Mandati delle banche centrali, obiettivi di sostenibilità e promozione della finanza verde", Ecological Economics, vol. 184, n. 6: 1-20.

comparison of products in terms of their financial return and underlying economic activities.

In this context, the regulatory process aimed at ensuring standards of reliability, consistency and comparability must materialize in the adoption of common sustainability indicators, such as those proposed by EU Regulation 2019/2088[128], with the ultimate goal of removing any frictions and barriers in the single capital market.

The overall picture, already extremely jagged and layered, is highly articulated as norms and rules influencing banking generate changed and new contextual situations for businesses to adapt to[129].

In sum, regulatory and social impulses have directed the actions of the banking enterprise toward issues of social responsibility in order to acquire, retain and increase consensus around its strategic-operational choices under a constraint of responsiveness to demands and needs, not only economic, from the different stakeholders with whom it weaves relationships to ensure its survival in a highly competitive environment[130].

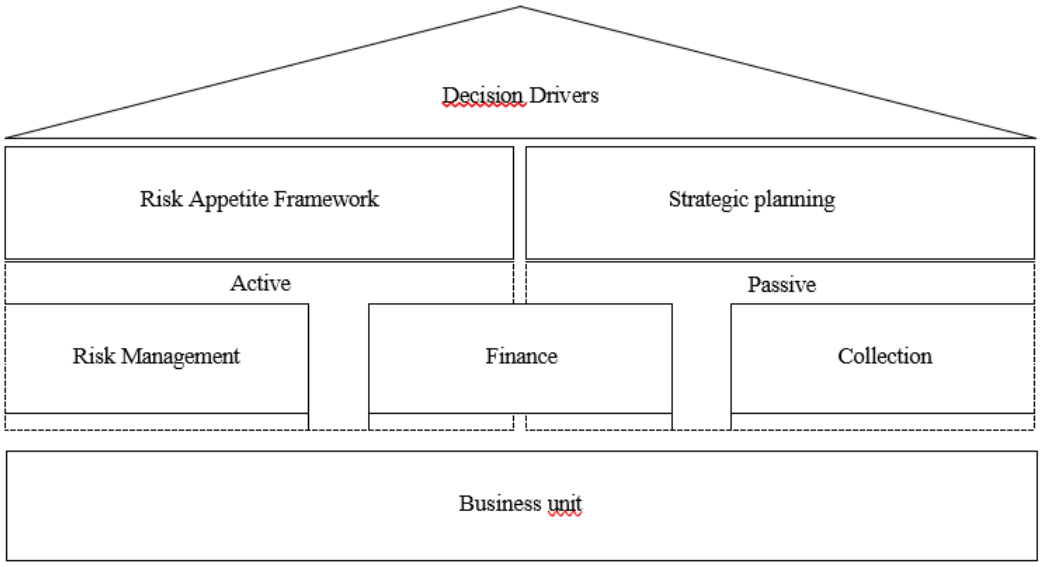
This mandate requires the adoption of a holistic approach that is reflected across different planes of the business model through the adoption of specific quantitative/qualitative elements in the Risk Appetite Framework (RAF) and strategic planning, the adoption of specific collection and deployment policies, and declination in the different business units for products and services in line with customer needs.

[128] PARLAMENTO EUROPEO E DEL CONSIGLIO (2019), Regolamento UE 2019/2088, dicembre.

[129] MOTTURA P. (2011), Banche. Strategie, organizzazione e concentrazioni, Egea, Milano.

[130] OLIVEIRA J., AZEVEDO G., SILVA M. J. (2019), "Determinanti istituzionali ed economici della responsabilità sociale d'impresa: prospettiva istituzionale", Meditari Accountancy Research, vol. 27, n. 2: 196-227.

Figura IV – Business model and sustainability



ESG factors, defined by the EBA[131] as those environmental, social, and governance circumstances that can positively or negatively impact financial performance or solvency, are found to have an effect dependent on both business model and the composition of assets and liabilities on the balance sheet.

In this context, the regulatory objective of introducing a sustainable financial intermediation model aimed at promoting economic growth that is in line with ESG factors presents difficulties that are not easily solved in the operational processes underlying lending (e.g., creditworthiness assessment) and investment activities (e.g., impact on the fair value of securities in the trading book).

In particular, any negative impact of such factors, so-called "ESG risks," may manifest itself through the traditional risk categories (credit, market, liquidity, and operational) from a double-materiality perspective (financial and environmental), as institutions may be affected (outside-in perspective) through their counterparties or invested assets, which in turn may be influenced by (outside-in perspective) or have an impact

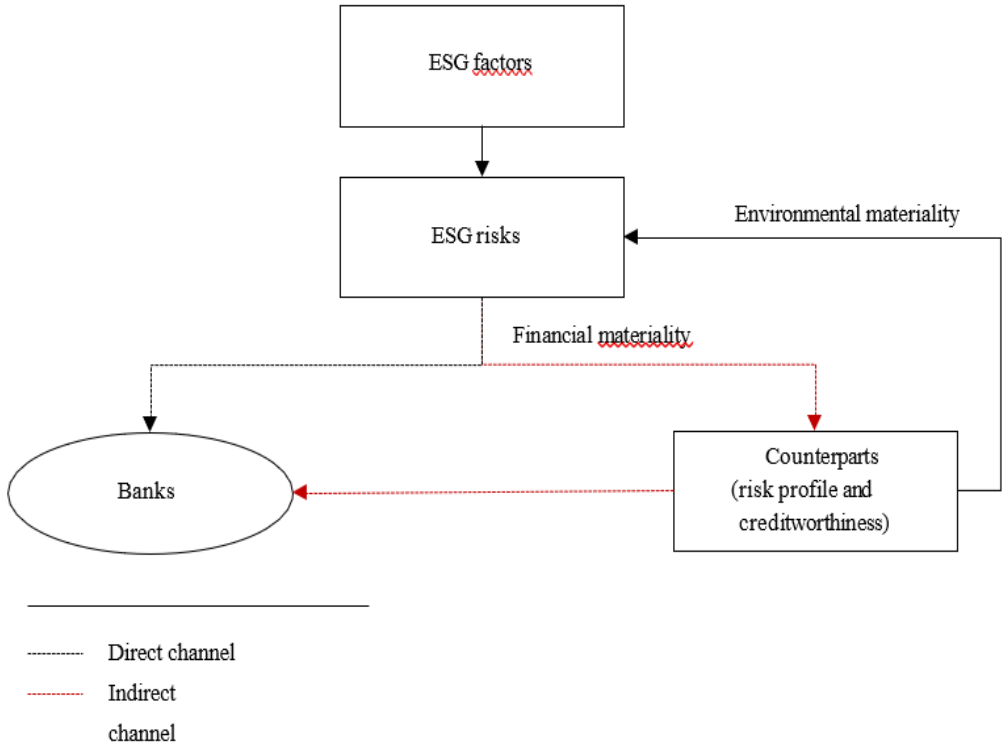
[131] EBA – AUTORITÀ BANCARIA EUROPEA (2020a), "Sul management e la supervisione dei rischi ESG per le istituzioni di credito e le imprese di investimento", Documento di discussione, ottobre.

on (inside-out perspective) ESG factors. Both perspectives should be taken into account when assessing ESG risks[132].

In other words, the bank may be subject to such risks either directly, i.e., directly on its business model, policies, governance, and risk management, or indirectly, i.e., through its counterparties (entrusted and non-entrusted).

The figure below depicts how the dual materiality perspective (financial and environmental) propagates through financial and economic activities throughout the entire value chain directly and indirectly.

Figura V – ESG risk and transmission channels along the value chain[133]



[132] EBA – AUTORITÀ BANCARIA EUROPEA (2020a), "Sul management e la supervisione dei rischi ESG per le istituzioni di credito e le imprese di investimento", Documento di discussione, ottobre.

[133] AIFIRM – ASSOCIAZIONE ITALIANA FINANCIAL INDUSTRY RISK MANAGERS (2021), "L'integrazione dei fattori ESG nella valutazione del rischio di credito", Position paper, n. 29: 1-86.

Proceeding in order, regarding the three ESG risk components, the following is represented:

• environmental risk: subject to increased regulation by supervisors, can be divided into physical risk, transition risk, and legal risk[134]. In particular, the ECB clarifies supervisory expectations business models and strategies related to risk management, with the need to proceed with internalizing climate and environmental risks into the strategic plan, highlighting and documenting factors that may impact the business environment and business model (e.g., loss of profitability and asset impairment);

• Social risk: attributable to the bank's exposures to counterparties that may be adversely affected social factors, such as inequality and critical issues related inclusiveness, labor relations, and investment in human capital[135];

• governance risk: attributable to the bank's exposures to counterparties that may be adversely affected by governance factors, i.e., governance structures/choices (e.g., inclusion of ESG factors in governance). More, given the central role played by governance regarding corporate culture, the inclusion of environmental and social issues (and related risks) as part of decision-making and strategic processes is judged by supervision to be a factor in good governance. The governing body is responsible for promoting a culture of environmental and social risk and including it in its strategy[136].

Within this framework, the supervisory and academic literature has paid particular attention toward climate and environmental issues, partly in light of an increased "*awareness*" of the impacts on traditional risks in terms of the stability of the financial system as a whole[137].

Regarding the nature of these risks, i.e., whether they should be considered as part of a stand-alone category or, as highlighted by supervisors[138], brought back under the

[134] BCE – BANCA CENTRALE EUROPEA (2020), Guida sui rischi climatici e ambientali: aspettative di vigilanza in materia di gestione dei rischi e informativa, novembre.
[135] EBA – AUTORITÀ BANCARIA EUROPEA (2020a), "Sul management e la supervisione dei rischi ESG per le istituzioni di credito e le imprese di investimento", Documento di discussione, ottobre.
[136] EBA – AUTORITÀ BANCARIA EUROPEA (2020a), "Sul management e la supervisione dei rischi ESG per le istituzioni di credito e le imprese di investimento", Documento di discussione, ottobre.
[137] BURANATRAKUL T., SWIERCZEK F. W. (2017), "Climate Change Strategic Actions in the International Banking Industry", Global Business Review, vol. 19, n. 1: 32-47.
[138] COMITATO DI BASILEA (2022), Principi per la gestione e supervisione efficace dei rischi finanziari legati al clima, giugno.

umbrella of traditional risks, the Task Force on Climate-related Financial Disclosures (TCFD) has released its recommendations on governance, strategy, risk management and measurement metrics, suggesting institutions quantify climate risk as part of traditional credit, market, liquidity and operational risks[139]. Sustainability risk thus has a cross-cutting nature that requires taking a holistic view through a comprehensive approach is able to appreciate its extension over traditional risks in a manner proportional to the complexity (and materiality) of the institution, business model, governance and management strategies. In this regard, the ECB has called on banks to consider climate risk in the RAF, while identifying an organizational unit responsible for management, as well as to consider the overall effects on the underlying drivers of traditional risks, with the aim of enabling effective management, monitoring and mitigation of the latter as well as their quantification in the capital adequacy assessment process. The inclusion of ESG risks within the RAF-as a framework for defining (consistent with risk capacity, business model, and strategic plan) risk appetite, risk tolerance, risk limits, risk governance policies, and definition and implementation processes-requires an exercise in timely assessment both at the general level (business model) and at the level of portfolios and individual legal entities, with the aim of including this issue in the bank's risk management and, in general, increasing the focus on sustainability throughout the company. This activity takes the form, primarily, of:

• Establish appropriate policies and procedures as well as criteria for assessing the repayment capacity and creditworthiness of counterparties, which discount the effects of ESG factors and risks;

• collect information and data regarding ESG risks associated with individual counterparties both at the lending stage and throughout the life cycle of the relationship;

• Develop risk monitoring metrics at exposure, counterparty, and portfolio levels that make explicit ESG characteristics by size and complexity;

• manage ESG risks as drivers of traditional financial risks, i.e., within the latter's regulatory frameworks, consistent with risk appetite, and reflected in the ICAAP

[139] TCFD – TASK FORCE ON CLIMATE-RELATED FINANCIAL DISCLOSURES (2018), Rapporto di stato, settembre.

(Internal Capital Adequacy Assessment Process) and ILAAP (Internal Liquidity Adequacy Assessment Process) frameworks[140].

In summary, the inclusion of these aspects in the RAF requires cascading updates ICAAP, ILAAP and traditional credit monitoring systems, as well as remuneration policies, with prudent risk and capital planning as an integral component of risk management[141].

As a result, the reflections within ICAAP and ILAAP require changes and additions in terms of mapped risks, roles and responsibilities in governance, definition of a business model that is in line with the strategic lines related to the new risks considered, and assessment regarding current and prospective capital adequacy. In this regard, the inclusion in the operational processes is characterized by a non-trivial onerousness, given the need to flank the identification of these risks with methodologies for assessing the degree of alignment of its loan portfolio with the new sustainability objectives, concomitant transparency regarding the risks pertaining to specific sectors, in a context characterized by information deficiency and regulatory magmaticity[142].

The issue of lack of information appears to be the main limitation regarding the proper valuation of sustainability risks within risk governance processes. On this point, the EBA[143] emphasizes, with specific reference to environmental and climate risk, how limited and imperfect is the ability of credit institutions to classify customers according to their physical risk and, at the same time, how such valuations are based on qualitative and subjective criteria, the result established practices and norms regarding indicators and data with the consequent impossibility of building solid management models oriented in the long term.

The issue at hand, that is, of a sufficiently deep database to allow for an effective appreciation of the sustainability profile of customers, is extremely relevant, especially at an early stage such as the current one.

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[140] COMITATO DI BASILEA (2022), Principi per la gestione e supervisione efficace dei rischi finanziari legati al clima, giugno.

[141] COMITATO DI BASILEA (2022), Principi per la gestione e supervisione efficace dei rischi finanziari legati al clima, giugno.

[142] AIFIRM – ASSOCIAZIONE ITALIANA FINANCIAL INDUSTRY RISK MANAGERS (2021), "L'integrazione dei fattori ESG nella valutazione del rischio di credito", Position paper, n. 29: 1-86.

[143] EBA – AUTORITÀ BANCARIA EUROPEA (2021b), Mappatura del rischio climatico: principali risultati dall'esercizio pilota a livello UE, maggio.

At the state of the art, the information needs in question have been partially addressed by banking intermediaries in a twofold perspective, on the one hand, for sustainability profiles pertaining to medium to large-sized companies, also relying on subjects external to the banking intermediaries themselves (agencies), on the other hand, for economic contexts characterized by a significant predominance of SMEs and, therefore, often outside the assessment perimeter of the external subjects mentioned above, by initiating a slow and extensive process of customer mapping through the use of internally developed qualitative methodologies. The banks, as a combined combination of this mapping activity and the provision of dedicated consulting services, certainly have the merit of having initiated a process of sensitization of their clients towards the issues in question, highlighting potential risks and possible opportunities pertaining to sustainability.

In addition to this, there is a further noteworthy element, namely the time factor. The temporal variable has two main implications in that, on the one hand, the risk appreciation models used by institutions are based on historical data and, therefore, difficult to integrate with ESG elements, for which there is insufficient historical depth; on the other hand, strategic planning considers short-to-medium-term time intervals, where the effects of ESG risks could be based on a long-term (if not very long-term) horizon. In this regard, it is also noted that the impacts of ESG risks are connoted, more than those of a traditional nature, by high uncertainty about the an and, where appropriate, the quantum.

In short, the context is far from smooth, sustainability being marked by considerable alea and dynamism, with significant questions regarding its relative valorization in the bank's different processes.

The figure below briefly depicts the impact of sustainability risks on traditional risks.

Figure 5 - ESG risks (climate, environmental) and traditional risks[144]

Risks	Physicists		Transition	
	Climatic	Environmental	Climatic	Environmental
	• *Events extreme weather events* • *Chronic weather conditions*	• *Water stress* • *Scarcity of resources* • *Loss of biodiversity* • *Pollution* • *More*	• *Policies a nd regulation* • *Technology* • *Market confidence*	• *Policies a nd regulation* • *Technology* • *Market confidence*
Credit risk	PD and LGD estimates of exposures to sectors or geographic areas vulnerable to physical risks may be affected, for example, by a decrease in the value of collateral in real estate portfolios due to higher flood		Energy efficiency *standards* could result in significant compliance costs and, therefore, lower profitability, possibly increasing PD and decreasing collateral.	
Risk market	Severe physical events could lead to a change in market expectations with possible negative effects in terms of risk, volatility, and value.		Transition risk factors could generate the sudden repricing of financial instruments (securities and derivatives), for example, for products related to sectors affected by stranded assets.	
Operational risks	The bank's operations may be disrupted due to property damage to buildings, branches and data centers as a result of extreme weather events.		Evolving consumer awareness of environmental and climate issues may induce reputational and legal liability risks for the bank as an effect of policies to engage in activities deemed environmentally controversial.	
Other risks (liquidity, *business model*)	The impact on liquidity risk may materialize if customers make a withdrawal of funds from their accounts to meet the repair of damages.		Transition risk factors may affect the economic viability of certain lines of business and cause strategic risk to certain business models in the absence of appropriate diversification policies. Sudden re-pricing of securities, caused, for example, by stranded assets, could reduce the value of the bank's high-quality liquid assets, with a consequent negative effect on liquidity reserves.	

Proceeding in order with regard to credit risk, banking intermediaries should value sustainability risks as part of the processes of appreciating the creditworthiness of customers in the disbursement and monitoring stages, in view of the fact that sustainability risks can have an effect on the repayment capacity of borrowers and, therefore, on the probability of default and greater loss given default of borrowers, as well as, consequently, on expected and unexpected losses, impairments and prudential provisions[145]. All of which has an impact on credit pricing. In this regard, PD could be adversely affected by changing regulatory provisions regarding the characteristics of

[144] Source: adapted from ECB (2020).
[145] PORRETTA P. (2021), Integrated Risk Management. Regole, rischi, capitale, liquidità e nuove opportunità strategiche, Egea, Milano.

certain products (or the underlying production processes), thus making them no longer compliant with sustainability principles. As a result, the entrusted enterprise could experience a contraction in volumes and, ultimately, at the same price, of turnover, resulting in potential difficulties at the time of repayment. At the same time, LGD could also be negatively affected, over a medium- to long-term time horizon, as a result of the depletion of assets pledged as collateral.

The EBA Guidelines make explicit the role of environmental factors in "*loan origination and monitoring*" processes, suggesting that ESG factors and related risks be included in credit disbursement and monitoring policies (and corresponding risk management), i.e., in related lending strategies and policies.

In this regard, Palmieri et al.[146] point out that the presence of high ESG performance of entrusted entities has a mitigating effect on the credit risk associated with them, with a marked lowering of PDs (for two- and three-year time horizons) of firms belonging to more environmentally sensitive sectors.

With reference to credit risk management policies, ESG factors and related risks are reflected on:

• RAF: through the inclusion of qualitative-quantitative elements inherent in sustainability for setting limits in risk taking in order to seize opportunities by dynamically adjusting capital allocation.

• credit strategies: through customer segmentation based ESG factors and the provision of dedicated products/services.

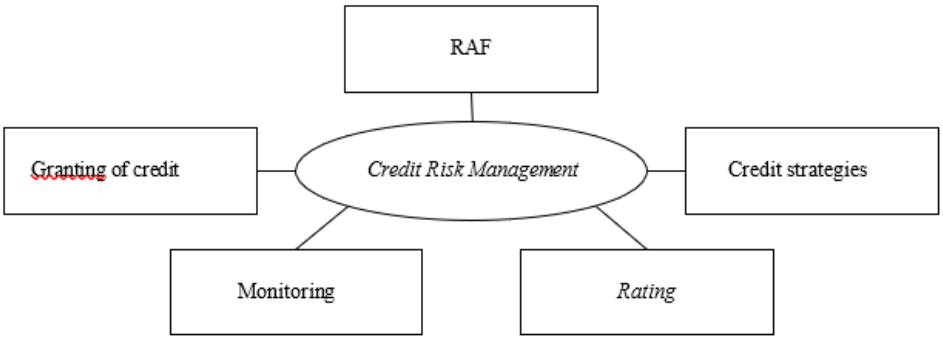
• ratings: by assigning credit ratings that enhance the qualitative-quantitative information inherent in the ESG factors of counterparties.

• monitoring: through the development of reporting statements enhance exposure to ESG risks, including through the adoption of specific KPIs;

• Credit granting: through the inclusion of specific ESG elements (e.g., exclusion of certain sectors, meeting certain requirements) in credit granting policies.

[146] PALMIERI E., GERETTO E. F., POLATO M. (2022), "Performance Esg e impatti sulle probabilità di default a medio-lungo termine: il caso europeo", Bancaria, vol. 6: 20-41.

Figure 6 - Credit Risk Management and ESG Factors



In view of what has just been represented, the enhancement of the sustainability profile (from a materiality perspective) of customers within the creditworthiness assessment involves both the disbursement phase and the monitoring phase, with a general approach, at the portfolio level, and a specific approach, at the level of individual position (counterparty).

As for the general approach, the EBA[147] requires lending institutions to assess the degree to which their loan portfolio is aligned with sustainability issues by identifying specific methodologies. That said, in view of what has been argued above with regard to information needs, time and uncertainty, these methodologies will necessarily have to undergo periodic review and adequacy assessment processes.

Supervisors identify three distinct methodological approaches for assessing sustainability (especially climate) risks:

• Portfolio Alignment Method: a methodological approach that appreciates the degree to which the portfolio is aligned with global sustainability goals.

• Risk Framework Method: methodological approach that considers the influence of sustainability risks on the portfolio risk profile and traditional risk indicators.

• Exposure Method: methodological approach that values the performance of individual exposures and counterparties about sustainability factors[148].

[147] EBA – AUTORITÀ BANCARIA EUROPEA (2021a), Rapporto sulla gestione e supervisione dei rischi ESG per le istituzioni di credito e le imprese di investimento, giugno.

[148] EBA – AUTORITÀ BANCARIA EUROPEA (2021a), Rapporto sulla gestione e supervisione dei rischi ESG per le istituzioni di credito e le imprese di investimento, giugno.

Regarding the lending phase, traditional lending policies, guided by defined risk objectives and widely established about customer segmentation, should be integrated in order to appreciate sustainability risk (according to a materiality perspective).

That said, institutions can perform segmentation of their portfolios based on the previously listed methods (including in combination with each other), i.e. make strategic investment (or divestment) choices in assets that are not aligned with the principles enshrined in the European Taxonomy (Portfolio Alignment Method), identify the sectors most exposed to sustainability risk and, consequently, direct its portfolio composition choices toward sectors with low sustainability risk (Risk Framework Method), and/or assess the sustainability risk of the individual client according to the sector to which it belongs (Exposure Method).

In addition, institutions, in addition to conducting assessments at the portfolio level, should consider, including with regard to the relevant sector, the riskiness about the issues at hand at the level of the individual position (counterparty), i.e., consider the possible impacts of sustainability risks on the client's economic-financial situation, as well as on the value of assets placed as collateral[149].

With regard to the management and monitoring phase, banks, as defined by supervisors, "*should monitor and manage credit risks within their portfolios, in particular through sector/geographic/individual counterparty concentration analysis, including credit risk concentrations arising from climate and environmental risks, as well as by resorting to exposure limits or deleveraging strategies*"[150], as well as "*develop their own monitoring capabilities along with metrics and limits developed for data governance and risk appetite determination purposes*"[151].

It follows that traditional credit monitoring procedures, based on detection systems aimed at capturing any critical issues in a timely manner, could be integrated with sustainability factors, through the use of qualitative-quantitative metrics developed by the bank itself or by external providers, in order to capture any/all signs of deteriorating positions.

[149] AIFIRM – ASSOCIAZIONE ITALIANA FINANCIAL INDUSTRY RISK MANAGERS (2021), "L'integrazione dei fattori ESG nella valutazione del rischio di credito", Position paper, n. 29: 1-86.
[150] BCE – BANCA CENTRALE EUROPEA (2020), Guida sui rischi climatici e ambientali: aspettative di vigilanza in materia di gestione dei rischi e informativa, novembre.
[151] BCE – BANCA CENTRALE EUROPEA (2020), Guida sui rischi climatici e ambientali: aspettative di vigilanza in materia di gestione dei rischi e informativa, novembre, p.38.

The disbursement and management and monitoring phases also play a central role with regard to potential sustainability initiatives that the client company intends to pursue. In this regard, the granting of credit towards sustainable subjects and initiatives may be promoted, against the respect of specific contractual provisions at the level of the relationship (sustainability covenants) and counterparty (periodic monitoring of the overall sustainability profile), by more favorable economic conditions.

With regard to market risk, sustainability risk may manifest itself, including as a result of changes in laws and/or regulations, through financial instruments (stocks, bonds) held in the portfolio and pertaining to companies that qualify (or are perceived) as unsustainable or that operate in sectors that qualify (or are perceived) as unsustainable. In this regard, sustainability risk may therefore result in a loss of value of such instruments, increased mark-to-market (MTM) volatility, increased maximum potential losses appreciable through Value at Risk (VaR) and expected shortfall (ES). In this regard, the intermediary should integrate investment policies with sustainability objectives, define the portion of the portfolio to be devoted to sustainable investments, define investment products in line with ESG objectives (including derivative instruments), and integrate data inherent to ESG factors into financial instrument pricing models[152].

As for liquidity risk, sustainability risk could impact on the availability and stability of funding sources, i.e., funding plan, source concentration and source roll-over, and thus the Minimum Requirement for own funds and Eligible Liabilities (MREL). In this sense, sustainability risk would affect the value of asset encumbrances, liquidity reserves, High Quality Liquid Assets (HQLA), Liquidity Coverage Ratio (LCR) and Net Stable Funding Ratio (NSFR), structural liquidity gaps, maturity mismatching (and thus banking book interest rate risk), and ILAAP in general.

As for operational risk, understood as the risk of losses resulting from the interruption of business operations for reasons related to extreme weather events, sustainability risk could impact business continuity itself, and thus insurance costs, operational losses, and capital requirements. Therefore, these effects must also be integrated as part of the

[152] PORRETTA P. (2021), Integrated Risk Management. Regole, rischi, capitale, liquidità e nuove opportunità strategiche, Egea, Milano.

ICAAP[153]. With regard to what has been represented so far, we recall the limitations highlighted above inherent to information needs, time and uncertainty of the phenomenon, such that the risk appreciation models used by institutions are based on historical data and, therefore, difficult to integrate with ESG elements, for which there is insufficient historical depth. In this regard, with reference to credit risk, often the mappings of the sustainability profile of customers, carried out by the individual credit institution or by external providers, are reflected as a judgmental calibration with respect to the credit rating quantified through the use of the models regulated by supervision.

That, it seems clear that the pursuit of the activities depicted above requires the adoption of a holistic approach that first considers a diffusion of a risk culture that values ESG risks at the governance level and, by extension, on the entire operational perimeter of the financial firm (e.g., policy and market disclosure).

In particular, the ECB's expectations in area of strategic planning, namely to:

• Promote a risk culture that also considers sustainability risks.

• Analyze the impact of climate and environmental risk on the environment in which they operate in the short, medium and long term in order to make informed decisions in setting corporate strategy.

• Conduct evaluations that span a medium- to long-term time horizon.

• Define strategies inherent in environmental risk for different credit and trading portfolios.

• Define performance indicators for each declination of environmental risk at the level of even assets and portfolios.

• Integrate climate risks within the frameworks on governance and risk appetite.

To summarize, the ultimate purpose of legislative and regulatory interventions is to limit the level of risk taken by banks, align the interests of banks and their stakeholders, maximize the degree of transparency for contain transaction costs and promote a credible and sound financial system[154].

[153] PORRETTA P. (2021), Integrated Risk Management. Regole, rischi, capitale, liquidità e nuove opportunità strategiche, Egea, Milano.

[154] EKANAYAKE A., PERERA H., PERERA S. (2009), "Verso un framework per analizzare il ruolo della contabilità nella governance aziendale nel settore bancario", Journal of Applied Management Accounting Research, vol. 7, n. 2: 21-40.

In this context, also in light of the surveys conducted by various national and supranational entities, it is highlighted that the issue of sustainability (particularly from the environmental and climate perspectives) still presents numerous strategic-operational challenges that are not easy to solve.

A central role in addressing these challenges in the near future lies with governance, which must guide the company (banking and non-banking) toward the pursuit of sustainable success, understood as the "*goal that guides the actions of the governing body and is embodied in the creation of long-term value for the benefit of shareholders, taking into account the interests of other stakeholders relevant to the company*"[155].

In this regard, one of the most significant challenges, given what is also defined by the Basel Committee (2022), concerns the modification of ICAAP and ILAAP processes to make them as consistent as possible with overall strategic planning, enriched with ESG objectives.

As for the ICAAP process, this should include:

• integration of the business model description with the strategic lines inherent in ESG risks, including through the use of stress tests aimed at assessing the possible impacts of said risks on the business model in the medium to long term[156];

• Integration of "*mapped*" risks with ESG risks.

• integration of ICAAP governance with a systematic declination of roles and responsibilities of the bodies and functions responsible implementing the sustainability framework.

• integration of ESG risks in the assessment of current and prospective capital adequacy, with evidence of the economic perspective, about possible impacts on the bank's economic value and capital level, and regulatory perspective, about potential impacts on regulatory capital ratios.

• Periodic review of the ICAAP process to verify whether the internal methodologies and processes have led to valid results with respect to current situation and future developments in ESG risk events[157].

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[155] Comitato per la Corporate Governance, 2020.

[156] AIELLO M. A., ANGELICO C. (2022), "Cambiamento climatico e rischio di credito: l'effetto delle imposte sul carbonio sui tassi di default dei prestiti alle imprese delle banche italiane", Questioni di economia e finanza, Banca d'Italia, aprile.

[157] PORRETTA P. (2021), Integrated Risk Management. Regole, rischi, capitale, liquidità e nuove opportunità strategiche, Egea, Milano.

In addition, echoing what has already been argued extensively about nonfinancial reporting frameworks, there is another considerable challenge inherent in drafting nonfinancial disclosure CSRD, which, starting in 2023, will require banks, on the one hand, to increase the quality, quantity and comparability of information (including through the use of KPIs expressing the percentage of alignment with the European Taxonomy) and, on the other hand, to enhance the amount of sustainability information resulting from the expansion of the pool of obligated reporting entities.

In the case of Italian banks, Angelico et al.[158] highlight how, compared to past years, awareness and attention to risks pertaining to climate change has grown, but the dissemination of best practices for full integration into business strategies still remains insufficient. Significant efforts are still needed regarding the assessment of climate impacts on the financial system, which suffers from poor information availability and a serious difficulty in appreciating the cross-cutting effects of environmental impacts on the real economy and the financial system.

The landscape is quite mixed, with larger banks appearing to be further ahead than cooperative credit banks, also in view of the fact that some of them are involved in exercises initiated by the single supervisory mechanism[159].

In short, the picture described is articulated. Sustainability is the natural evolution of the business cultural model, in which the various tools (especially, NFRD and the subsequent CSRD proposal) do not simply represent regulatory compliance but an opportunity to strengthen the fiduciary relationship that inherently binds the bank with its stakeholders.

As pointed out by Rutigliano[160], the context does not help, since, on the one hand, the transformation of the banking industry does not facilitate the conditions for restoring favorable starting conditions, and on the other hand, supervisors continue to prioritize capital and compliance with prudential requirements, while the link with the territory is no longer considered a sufficient reason to sustain a "*traditional*" intermediation

[158] ANGELICO C., FAIELLA I., MICHELANGELI V. (2022), "Il rischio climatico per le banche italiane: un aggiornamento sulla base di un'indagine campionaria", Note di stabilità finanziaria e vigilanza, Banca d'Italia, giugno.

[159] ANGELICO C., FAIELLA I., MICHELANGELI V. (2022), "Il rischio climatico per le banche italiane: un aggiornamento sulla base di un'indagine campionaria", Note di stabilità finanziaria e vigilanza, Banca d'Italia, giugno.

[160] RUTIGLIANO M. (2020), Il bilancio delle banche e degli altri intermediari finanziari, Egea, Milano.

model. At the same time, banks, increasingly pressured by the constraint of competition and requirements, need to place more centrality on their relationship with stakeholders and the satisfaction of the demands made by stakeholders, which are now no longer purely economic in nature.

One fact emerges from this, compliance with prudential requirements is necessary but not sufficient factor in restoring core values on which business activities must be based to achieve sustainability, in a context where stakeholder input (engagement) is crucial to building new strategies[161]. In addition, the guidelines of the supervisory authority on the issue at hand, that is, of valuing sustainability in the contexts depicted above, faces an objective limitation: information needs.

In conclusion on what has been argued so far, financial firms need to continue to cultivate a progressive attunement with stakeholders, seeking a coexistence between the industrial dimension and the sustainable dimension (which pushes for differentiation even in values from competitors). Such coexistence may be complicated but it is fruitful, and needs, therefore, to be constantly nurtured with attention to contexts and innovative insights.

3.3 Review of the academic literature

Given the topicality and breadth of the topic, sustainability presents itself as a complex phenomenon on which there is a vast academic literature, as evidenced by the many and varied published contributions.

In particular, as highlighted by Galletta et al.[162], studies have evolved focusing, first, on the relationship between banks' operations and the social and ethical dimensions and, later, on the environmental dimension. The latter now appears to be preponderant considering the growing awareness about the role (direct and indirect) assumed by financial firms regarding climate change.

[161] RUTIGLIANO M. (2020), Il bilancio delle banche e degli altri intermediari finanziari, Egea, Milano.

[162] GALLETTA S., MAZZÙ S., NACITI V. (2022), "Un'analisi bibliometrica delle performance ESG nel settore bancario: dallo stato attuale alle direzioni future", Research in International Business and Finance, vol. 62: 1-27.

In this regard, the contributions of the literature about the integration of sustainability into the strategic formulation and implementation process of banks-recently encouraged even by supervisory authorities[163] can be conventionally classified into the following research strands, which are not without overlap:

• corporate governance.

• risk management policies.

• collection and employment policies.

• Economic and financial performance.

Proceeding in order regarding the corporate governance strand, the academic literature has placed particular emphasis on investigating the interrelationships between ESG factors and articulation of the corporate governance system as it relates to issues of performance, company valuation[164], and disclosure[165].

In particular, the effective implementation of ESG factors within strategic-operational processes is closely dependent on management's ability to decline policies aimed at creating and developing a corporate culture grafted on sustainability and shared ethical values[166]. Effective disclosure on these issues appears to result in reputational improvement[167], stakeholder trust[168], and ultimately be the source of possible competitive advantage[169].

In light of the central role assumed by corporate governance in the implementation of sustainability practices, the academic literature has paid particular attention about its

[163] EBA – EUROPEAN BANKING AUTHORITY (2021a), Report on management and supervision of ESG risks for credit institutions and investment firms, giugno.

[164] CREMONA B. M., PASSADOR M. L. (2019), "Che dire del futuro delle banche europee? Caratteristiche del consiglio di amministrazione e impatto ESG", Securities Regulation Law Journal, vol. 47, n. 4: 319-364.

[165] BALDINI M. A., BRONZETTI G., SICOLI G. (2018), "L'influenza delle decisioni di governance aziendale sulla responsabilità sociale d'impresa", International Journal of Business Performance Management, vol. 19, n. 1: 16-35.

[166] BIRINDELLI G., IANNUZZI A. P. (2019), "L'impatto delle leader femminili sulle performance ambientali: evidenze sulla diversità di genere nelle banche", Corporate Social Responsibility and Environmental Management, vol. 26, n. 6: 1485-1499.

[167] VANHAMME J., LINDGREEN A., REAST J., VAN POPERING N. (2012), "Fare bene facendo del bene: migliorare l'immagine aziendale attraverso il marketing legato a cause sociali", Journal of Business Ethics, vol. 109, n. 3: 259-274.

[168] CARNEVALE C., MAZZUCA M. (2014), "Bilancio di sostenibilità e valutazione delle banche: evidenze dai mercati azionari europei", Business Ethics: A European Review, vol. 23, n. 1: 69-90.

[169] BALDINI M. A., BRONZETTI G., SICOLI G. (2018), "L'influenza delle decisioni di governance aziendale sulla responsabilità sociale d'impresa", International Journal of Business Performance Management, vol. 19, n. 1: 16-35.

structural characteristics, in terms of the number and presence of independent directors[170], average age[171], gender[172], and presence of any sustainability committees. In particular, the appointment of independent and nonexecutive directors and/or the establishment of sustainability committees would seem to result in a greater degree attention to environmental and social issues, i.e., a greater ability to intercept and respond, including through the search for balancing points between multiple expectations, to the demands promoted by different stakeholders[173].

Several doctrinal contributions highlight how there is a relationship, through an extension of knowledge and skills, between the size and composition corporate bodies and the representativeness of the expectations arising from the context in the relevant decision-making processes. In detail, a greater size extension of corporate boards would seem to reflect positively on the sustainability performance of the firm, because of an extension of knowledge and skills prodromal to the appreciation and valorization of stakeholder needs and demands in corporate decision-making processes. This reading is framed with what Gangi et al.[174] asserted about sustainability as a point of convergence between knowledge and experience.

Similar considerations can be traced regarding the gender composition of corporate bodies. Shilton et al.[175] point out that failure to balance the same in the composition of collegiate bodies has as its potential effect a lower degree of sensitivity and attention

[170] GARCÍA-MECA E., PUCHETA-MARTÍNEZ M. C. (2018), "Come gli investitori istituzionali nei consigli di amministrazione influenzano l'engagement degli stakeholder e la rendicontazione della responsabilità sociale d'impresa", Corporate Social Responsibility and Environmental Management, vol. 25, n. 3: 237-249.

[171] CUCARI N., ESPOSITO DE FALCO S., ORLANDO B. (2018), "Diversità dei consigli di amministrazione e governance ambientale, sociale e aziendale: evidenze dalle società italiane quotate", Corporate Social Responsibility and Environmental Management, vol. 25, n. 3: 250-266.

[172] GALBREATH J. (2018), "La diversità di genere nei consigli di amministrazione è legata alle performance finanziarie? Il meccanismo mediante della responsabilità sociale d'impresa", Business and Society, vol. 57, n. 5: 863-889.

[173] COSMA S., LEOPIZZI R., PIZZI S., TURCO M. (2021), "L'engagement degli stakeholder nelle banche europee: regolamentazione contro governance. Cosa cambia dopo la direttiva NF?", Corporate Social Responsibility and Environmental Management, vol. 28, n. 3: 1091-1103.

[174] GANGI F., MUSTILLI M., VARRONE N. (2019), "L'impatto della conoscenza della responsabilità sociale d'impresa (CSR) sulle performance finanziarie aziendali: evidenze dall'industria bancaria europea", Journal of Knowledge Management, vol. 23, n. 1: 110-134.

[175] SHILTON J., MCGREGOR J., TREMAINE M. (1996), "Femminilizzare la sala del consiglio: uno studio sugli effetti della corporatizzazione sul numero e lo status delle donne nel consiglio di amministrazione delle aziende neozelandesi", Women in Management Review, vol. 11, n. 3: 20-26.

to instances arising from the environment. These findings are also supported by further studies on the subject[176].

As is well known in the field of studies pertaining to corporate governance, considerable attention is paid to explicit management incentives, that is, the combination of fixed and variable elements of remuneration. In particular, the latter, if well designed, by linking to the results achieved by the company, incentivize virtuous behavior aimed at creation of company value[177]. Without going into the copious studies on the subject, the role of the management remuneration has also been investigated in the context of the topic at hand here, partly as a result of impulses from supervision. In detail, several contributions, highlight that there is a positive relationship between sustainability performance and management remuneration.

In addition to what has been highlighted so far, Cosma et al.[178] point out that following the introduction of the 2014/95/EU Directive (NFRD) that made non-financial reporting mandatory for European banks, there has not been a significant improvement in stakeholder engagement, i.e., effective involvement in corporate decision-making processes of the (material) instances promoted by different stakeholders.

In the light of what has been argued so far, one fact seems appropriate to emphasize: the progressive orientation towards a model of sustainable financial intermediation aimed at promoting economic growth that is in line with the instances (social and regulatory) promoted by the various stakeholders requires an enhancement of these instances within the strategic and operational processes of companies, or, in other words, a transition from mere reporting (disclosure) to an effective enhancement of these instances (engagement). That said, it will be of particular interest to investigate the evolution of this transition following the introduction of CSRD, which, as already argued in this paper, requires greater depth and comparability of the information provided, as well as an extension of the audience of stakeholders.

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[176] KASSINIS G., PANAYIOTOU A., DIMOU A., KATSIFARAKI G. (2016), "Genere e sostenibilità ambientale: un'analisi longitudinale", Corporate Social Responsibility and Environmental Management, vol. 23, n. 6: 399-412.

[177] BOSI G., TRENTO S. (2012), Il governo dell'impresa. Economia e diritto della corporate governance, Il Mulino, Bologna.

[178] COSMA S., LEOPIZZI R., PIZZI S., TURCO M. (2021), "L'engagement degli stakeholder nelle banche europee: regolamentazione contro governance. Cosa cambia dopo la direttiva NF?", Corporate Social Responsibility and Environmental Management, vol. 28, n. 3: 1091-1103.

With regard to the inherent strand of risk management policies, the academic literature has paid particular attention to the relationship between sustainability (especially of a climate and environmental nature), and the attendant risks, and risks of a traditional nature, as well as the related effects on capital requirements and, ultimately, on the stability of the financial system[179]. In this regard, a positive effect of including sustainability in risk management policies is undoubtedly a desirable goal, in view of the positive effects on leverage, return on capital and capital requirements and, consequently, in the realization, given the role of intermediaries in change, of a sustainable economy.

On the merits, these studies have focused primarily on credit risk and related rating assignment criteria[180], as well as the repayment capabilities of counterparties' exposures in terms of prospective cash flows to service them.

Weber et al.[181] point to the existence of a positive relationship between environmental risk enhancement of entrusted firms and credit risk rating, resulting in improvements in terms of contract terms. This evidence is also corroborated by Weber[182], who, focusing on environmental and counterparty risk and the consequent effects on credit risk management on a sample of No. 6 Canadian banks over the period 2006-2009, shows that all of them systematically value environmental risks as part of their lending processes.

In the same vein is the study by Attig et al.[183] who, taking up such research and investigating the intercurrent relationship between corporate social responsibility and credit ratings, highlights how rating agencies value the non-financial information and sustainability performance of the companies evaluated. These findings are also corroborated by Devalle et al.[184] who, examining the intercurrent relationship between ESG performance and credit rating on a sample of No. 56 Italian and Spanish listed

[179] THOMÄ J., GIBHARDT K. (2019), "Quantificare l'impatto potenziale di un fattore di supporto verde o di una penalità per i settori ad alta intensità di carbonio sulle banche e sui prestiti europei", Journal of Financial Regulation and Compliance, vol. 27, n. 3: 380-394.

[180] WITOLD J. H., MCGLINCH J. (2019), "ESG, eventi di credito materiali e rischio di credito", Journal of Applied Corporate Finance, vol. 31, n. 2: 105-117.

[181] WEBER O., SCHOLZ R. W., MICHALIK G. (2010), "Incorporare i criteri di sostenibilità nella gestione del rischio di credito", Business Strategy and the Environment, vol. 19, n. 1: 39-50.

[182] WEBER O. (2012), "Gestione del rischio ambientale di credito nelle banche e nelle istituzioni finanziarie", Business Strategy and the Environment, vol. 21, n. 4: 248-263.

[183] ATTIG N., EL GHOUL S., GUEDHAMI O., SUH J. (2013), "Responsabilità Sociale d'Impresa e Rating del Credito", Journal of Business Ethics, vol. 117, n. 4: 679-694.

[184]

companies, show an influence of ESG factors (in particular, social and governance) on credit rating.

That said, Birindelli et al.[185], constructing a multidimensional ethical rating model for a sample of No. 30 European banks, point out that while banking firms show an increasing degree of sensitivity to and appreciation of sustainability as part of their management and organizational strategies, there are considerable deviations between practice and the wishes of supervisors. In this regard, integrating sustainability into the creditworthiness assessment of entrusted entities, as an extension of the information baggage to non-financial elements, allows for a more accurate appreciation of their ability to generate value and respond to any latent social and environmental liabilities potentially impacting operations and repayment capacity[186]. These findings are also corroborated by Birindelli et al.[187], who show that banks with high awareness about environmental sustainability issues record a consequent positive effect on their loan portfolio. In addition, this awareness is positively related to the reference context in which the banks are located, that is, to the attention placed on these issues by institutions in the countries in which the intermediaries are located.

The influences inherent from the geographical/regulatory reference context had already been explored in depth by Hoepner et al.[188], who, investigating the effects of corporate and country sustainability on spreads applied to bank loans on a sample of No. 470 loan contracts from No. 28 countries over the period 2005-2012, point out how the sustainability performance of the reference country (primarily those of an environmental nature) influences the contractual (economic) terms of the loans granted. In the same vein is the study by Barth et al.[189], which shows that the

[185] BIRINDELLI G., FERRETTI P., INTONTI M., IANNUZZI A. P. (2015), "Sui fattori che influenzano la responsabilità sociale d'impresa nelle banche: evidenze da un modello di rating etico", Journal of Management and Governance, vol. 19, n. 2: 303-340.

[186] HANSON D., LYONS T., BENDER J., BERTOCCI B., LAMY B. (2017), "Tavola Rotonda degli Analisti sull'Integrazione dei Fattori ESG nel Processo di Decisione d'Investimento", Journal of Applied Corporate Finance, vol. 29, n. 2: 44-55.

[187] BIRINDELLI G., BONANNO G., DELL'ATTI S., IANNUZZI A. P. (2022), "Impegno per il cambiamento climatico, rischio di credito e performance ambientale del paese: Evidenze empiriche da un campione di banche internazionali", Business Strategy and the Environment, vol. 31, n. 4: 1641-1655.

[188] HOEPNER A., OIKONOMOU I., SCHOLTENS L. J. R., SCHRÖDER M. (2016), "Gli effetti delle caratteristiche di sostenibilità aziendale e del paese sul costo del debito: un'indagine internazionale", Journal of Business Finance and Accounting, vol. 43, n. 12: 158-190.

[189] BARTH F., HÜBEL B., SCHOLZ H. (2022), "ESG e Spread del Credito Aziendale", SSRN Electronic Journal: 2-4.

integration of ESG variables on creditworthiness appears to be more pronounced for European companies than in American ones. These findings recall court that perspective in the literature that asserts that sustainability performance is more pronounced in countries based on a civil legal system than in common law ones, that is, in regulatory contexts in which established protection of stakeholder interests[190].

As for the strand of funding and lending policies, academic literature has paid particular attention to the growing relevance of ESG factors for depositors and investors, as well as the consequent effects on banks' funding structure. Indeed, the latter turns out to be closely linked to the external dimension, i.e., the fiduciary relationship woven between the institution and the reference context. It follows that the implementation of sustainability practices consonant with the expectations and demands converging on the banking firm from the external environment can give rise to the establishment of a kind of intangible asset[191] potentially mutable into a competitive advantage[192].

In this vein, of particular interest is the study conducted by Wu and Shen, which shows how the implementation of ESG factors within the bank's decision-strategic processes can result, due to a lower degree of price elasticity of demand, to an improvement in the interest margin as a combined effect of a propensity of different counterparties, on the one , to accept and pay a higher interest rate on loans and, on the other hand, to demand a lower interest rate on deposits, as a result of a consolidation of the fiduciary relationship woven with the intermediary. As a result of this, in return for the perception of a higher degree of reliability, an improvement in the intermediation margin and the quality of credit follows reflexively.

Particularly florid with contributions, also in view of the attention paid by industrial companies and not in a mere conduct-performance rationale, turns out to be the topic of employment policies, intimately connected with what has already been argued regarding the strand dealing with risk management policies and, more generally, with what has been described regarding the relationship between sustainability risks and traditional risks. In detail, the academic literature highlights how the implementation

[190] PALMIERI E., GERETTO E. F., POLATO M. (2022), "Performance Esg e impatti sulle probabilità di default a medio-lungo termine: il caso europeo", Bancaria, vol. 6: 20-41.
[191] EDMANS A. (2022), "The End of ESG", working paper, n. 847: 1-26.
[192] WU M. W., SHEN C. H. (2013), "La responsabilità sociale d'impresa nell'industria bancaria: Motivi e performance finanziaria", Journal of Banking and Finance, vol. 37, n. 9.

of sustainability practices as part of firms' decision-making processes (and related virtuous non-financial disclosure processes) can positively firmscreditworthiness, resulting in lower financing costs[193] better creditworthiness appreciation, and smaller credit default swap spreads[194].

Conversely, with regard to financing terms, firms with low sustainability performance may experience deterioration in repayment capacity, i.e., higher financing costs, closer maturities, and the demand for more collateral.

With regard to what has been argued so far about lending policies, Thomä and Gibhardt[195] point out that the introduction of green supporting factors (reduced risk weighting for activities considered sustainable) and brown penalties by supervisors could result in, on the one hand, a reduction in required capital requirements and, on the other hand, a reduction in lending activities toward sectors/initiatives with a low degree of sustainability.

What has been argued so far is also reflected in what has already been shown in terms of the repayment capacity of exposures, i.e., the prospective cash flows to service them[196].

Lastly, it appears noteworthy, the contribution of Cai and He[197], who, investigating the relationship between the environmental sustainability performance of entrusted firms and the contractual terms of loans granted to them, through a qualitative-quantitative methodology targeting the sustainability reports of these firms and no. 11538 loan contracts signed during the period 1993-2018, corroborate the findings represented so far and, in particular, underscore the positive role of banks in stimulating virtuous sustainable behaviors both through lending policies and through collateral services that allow them to identify and prevent the emergence of possible liabilities afferent to unsustainable (especially environmental) conduct.

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[193] CAI L., HE C. (2022), "Corporate environmental responsibility and bank loans", Business Ethics, the Environmental & Responsibility, vol. 31, n. 3: 741-761.

[194] WITOLD J. H., MCGLINCH J. (2019), "ESG, Eventi di Credito Materiali e Rischio di Credito", Journal of Applied Corporate Finance, vol. 31, n. 2: 105-117.

[195] THOMÄ J., GIBHARDT K. (2019), "Quantificare l'impatto potenziale di un fattore di supporto verde o di una penalità per il brown sulle banche europee e sul credito", Journal of Financial Regulation and Compliance, vol. 27, n. 3: 380-394.

[196] NGUYEN P., KECSKÉS A., MANSI S. (2020), "La responsabilità sociale d'impresa crea valore per gli azionisti? L'importanza degli investitori a lungo termine", Journal of Banking and Finance, vol. 112: 1-65.

[197] CAI L., HE C. (2022), "Corporate environmental responsibility and bank loans", Business Ethics, the Environmental & Responsibility, vol. 31.

The fourth and final strand dealing with the intervening relationship between sustainability and economic-financial performance, in which this paper is also placed, has, as evidenced by the volume of contributions published in the recent past, received particular attention from academic literature.

Studies on the subject can ideally be differentiated not only in terms of methodology and the resulting findings but also based on time horizon, i.e., before, after and at the turn of the 2007- 2009 financial and economic crisis, and the geographical and regulatory context of reference.

The following figure depicts the main academic contributions, having to do with the relationship that concerns us here, with highlights of the characteristics of the sample (geographical context, numerosity, and period of the survey), sustainability measures employed, dependent variables investigated, and findings.

Figure 8 - Academic contributions on the relationship between sustainability and economic-financial performance

Reference	Sample		Period	Sustainability Measures	Dependent variables	Report
	Country	N.				
Wu and Shen (2013)	Multi (No. 22)	162	2003-09	ESG Rating	ROA, ROE, Net interest income, Net commissions	Positive
Cornett *et al.* (2016)	USA	235	2003-13	ESG Rating	ROE	Positive
Brogi and Lagasio (2019)	USA	848	2000-16	ESG score	ROA	Positive
Nizam *et al.* (2019)	Multi (no. 75)	713	2013-15	MSCI Index	ROE	Positive
Buallay *et al.* (2020)	Multi	59	2008-17	ESG score	ROA, ROE, Tobin's Q	Positive
Soana (2011)	Multi	37	2005	ESG rating	ROA, ROE, Cost to Income, Market BV, P/BV, P/E	Absent
Buallay *et al.* (2019)	Multi (no. 80)	530	2008-17	ESG score	ROA, ROE, Tobin's Q	Negative
Forgione *et al.* (2020)	Multi (No. 22)	131	2013-17	ESG score	Efficiency	Negative
Miralles-Quiros *et al.* (2019a)	Multi (n. 31)	166	2010-15	ESG score	Tobin's Q	Mixed
Miralles-Quiros *et al.* (2019b)	Multi (no. 20)	51	2002-15	ESG score	Stock price	Mixed
Buallay (2019)	Europe	235	2007-16	ESG score	ROA, ROE, Tobin's Q	Mixed
La Torre *et al.* (2021)	Europe (no. 14)	44	2008-19	ESG score	ROA, ROE, Tobin's Q, Cap./Book Value, EVA	Mixed

Regarding the findings of these studies, it is shown that the relationship between sustainability (and its individual components) and economic-financial performance is sometimes positive, sometimes negative and sometimes mixed[198].

Following this breakdown, studies that record positive results can be traced to value-enhancing theory, i.e., sustainability as a source of corporate competitive advantage and long-term shareholder value creation, also in view of improving the fiduciary relationship with stakeholders and the containment of any contingent liabilities.

In this regard, Wu and Shen[199], examining a sample of No. 162 banks located in No. 22 countries over the period 2003-2009, show a significant and positive relationship between sustainability and economic-financial performance, appreciated through ROA, ROE, net interest income and net fees. In the same vein is the study by Cornett et al.[200] who, examining a sample of no. 235 banks U.S. in the periods 2003-2007 (pre-crisis) and 2010-2013 (post-crisis), they detect a significant and positive relationship between sustainability and profitability (appreciated through ROE), with different intensities relative to the period under consideration and bank size. Larger bank intermediaries jointly show improvement in sustainability and ROE in the post-2009 reporting period. The latter pursue, with greater intensity than smaller banks, sustainable (socially responsible) purposes by charging lower deposit fees and, at the same time, offering services calibrated for low-income customers.

These findings are also corroborated in part by Nizam et al.[201], by analyzing a sample of No. 713 banks belonging to No. 75 countries in the reference period 2013-2015, while pointing out the existence of a significant and positive relationship between environmental sustainability and profitability (appreciated through ROE), emphasize that this effect is more pronounced for banking intermediaries with smaller size. In the

[198] MARGOLIS J. D., ELFENBEIN H. A., WALSH J. P. (2009), "Conviene essere buoni? Una meta-analisi e una rielaborazione della ricerca sulla relazione tra responsabilità sociale d'impresa e performance finanziaria".

[199] WU M. W., SHEN C. H. (2013), "La responsabilità sociale d'impresa nell'industria bancaria: Motivi e performance finanziaria", Journal of Banking and Finance.

[200] CORNETT M. M., ERHEMJAMTS O., TEHRANIAN H. (2016), "Avidità o buone azioni: Un esame della relazione tra responsabilità sociale d'impresa e performance finanziaria delle banche commerciali statunitensi durante la crisi finanziaria", Journal of Banking and Finance, vol. 70: 137-159.

[201] NIZAM E., NG A., DEWANDARU G., NAGAYEV R., NKOBA M. A. (2019), "L'impatto della sostenibilità sociale e ambientale sulla performance finanziaria: Un'analisi globale del settore bancario", Journal of Multinational Financial Management, vol. 49: 35-53.

same direction is the study conducted by Brogi and Lagasio[202] who, investigating a sample of U.S. listed banks during the reference period 2000-2016, find the existence of a positive and statistically significant relationship between sustainability and operating profitability (appreciated through ROA).

In the same vein is the contribution of Buallay et al.[203], who, examining this relationship from an operational (ROA), financial (ROE) and market (Tobin's Q) perspective on a sample of no. 59 listed banks in emerging MENA (Middle East and North Africa) countries over the 2008-2017 reference period, find that there is a significant impact of sustainability on shareholder return with differentiations attributable to the specific characteristics of the banking intermediary and its geographic location.

In this regard, about the creation of shareholder value, Nguyen et al.[204] point out that it manifests itself over a medium- to long-term time horizon not so much in terms of the magnitude of current or prospective profitability but rather with lower volatility (systematic and idiosyncratic) of share prices. It follows, echoing what has already been argued in the opening of this paper about the theory of value creation-diffusion, that the adoption of a long-term perspective results in a convergence between the interest of shareholders and that of other stakeholders, given the circumstance that the value of shares is equal to the present value of the future cash flows that the firm is able to generate, which in turn depends on the ability of stakeholders to be satisfied[205].

Proceeding on the breakdown identified above, studies that record negative results can be traced to stakeholder-expense theory, or sustainability understood as a mere corporate operational burden with consequent negative effects on firm value. In this regard, Buallay et al.[206], analyzing this relationship from an operational (ROA),

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[202] BROGI M., LAGASIO V. (2019), "Ambiente, sociale e governance e redditività aziendale: I intermediari finanziari sono differenti?", Corporate Social Responsibility and Environmental Management, vol. 26, n. 3: 576-587.

[203] BUALLAY A., FADEL S. M., AL-AJMI J. Y., SAUDAGARAN S. (2020), "Reportistica sulla sostenibilità e performance delle banche MENA: Esiste un trade-off?", Measuring Business Excellence, vol. 24, n. 2: 197-221.

[204] NGUYEN P., KECSKÉS A., MANSI S. (2020), "La responsabilità sociale d'impresa crea valore per gli azionisti? L'importanza degli investitori a lungo termine", Journal of Banking and Finance, vol. 112

[205] SCIARELLI S. (1997), Economia e Gestione dell'Impresa, Cedam, Padova.

[206] BUALLAY A., HAMDAN A., BARONE E. (2019), "Reportistica sulla sostenibilità e performance dell'impresa: Studio comparativo tra i settori manifatturiero e bancario", International Journal of Productivity and Performance Management, vol. 69, n. 3: 431-445.

financial (ROE), and market (Tobin's Q) perspective on a sample of No. 530 listed banks in No. 80 countries for the period 2008-2017, note how it turns out to be negative in all of the above perspectives.

These findings are also corroborated by the contribution of Forgione et al.[207], who, focusing in particular on the efficiency (appreciated through the following variables: profit before tax, net loans, other earning assets, total deposits, interest expenses on total deposits, depreciation to fixed assests, staff expenses to n. of employees and bank equity) of a sample of n. 131 banks in n. 22 countries in the period 2013-2017, highlight how the relationship between sustainability and efficiency is negative. In addition, the same authors point to the existence of differences about the regulatory environment of reference, in that in common law jurisdictions, operators would seem to place more emphasis on sustainable practices to compensate for the existence of any market externalities/dysfunctions.

As for studies that present mixed findings, Miralles-Quiròs et al.[208], investigating a sample of No. 166 banks belonging to No. 31 countries for the period 2010- 2015, find a positive and statistically significant relationship between sustainability and shareholder value creation but, at the same time, point out the existence of differences pertaining to the characteristics of individual intermediaries and the geographical location of reference. Expanding this contribution regarding share prices, Miralles-Quiròs et al. (2019b), examining a sample of No. 51 listed banks belonging to No. 20 countries for the period 2002-2015, highlight how environmental (E) and governance (G) performance are positively associated with share price, contrary to social (S) performance. In this regard, the authors point out that the stock market positively values the adoption of virtuous environmental policies and good governance practices that limit any agency issues. In addition, as other authors have already pointed out, ESG performance is significantly higher for banks in common law systems.

[207] FORGIONE A. F., LAGUIR I., STAGLIANÒ R. (2020), "Effetto dei punteggi di responsabilità sociale d'impresa sull'efficienza bancaria: Il ruolo moderatore del contesto istituzionale", Corporate Social Responsibility and Environmental Management, vol. 27, n. 5: 2094-2106.

[208] MIRALLES-QUIRÒS M. M., MIRALLES-QUIRÒS J. L., REDONDO-HERNÀNDEZ J. (2019a), "Performance ESG e Creazione di Valore per gli Azionisti nell'Industria Bancaria: Differenze Internazionali", Sustainability, vol. 11, n. 5.

In the same vein is the contribution of Buallay[209] who, investigating a sample of no. 235 European listed banks during the reference period 2007-2016, finds the existence of a mixed relationship depending on the economic-financial perspective adopted (operational, financial, market) and the individual underlying pillars of sustainability (E, S and G). In this regard, environmental sustainability (E) records a positive relationship in the financial (ROE) and market perspective (Tobin's Q), social sustainability (S) records a negative relationship in all perspectives of investigating economic-financial performance (ROA, ROE and Tobin's Q) while governance sustainability (G) records a positive relationship in the market perspective (Tobin's Q) and negative in the remaining ones (ROA and ROE). These findings extend the perspective proposed earlier by Soana[210] who, by investigating the relationship in question according to an economic-financial dimension of accounting (appreciated through ROA, ROE and cost-to-income ratio) and market (appreciated by means of the P/BV and P/E) on a sample of No. 37 banks (including No. 16 Italian banks and No. 21 international banks) as of December 31, 2005, found that there was no statistically significant link.

Expanding on the indicators underlying the appreciation of economic-financial performance, La Torre et al.[211], examining a sample of No. 44 listed banks for No. 14 European countries over the period 2008-2019, illustrate how the relationship between overall considered sustainability and economic-financial performance is positive exclusively in a value-based management perspective (appreciated through the EVA indicator), negative in the market perspective (appreciated through capitalisation to book value and Tobin's Q) and null in the operational (ROA) and financial (ROE) perspectives.

That being said, this lack of unidirectionality of results can be traced to the actual motivations underlying the adoption of sustainability-compliant conduct, i.e., on the one hand, implementation in strategic-decisional processes for the creation of value in

[209] BUALLAY A., HAMDAN A., BARONE E. (2019), "Reportistica sulla sostenibilità e performance dell'impresa: Studio comparativo tra i settori manifatturiero e bancario", International Journal of Productivity and Performance Management, vol. 69, n. 3: 431-445.
[210] SOANA M. G. (2011), "The relationship between corporate social performance and corporate financial performance in the banking sector", Journal of Business Ethics, vol. 104, n. 1: 133-148.
[211] LA TORRE M., LEO S., PANETTA I. C. (2021), "Banks and environmental, social and governance drivers: Follow the market or the authorities?", Corporate Social Responsibility and Environmental Management, vol. 28, n. 6.

the context in which the company is located, on the other hand, implementation in strategic-decisional processes for an exclusive self-referential purpose, and on the other hand, adoption of sustainable practices for mere reputational purposes.

In conclusion, the overview of the numerous contributions presented so far underscores the topicality and complexity of the topic at hand and, at the same time, how they do not come to universally agreed and consolidated conclusions. In this regard, such divergences are discernible in the fourth and final strand of the academic literature just represented dealing with the intervening relationship between sustainability and the economic-financial performance of banking intermediaries. This paper, placing itself in this strand, intends to enrich the relevant academic literature considering sustainability (ESG), and its underlying macro-elements (E, S and G), and economic-financial performance from an accounting (accounting-based) and market (market-based) perspective. As will be analytically described below, the dichotomous approach adopted is to be framed in the light of the most recent doctrinal contributions on the subject, which bring sustainability back into the realm of the company's intangible assets and, therefore, potentially not appreciable using accounting-based economic-financial metrics[212].

[212] EDMANS A. (2022), "La Fine dell'ESG", working paper, n. 847: 1-26.

CHAPTER IV - EMPIRICAL ANALYSIS

4.1 Formulation of research hypotheses

As already amply discussed, in the recent past the issue of sustainability has aroused growing interest among *stakeholders*, leading companies to consider these aspects when developing their strategies, in order to strengthen their credibility and reputation[213]. Several contributions in the academic literature have shown that companies that pay attention to sustainability and implement effective *disclosure of* information to the market are positively evaluated by shareholders[214].

The study of the relationship between sustainability and economic-financial *performance is* repeated in numerous contributions in academic literature, from which it emerges that this relationship is sometimes positive, sometimes negative and sometimes mixed. It should also be considered, as highlighted by Friede *et al.*[215], that each individual factor of the overall ESG score represents a synthesis of a varied series of elements that may be related to the economic and financial *performance of* the company, in that a group of companies, even if they belong to the same sector, may be subject to heterogeneous demands (environmental, social and *governance issues*) and/or with a different degree of intensity[216].

In theory, although there is no unanimous consensus on the effects of the overall ESG score and the related individual factors (environmental, social and *governance issues*) on the company's economic and financial *performance*, there is agreement that the adoption of general principles that guarantee in-depth information on *accountability*,

[213] DHALIWAL D. S., RADHAKRISHNAN S., TSANG A., YANG Y. G. (2012), "Divulgazione non finanziaria e accuratezza delle previsioni degli analisti: prove internazionali sulla divulgazione della responsabilità sociale d'impresa", The Accounting Review, vol. 87, n. 3: 723-759.
[214] BIRINDELLI G., FERRETTI P., INTONTI M., IANNUZZI A. P. (2015), "I fattori determinanti della responsabilità sociale d'impresa nelle banche: evidenze da un modello di rating etico", Journal of Management and Governance, vol. 19, n. 2: 303-340.
[215] FRIEDE G., BUSCH T., BASSEN A. (2015), "ESG e performance finanziaria: evidenze aggregate da oltre 2000 studi empirici", Journal of Sustainable Finance & Investment, vol. 5, n. 4: 210-233.
[216] AZMI W., HASSAN M. K., HOUSTON R., KARIM M. S. (2021), "Attività ESG e performance bancaria: evidenze internazionali dalle economie emergenti", Journal of International Financial Markets, Institutions & Money, vol. 70: 1-18.

compliance, transparency and *corporate governance* practices, with a reduction in agency costs, is positively reflected in shareholders' expectations[217].

However, the valorization of socially responsible practices and related organizational structures has not yet been accompanied by equally strengthened and consolidated disclosure, and a qualitative leap is considered necessary in the contextualization of sustainability metrics in the strategic-operational declination and in the environmental context in which the company is located. In other words, it is necessary to recalibrate *disclosure of* information in order to allow *stakeholders* to transform information into knowledge[218] and, at the same time, promote their involvement and that of their organizations in the strategic and operational processes of the company (*engagement*).

In addition, academic literature, in the study of the relationship between sustainability and economic and financial *performance,* is characterized by the varied use of *performance* metrics, sometimes accounting-based, sometimes monetary-based and sometimes mixed, as a combination of internal (accounting or financial) and external (financial market) data. As is well known, metrics of an accounting nature, i.e. based on the principle of economic competence of the financial statements, although they have the advantage of being easily determined and decipherable, as they are based on usual approaches and consolidated practices, are affected by intrinsic limitations and deficiencies that can affect the interpretation of the phenomenon under investigation. Among these limitations, also in light of the characteristics that connote sustainability, there is the possible omission of the dynamics of accumulation of distinctive intangible resources.

These shortcomings and limitations are partly addressed by mixed indicators which, adopting a *shareholder-based* perspective, emphasize the residual nature of company results and their correlation with the expectations of the relevant securities market. By adopting a broader perspective, these indicators make it possible to evaluate any intangible assets not reflected in the financial statements[219] and, at the same time, limit

[217] CRESPI F., MIGLIAVACCA M. (2020), "I determinanti del rating ESG nel settore finanziario: la solita storia o una narrazione diversa?", Sustainability, vol. 12, n. 16: 1-20.
[218] RUTIGLIANO M. (2020), *Il bilancio delle banche e degli altri intermediari finanziari*, Egea, Milano.
[219] GUATRI L., BINI M. (2009), *Nuovo trattato sulla valutazione delle aziende*, Egea, Milano.

the possible presence of distorting effects resulting from the application of accounting criteria and principles[220].

Therefore, considering that the implementation of sustainability practices in line with the expectations and demands projected by the external dimension can constitute a sort of intangible asset[221] and that it may not be adequately captured by accounting indicators[222], it is considered appropriate to investigate the relationship between sustainability and economic-financial *performance by* broadening the scope of analysis to mixed metrics, i.e. assuming a dual perspective: *accounting-based* and *market-based*.

That said, as regards the *market-based* perspective, the following research hypothesis is developed to be verified, further broken down into the individual pillars E, S and G in order to appreciate the granularity of the phenomenon under investigation:

H1. There is a positive and statistically significant relationship between sustainability *performance (*ESG) and *market-based* economic and financial *performance*;

H1a. There is a positive and statistically significant relationship between environmental *performance (E)* and *market-based* economic and financial *performance*;

H1b. There is a positive and statistically significant relationship between social *performance (S)* and *market-based* economic and financial *performance*;

H1c. There is a positive and statistically significant relationship between *governance performance (G)* and *market-based* economic and financial *performance*.

As for the *accounting-based* perspective, the following research hypothesis has been developed and will be verified, further broken down into the individual pillars E, S and G in order to appreciate the granularity of the phenomenon under investigation:

[220] DAMODARAN A. (2006), *Damodaran on Valuation: Security Analysis for Investment And Corporate Finance*, John Wiley & Sons (trad. it., *Valutazione delle aziende*, Maggioli Editore, 2010).
[221] EDMANS A. (2022), "La fine dell'ESG", working paper, n. 847: 1-26.
[222] LEV B. (2017), "Valutare il vantaggio competitivo sostenibile", Journal of Applied Corporate Finance, vol. 29, n. 2: 70-76.

H2. There is a positive and statistically significant relationship between sustainability *performance (*ESG) and *accounting-based* economic and financial *performance*;

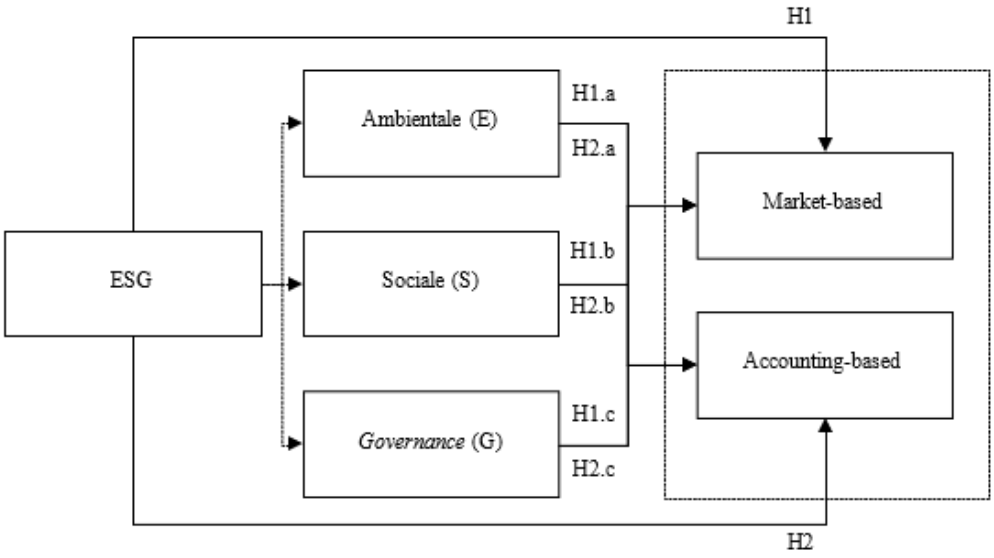
H2a. There is a positive and statistically significant relationship between environmental *performance (*E) and *accounting-based* economic and financial *performance*;

H2b. There is a positive and statistically significant relationship between social *performance indicators* (S) and *accounting-based* economic and financial *performance indicators*;

H2c. There is a positive and statistically significant relationship between *governance performance indicators* (G) and *accounting-based* economic and financial *performance indicators*;

The following figure graphically represents the hypotheses to be verified.

Figure 9 – Summary reconstruction of the research hypotheses



4.2 Methodological aspects

In the following paragraphs, we will illustrate in detail the analysis method adopted to verify the aforementioned hypotheses.

4.2.1 Observation sample and information sources used

Based on the academic literature examined, it is considered appropriate to proceed with a distinction of the dependent variables in *market-based* and *accounting-based*, in order to appreciate both market expectations with respect to the values expressed by the company, and any intangible assets not reflected in the financial statements, such as ESG *performance indicators*[223] and, at the same time, limit potential distorting effects arising from the application of accounting metrics[224].
The selected sample is composed of 77 listed and unlisted banks from 17 European countries, whose data for the reference period under investigation (2012-2021) were taken from the annual financial reports analyzed using the Refinitiv Eikon *database (*formerly Thomson Reuters). The latter was chosen for two reasons: first, because it is widely used in academic literature in similar studies[225] and, secondly, because it captures the sustainability profiles of individual companies in standardized and comparable ESG metrics.
The *dataset is* composed of longitudinal data, i.e. data of a *cross-sectional* nature (*n* different units of analysis) and *time-frame* nature (observed over *T* years), analyzed using the statistical *software* STATA 17.
The following figure summarizes the reference variables.

[223] GUATRI L., BINI M. (2002), Principi e linee guida professionali, vol. 1, Università Bocconi Editore, Milano.
[224] DAMODARAN A. (2006), Damodaran sulla valutazione: analisi dei titoli per gli investimenti e la finanza aziendale, John Wiley & Sons (trad. it., Valutazione delle aziende, Maggioli Editore, 2010).
[225] HAWN O., IOANNOU I. (2016), "Attenzione al divario: l'interazione tra azioni esterne e interne nel caso della responsabilità sociale d'impresa", Strategic Management Journal, vol. 37, n. 13: 2569-2588.

Figure 10 – Reference variables

Variabili di riferimento					
Variabili	**Natura**	**Sigla**	**Descrizione**	**Database**	**Reference**
Dipendenti	Market-based	Tobin's Q	[(Book Value Totale attivo - Book Value Common Equity) + Market Value Common Equity] / Book Value Totale attivo	Refinitiv Eikon	Buallay *et al.*, 2019; Miralles-Quirós *et al.*, 2019a; Azmi *et al.* 2021; La Torre *et al.*, 2021.
	Accounting-based	ROE	Risultato netto / Patrimonio netto	Refinitiv Eikon	Waddock e Graves, 1997; Soana, 2011; Wu e Shen, 2013; Weber, 2017; Buallay *et al.*, 2019; La Torre *et al.*, 2021.
Indipendenti		ESG	ESG Score	Refinitiv Eikon	Brogi e Lagasio, 2019; La Torre *et al.*, 2021.
		E	Environmental Score	Refinitiv Eikon	Soana, 2011; Weber, 2017; Brogi e Lagasio, 2019; Buallay *et al.*, 2019; Miralles-Quirós *et al.*, 2019a; Azmi *et al.* 2021.
		S	Social Score	Refinitiv Eikon	Soana, 2011; Weber, 2017; Brogi e Lagasio, 2019; Buallay *et al.*, 2019; Miralles-Quirós *et al.*, 2019a; Azmi *et al.* 2021.
		G	Governance Score	Refinitiv Eikon	Soana, 2011; Brogi e Lagasio, 2019; Buallay *et al.*, 2019; Miralles-Quirós *et al.*, 2019a; Azmi *et al.* 2021.
Controllo	Bank-specific	Loan to Deposit (LTD)	Totale prestiti / Totale depositi	Refinitiv Eikon	Wu e Shen, 2013; Gangi *et al.*, 2019; Azmi *et al.* 2021; La Torre *et al.*, 2021.
		Asset Quality (AQ)	NPL / Totale prestiti	Refinitiv Eikon	Wu e Shen, 2013; Miralles-Quirós *et al.*, 2019a; Azmi *et al.* 2021.
		Business Model (BM)	Margine di interesse / Margine di intermediazione	Refinitiv Eikon	Wu e Shen, 2013; La Torre *et al.*, 2021.
		Size	Ln (Totale attivo)	Refinitiv Eikon	Chih *et al.*, 2010; Wu e Shen, 2013; Cornett *et al.*, 2016; Brogi e Lagasio, 2019; Buallay *et al.*, 2019; Miralles-Quirós *et al.*, 2019a; Azmi *et al.* 2021; La Torre *et al.*, 2021.
	Country-specific	GDP	Tasso di crescita annuale del PIL del paese in cui è ubicata la sede centrale	World Bank	Wu e Shen, 2013; Buallay *et al.*, 2019; Gangi *et al.*, 2019; Miralles-Quirós *et al.*, 2019a; Azmi *et al.* 2021; La Torre *et al.*, 2021.

4.2.2 Dependent variables

As for the dependent variables, as already amply discussed, we have chosen to use the dual perspective represented above, namely *market-based* and *accounting-based*. The variables in question have been identified on the basis of existing academic literature. In this regard, with regards to the *market-based* perspective, the Tobin's Q indicator summarizes market expectations, without the need to make risk adjustments or normalizations, i.e. the prospective *performance of* value creation of the company[226]. That said, if the indicator in question assumes a value greater (less) than one, the company is creating (destroying) value, in that the market attributes a value greater (less) to the company than the cost of replacing its assets. The use of this indicator, as evidenced by academic literature, is particularly suitable for conducting studies with characteristics similar to those in question, as it summarizes the combined effect of historical evaluations and future expectations[227].

[226] LANG L. H. P., STULZ R. M. (1994), "Il q di Tobin, la diversificazione aziendale e la performance dell'impresa", Journal of Political Economy, vol. 102, n. 6: 1248-1280.
[227] JIAO Y. (2010), "Benessere degli stakeholder e valore dell'impresa", Journal of Banking and Finance, vol. 34, n. 10: 2549-2561.

As for the *accounting-based* perspective, the dependent variable of reference is the ROE, as an expression of overall profitability per unit of invested net equity[228].

4.2.3 Independent and control variables

As for the independent variables, we chose to evaluate the relationship between sustainability, assessed through ESG metrics and the related underlying components (environmental, social and *corporate governance*), and the *market-based* (Tobin's Q) and *accounting-based* (ROE) dependent variables.

The independent variables, with the exception of the year-on-year GDP growth variable obtained from the World Bank database, were extracted from the Refinitiv Eikon *data base*, which evaluates various types of qualitative and quantitative information from individual companies.

In this regard, with regard to the individual ESG components, the *database in* question acquires and calculates over 630 ESG measures at the individual company level, of which a subset of 186 measures of the most comparable and significant by sector feed into the overall company evaluation and scoring process.

This subset is then divided into 10 general categories which, in different ways and through a specific weighting that reflects the materiality of the issue for each individual sector, make up the individual pillars E (environmental), S (social) and G (*governance)*. Finally, the overall ESG score is determined by means of the weighted average of the individual pillars, which assesses the performance, commitment and effectiveness of the sustainability policies of the individual company based on publicly available information. This overall score ranges from 0 to 100, expressing respectively a low and an excellent sustainability *performance.* Similar considerations can be replicated for the individual pillars E, S and G and their underlying elements.

As for the control variables, based on academic literature, the reliability of the analysis model has been improved by using factors that can better adapt to the variability of the dependent variables used. In detail, the control variables are of a dual nature, i.e. bank-specific and country-specific.

[228] TUTINO F. (2015), La banca. Economia, finanza, gestione, Il Mulino, Bologna.

With regard to the former (bank-specific), the following explanatory variables were considered:

· Loan to Deposit (or LTD): this is the ratio between the total amount of loans and deposits and represents a synthetic indicator of the sustainability of the bank's financial structure, as well as a proxy for its liquidity[229];

· Asset Quality (or AQ): which is the ratio between the total amount of Non-Performing Loans (NPLs) and loans and represents a synthetic indicator of the bank's credit quality[230];

· Business Model (or BM): which represents the relationship between the interest margin and the brokerage margin and is a synthetic indicator of the overall contribution of the brokerage activity of money management, or of the type of business model of the bank[231];

· Size: as the natural logarithm of total assets, as the bank's economic and financial performance could depend on its size[232].

With regards to the second (country-specific) type, we have already seen how academic literature highlights a relationship between the economic and financial performance of the bank and the context in which it is located. That said, the annual GDP growth rate of the country where the institution's headquarters are located has been considered.

[229] LA TORRE M., LEO S., PANETTA I. C. (2021), "Banche e fattori ambientali, sociali e di governance: seguire il mercato o le autorità?", Corporate Social Responsibility and Environmental Management, vol. 28, n. 6: 1620-1634.

[230] MIRALLES-QUIRÒS M. M., MIRALLES-QUIRÒS J. L., REDONDO-HERNÀNDEZ J. (2019a), "Performance ESG e creazione di valore per gli azionisti nel settore bancario: differenze internazionali", Sustainability, vol. 11, n. 5: 1-15.

[231] WU M. W., SHEN C. H. (2013), "Responsabilità sociale d'impresa nel settore bancario: motivazioni e performance finanziaria", Journal of Banking and Finance, vol. 37, n. 9: 3529-3547.

[232] BUALLAY A., HAMDAN A., BARONE E. (2019), "Reportistica sulla sostenibilità e performance dell'impresa: studio comparativo tra i settori manifatturiero e bancario", International Journal of Productivity and Performance Management, vol. 69, n. 3: 431-445.

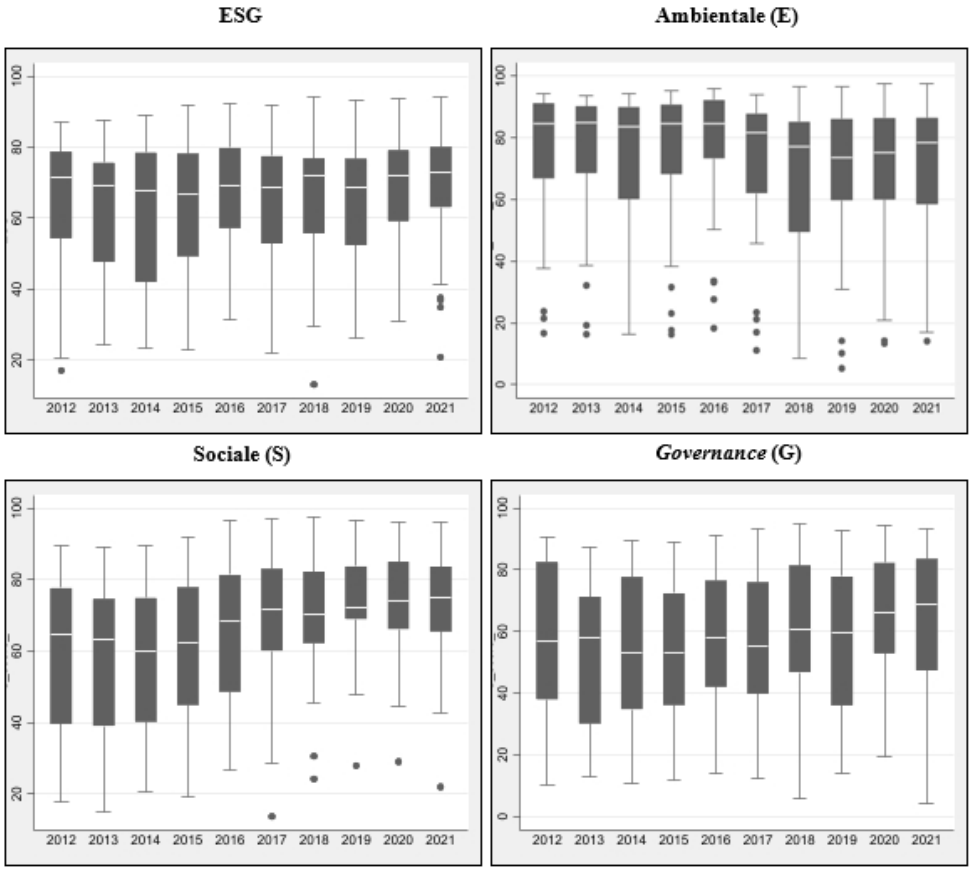
4.3 Descriptive statistics

Before illustrating the results of the study in question, the descriptive statistics of the reference sample are shown below.

In this regard, with regard to the overall sustainability *performance index* (ESG), the sample shows an overall stable average trend in the entire reference period 2012-2021 (CAGR +1%), reaching an average value of 69.40/100 in 2021. This trend is also recorded for the environmental component (E), which stands at an average value of 70.67/100 in 2021. On the other hand, the social (S) and *corporate governance* (G) components recorded a considerable increase in the 2012-2021 reference period, reaching 72.99/100 (CAGR +2.42%) and 64.53/100 (CAGR +1.42%) respectively in 2021. Considering that the maximum value that these indicators can reach is 100, the sustainability *performance of* the sample is good overall.

The following figure shows the distribution of the overall sustainability *performance and the detailed performance* for each underlying element of the sample in the reference period covered by the survey (2012-2021).

Figure 11 – Representation of the distribution of the ESG score and the individual pillars E, S and G (2012-2021)



As for the descriptive statistics, the dependent variables Tobin's Q and ROE have an average value of 1.4 and 6.5 respectively, in line with previous studies[233].

In addition, the independent variables ESG, E, S and G have, for the entire reference period under analysis, an average value of 65.5, 71.8, 66.7 and 58 respectively. Considering that the maximum value that these indicators can reach is 100, the overall sustainability of the sample is good (65.5/100), but with profound differences in the individual underlying elements. In this regard, as was to be expected, given the attention paid by the supervisory authorities and, in general, by the various

[233] LA TORRE M., LEO S., PANETTA I. C. (2021), "Banks and environmental, social and governance drivers: Follow the market or the authorities?", Corporate Social Responsibility and Environmental Management, vol. 28, n. 6: 1620-1634.

stakeholders, environmental issues recorded a higher *performance rating* (71.8/100) than social issues (66.7/100) and *governance issues* (58/100).

The following figure shows the descriptive statistics of the variables represented above.

Figure 12 – Descriptive statistics

Variabile	Obs.	Media	Std. dev.	Minimo	Massimo
Dipendenti					
Tobin's Q	676	1,4	3,7	0,8	42,0
ROE	425	6,5	18,3	-68,9	298,9
Indipendenti					
ESG	346	65,5	18,1	13,1	94,3
E	346	71,8	23,6	5,2	97,5
S	346	66,7	18,6	13,7	97,7
G	346	58,0	23,0	3,9	94,9
Controllo					
LTD	536	1,0	0,4	0,0	4,6
AQ	402	0,1	0,2	0,0	1,8
BM	721	0,3	48,5	-1.270	202,2
Size	734	24,4	2,0	18,9	28,7
GDP	770	1,7	4,7	-9,0	25,2

As for the correlation matrix, the overall sustainability *performance (*ESG) appears to be significantly correlated with its individual components (E, S and G). Furthermore, the correlation coefficients between the overall sustainability *performance (*ESG) and the individual components (E, S and G) show a very limited and insignificant relationship with the dependent variables (Tobin's Q and ROE), with the exception of the *governance (*G) component.

The correlation matrix is shown in the figure below.

Figure 13 – Correlation matrix

Variabile	Tobin's Q	ROE	ESG	E	S	G	LTD	AQ	BM	Size	GDP
Tobin's Q	1	-	-	-	-	-	-	-	-	-	-
ROE	-	1	-	-	-	-	-	-	-	-	-
ESG	-0,01	0,06	1	-	-	-	-	-	-	-	-
E	0,08	0,02	0,84*	1	-	-	-	-	-	-	-
S	0,07	0,07	0,85*	0,62*	1	-	-	-	-	-	-
G	-0,17*	0,07	0,81*	0,45*	0,56*	1	-	-	-	-	-
LTD	0,11*	-0,1*	-0,20*	-0,04	-0,26*	-0,23*	1	-	-	-	-
AQ	0,48*	-0,03	-0,16*	-0,15*	-0,15*	-0,10	0,02	1	-	-	-
BM	0,00	0,06	0,01	0,00	-0,07	-0,03	0,02	0,03	1	-	-
Size	-0,28*	-0,11*	0,52*	0,47*	0,39*	0,42*	-0,10*	-0,16*	-0,03	1	-
GDP	-0,01	-0,03	-0,1	-0,14*	-0,02	-0,07	-0,01	-0,10*	-0,02	-0,07*	1

(Nota: * $p < 0,1$)

4.4 Statistical model used

In order to investigate the relationship between sustainability and its determinants and economic and financial *performance (market-based* and *accounting-based*), a longitudinal quantitative methodology (*panel data analysis*) was applied using the statistical *software program* STATA 17.

As is well known, a longitudinal data analysis can follow three different methodologies:

· OLS *pooled*;

· random effects;

· fixed effects.

The application of an OLS *pooled* analysis methodology instead of an econometric *panel* methodology (random or fixed effects) can only occur if there is no evidence of individual heterogeneity (i. e., characteristics of individuals that are constant over time and not observable), as the presence of relevant unobservable factors would result in biased or inconsistent estimates due to poor methodological specification. In this context, in order to evaluate the presence of such individual heterogeneities and therefore whether to proceed with an *pooled* or *panel based* OLS methodology

(random or fixed effects), it is necessary to perform the Lagrange multiplier *test of* Breusch and Pagan[234]. The latter, by exploiting the variances-covariances between the errors, verifies if the null hypothesis of the variance of the error term that measures heterogeneity is correct, or rather that there is no significant difference between the different units.

If the null hypothesis is not accepted (i.e., variance of the error term that measures heterogeneity is not zero), there is a significant random effect or unobservable individual heterogeneity. The analysis must therefore be conducted by exploiting the presence of longitudinal data through the application of a *panel data* analysis method with random or fixed effects, as the application of a *pooled OLS* analysis method would not be efficient.

The *panel data* methodologies enhance the non-observable heterogeneity by considering an error term that, respectively, turns out to be, over time, for each observed unit, randomly variable (random effects) or constant (fixed effects). In this regard, the fundamental difference between the two methodologies (random or fixed effects) is due to the evaluation or not, by the unobserved individual effect, of elements correlated with the explanatory variables. If this correlation is null, a random effects methodology is adopted, whereas, conversely, a fixed effects methodology is adopted. In order to select the most appropriate methodology to describe the phenomenon being investigated, it is therefore necessary to perform the Hausman *test (*1978) which allows us to verify the hypothesis of no correlation between the individual effects of the observed units and the explanatory variables (H_0: $E[\varepsilon\varepsilon_{it}|\ X] = E[\eta_i|\ X] = 0$), as well as estimating the reliability of a random effects estimator.

Specifically, the aforementioned *test of* comparison allows us to compare the two methodologies (random effects and fixed effects), verifying the null hypothesis of equality between the coefficients estimated by the two. If this hypothesis is accepted (i.e., absence of correlation and equality of the coefficients estimated by the two methodologies) then it is preferable to use a random effects methodology (i.e., the unobserved effect for each entity has a stochastic and random nature), otherwise a

[234] BREUSCH T. S., PAGAN A. R. (1980), "Il test di Lagrange Multiplier e le sue applicazioni alla specificazione del modello in econometria", Review of Economic Studies, vol. 47, n. 1: 239-253.

fixed effects methodology (i.e., the unobserved effect for each entity has a non-random stochastic nature).

It should be noted that, statistically, the fixed-effects methodology is always consistent, but has different degrees of efficiency, both under the null hypothesis of no correlation and under the alternative hypothesis. On the other hand, the random effects methodology is consistent and efficient (provides lower *standard errors*) only and exclusively under the null hypothesis, i.e. of non-systematic differences between the estimators of the two different methodologies.

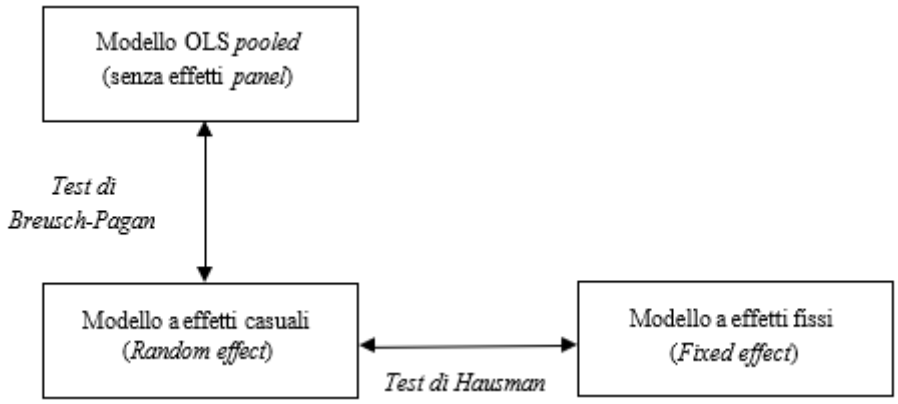
Figure 14 – Matrix of the results of the Hausman test.

Ipotesi	**Effetti casuali**	**Effetti fissi**
H_0: $E[\varepsilon\varepsilon_{it}\mid X] = E[\eta_i \mid X] = 0$	Consistente, efficiente	Consistente, non efficiente
H_1: $E[\varepsilon\varepsilon_{it}\mid X] = 0, E[\eta_i \mid X] \neq 0$	Inconsistente	Consistente, efficiente

It follows that the fixed effects methodology is always the most reasonable choice in the analysis of longitudinal data because, even if in certain circumstances (null hypothesis accepted) it has a lower degree of efficiency, it still arrives at correct estimates.

The following figure illustrates the methodological path of the Breusch and Pagan and Hausman test methods shown above.

Figure 15 – Summary of the tests used



Referring to the case in question of the present study, in light of the *tests used* (Breusch-Pagan and Hausman) we chose to use the following fixed effects analysis model.

$$Y_{it} = \alpha + \beta X_{it} + \gamma\gamma z_{it} + \eta_i + \varepsilon\varepsilon_{it} \; ; i = 1,2 \dots N; t = 1,2 \dots T$$

Where:
Y_{it}: dependent variable of interest of bank i at time t;
X_{it}: independent variable of interest at time t;
z_{it}: control variable at time t;
η_i: non-observable heterogeneity at time t, stochastic and non-random;
$\varepsilon\varepsilon_{it}$: stochastic error, assumed independent and identically distributed.
Finally, in order to check for the presence of omitted variables that vary over time but not between entities, it was decided to also include the temporal effects for each year of the observation period.

4.5 Research results

The empirical analysis of this study is based on two perspectives (*market-based* and *accounting-based*), each evaluated respectively through the use of the dependent variables Tobin's Q (*market-based*) and ROE (*accounting-based*). Therefore, in order to verify the research hypotheses defined above and their relative variations, 8 different models were developed, or rather 4 models for each dimension considered.
With reference to the *market-based* perspective, evaluated using the Tobin's Q indicator, it is evident that the overall sustainability *performance (*ESG) has a positive and statistically significant impact (*p-value* less than 0.05). In detail, the environmental *performance (*E) has a positive and statistically significant impact (*p-value* less than 0.01), while the social *performance (*S) and *governance* (G) *performances* are not statistically significant.

As for the *accounting-based* perspective, evaluated through the ROE indicator, it is evident that the overall sustainability *performance (*ESG) and its declinations (E, S and G) are not statistically significant.

It follows that, with reference to the research hypotheses formulated regarding the *market-based* perspective, the hypotheses concerning overall (H1) and environmental (H1a) sustainability are supported, while those concerning the social (H1b) and *corporate governance* (H1c) dimensions are not.

As for the *accounting-based* perspective, the hypotheses concerning overall sustainability (H2) and its environmental, social and *governance-related* aspects (H2a, H2b and H2c) are not supported.

The following figure shows the results of the analysis conducted, highlighting the main characteristics of each model used.

Figure 16 – Results of the empirical analysis

	Tobin's Q			
ESG	0,02026**	-	-	-
E	-	0,0213***	-	-
S	-	-	0,0104	-
G	-	-	-	0,000028
LTD	-0,46079	-0,762	-0,306	-0,319
AQ	2,2693	2,198***	2,374***	2,333***
BM	0,00013***	0,00007	0,000033	0,00014
Size	-1,4313***	-1,491***	-1,365***	-1,385***
GDP	0,19476	0,0248	0,0126	0,0135
Cons	37,27***	38,81***	36,04***	37,15***
Effetti temporali	Si	Si	Si	Si
Osservazioni	208	208	208	208
Gruppi	35	35	35	35
Modello	FE	FE	FE	FE
Prob > F	0,0000	0,0000	0,0000	0,0000
R-sq				
Within	0,5862	0,6055	0,5775	0,5817
Between	0,1735	0,1644	0,1611	0,1360
Overall	0,1630	0,1629	0,1539	0,1338

	ROE			
ESG	-0,00006	-	-	-
E	-	-0,0011	-	-
S	-	-	0,0035	-
G	-	-	-	0,00085
LTD	-0,419	-0,394	-0,423	-0,419
AQ	-0,133	-0,151	-0,0682	-0,134
BM	0,00012***	0,00012***	0,00007	0,00012**
Size	-0,136	-0,111	-0,159	-0,125
GDP	-0,0033	-0,00395	-0,00385	-0,00372
Cons	4,29	3,69	4,71	4,06
Effetti temporali	Si	Si	Si	Si
Osservazioni	207	207	207	207
Gruppi	32	32	32	32
Modello	FE	FE	FE	FE
Prob > F	0,0000	0,0000	0,0000	0,0000
R-sq				
Within	0,1207	0,1223	0,1316	0,1223
Between	0,0998	0,0899	0,1198	0,0907
Overall	0,0152	0,0167	0,0202	0,0149

(Nota: $^{*}p < 0,1$; $^{**}p < 0,05$; $^{***}p < 0,01$)

The results, partially in line with previous research[235] show that there is a positive and significant relationship between sustainability (ESG) and economic and financial *performance,* only when it is assessed using market-based metrics, thus corroborating the strand of academic literature that links sustainability to a kind of intangible asset that is potentially not valued by accounting metrics. Considering that sustainability is a medium-long term phenomenon, this evidence could be ascribable to a mere temporal effect, in that, on the one hand, accounting metrics, as is well known, present an exemplification of a much more complex reality, based on historical and prudential evaluations that do not contemplate future expectations (risk, financial value of time), on the other hand, stock market metrics almost instantly appreciate a greater degree of information on *accountability*, *compliance and* transparency practices, with a reduction in agency costs, and the potential future effects of the economic initiatives undertaken.

[235] SOANA M. G. (2011), "La relazione tra performance sociale aziendale e performance finanziaria aziendale nel settore bancario", Journal of Business Ethics, vol. 104, n. 1: 133-148.

In addition, considering the individual factors underlying sustainability, the results show that there is a positive and significant relationship between environmental sustainability (E) and *performance in* economic and financial terms *in the market*, and at the same time, a lack of relationship with social (S) and *governance* (G) factors. These results, contrary to what was expected and to the contribution of Marsat and Williams[236], could be attributed, as already noted, to the preponderance of climate and environmental issues (E) – in light of a greater "awareness" and intuitiveness regarding the impacts of the related risks on the traditional ones in terms of stability of the financial system – in the legislative and regulatory provisions compared to those of a social (S) and *governance (*G) nature.

[236] MARSAT S., WILLIAMS B. (2014), "Il Mercato Valuta il Pilastro Sociale?", SSRN Electronic Journal: 1-21.

CHAPTER V - SUSTAINABILITY AND BUSINESS DECISIONS: THEORETICAL PROFILES STILL OPEN

5.1 Sustainability in the context of drivers of business decision making

Business decisions and the process underlying them represent a central and recurring theme in business studies, constituting a sort of "mandatory stage" for those who investigate the functioning of the business, its governance and management, and its very meaning. In fact, a company is nothing more than a sum or a system of decisions[237].

Considering the importance and pervasiveness that sustainability has assumed in the evolutionary dynamics of the company, the topic is enriched with new elements worthy of appreciation and investigation, as they impact on the system of decisions, knowledge, skills and information of the company itself[238].

The question appears to be particularly timely.

According to the behaviorist approach, the company decision maker operates with limited rationality and adopts an evaluative approach to the various alternatives of a satisfactorist type rather than maximizing or optimizing, i.e. he identifies and evaluates the alternatives individually and, when he identifies one that is satisfactory in terms of results, he pursues it. It follows that the decision-making process, with its various phases, is affected by this approach[239].

The strategic cycle represents the synthesis of decision-making *driving forces* such as *purpose*, vision, mission, the general and specific aims and objectives of the company, the achievement of which is instrumental in creating the conditions necessary for survival[240]. In particular, the *purpose*, vision and mission have the function of directing the company's decisions and actions according to what it intends to be and become, while the goal of survival and the general and specific objectives delimit, during the

[237] GOZZI A. (1995), Processi decisionali, in Caselli L. (a cura di), Le parole dell'impresa, Guida alla lettura del cambiamento, vol. 2, FrancoAngeli, Milano.
[238] VICARI S. (1991), L'impresa vivente, Etas, Milano.
[239] BAZERMAN M. H. (2002), Giudizio nelle Decisioni Manageriali, John Wiley & Sons, New York.
[240] BARILE S., GATTI C., RENZI A., VAGNANI G. (2022), L'impresa. Fondamenti, profili economico-finanziari e sostenibilità, McGraw-Hill, Milano.

evolutionary dynamic, the set of available alternatives from which the *management team* can select those most appropriate for solving current and future problems.

In this selection process, the *management*, given the interpretation and evaluation of the available information, operates according to conditions of rationality, consequentiality and appropriateness in order to choose, among the options identified with respect to the decision-making *drivers* represented above, the alternatives that meet the decision-making criteria of effectiveness, efficiency and profitability, which can be summarized in the principle of convenience[241]. It follows that the conduct of business activities can be summarized as an interrelation between decision-making and learning systems, which feed off each other.

In short, while the decision-making *driving forces* represent the pre-established objectives, the decision-making criteria define the way in which they should be pursued[242].

With regard to the decision-making *drivers listed* above, the vision and the mission represent, respectively, the general intention of the company, from which long-term decisions and actions derive, and the relative position that the company intends to assume with respect to a specific combination of products/markets. It follows that these *driving forces* are linked by a relationship of consequentiality and, based on future prospects and what the company intends to be (vision), the company itself assigns itself a role (mission)[243].

Vision and mission thus represent the foundations on which business decisions are based.

As for the purpose, or the goal that the company intends to pursue in the long run using the available production factors, the academic debate is full of heterogeneous contributions, sometimes leading back to profitability, sometimes to financial autonomy (independence) and, more recently, to sustainability.

In this context, it seems possible to assume that the purpose of the enterprise can only be traced back to business continuity, or rather its survival in the long term while

[241] PANATI G., GOLINELLI G. M. (1997), Tecnica economica industriale e commerciale. Imprese, strategie e management, La Nuova Italia Scientifica, Roma.
[242] BARILE S., GATTI C., RENZI A., VAGNANI G. (2022), L'impresa. Fondamenti, profili economico-finanziari e sostenibilità, McGraw-Hill, Milano.
[243] BARILE S., GATTI C., RENZI A., VAGNANI G. (2022), L'impresa. Fondamenti, profili economico-finanziari e sostenibilità, McGraw-Hill, Milano.

maintaining lasting conditions of economic and financial equilibrium[244]. In this sense, "*survival* is *the only general purpose compatible with the continuity of the company; in other words, it provides an objective parameter to which the multiplicity of (intermediate) objectives pursued from time to time by the managerial class can be related"*[245]. In this regard, the aims of a company other than survival can, at most, be traced back to general objectives of an economic-financial-social nature, or to measurable and feasible intermediate goals[246], which direct the company in the short, medium and long term and, therefore, are "*instrumental to the achievement of survival*"[247].

These general and intermediate objectives, directly attributable to the dynamics between the external and internal context of the company, are identified in consideration of the role of the company as a place of convergence of multiple interests, or rather as a necessary condition for the ultimate achievement of survival.

The centrality of coherence between the relational and economic-social dimensions emerges, in that the ability of a company to assume the social function to which it is called, that is, the convergence of multiple interests, is intrinsically connected with the ultimate goal of survival over time, that is, with the dimensions, and the consequent general objectives, of an economic (achieving economic-financial equilibrium), competitive (achieving and maintaining a competitive advantage) and social (achieving and maintaining the consent of *stakeholders*) nature[248].

In this context, considering the importance that sustainability has assumed for the pursuit of survival, it is legitimate to ask whether it should be considered as a constraint (or a conditioning factor) that the company must necessarily consider in the context of its strategic formulation or, rather, as a real general objective to be pursued to achieve its ultimate goal.

In order to answer the proposed question, we will briefly refer to what has been argued in the previous chapters.

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[244] MOSS S. J. (1981), Una teoria economica della strategia aziendale, Robertson, Oxford.
[245] CASELLI L. (1966), Teoria dell'organizzazione e processi decisionali nell'impresa, Giappichelli, Torino.
[246] PANATI G., GOLINELLI G. M. (1997), Tecnica economica industriale e commerciale. Imprese, strategie e management, La Nuova Italia Scientifica, Roma.
[247] BARILE S., GATTI C., RENZI A., VAGNANI G. (2022), L'impresa. Fondamenti, profili economico-finanziari e sostenibilità, McGraw-Hill, Milano.
[248] CODA V. (1995), L'orientamento strategico dell'impresa, Utet, Torino.

The combined effect of regulatory and social impulses has directed the actions of the company towards issues of social responsibility, in order to acquire, maintain and increase consensus around its strategic and operational choices under a constraint of responding to current and potential demands and needs, not only economic, on the part of the various *stakeholders*, with whom it establishes relationships to guarantee its survival in a highly competitive context[249]. Companies have thus paid increasing attention to sustainability, in order to consolidate their credibility and reputation among the various *stakeholders*, pursuing a logic of value creation in the medium to long term and incorporating a triadic vision of risk, return and social impact in their strategies[250].

In short, there is a growing general recognition that the survival of a business is closely linked to the well-being of the society of which it is part, and from which it draws the fundamental elements for its own functioning[251].

Therefore, while there is no doubt that sustainability is a regulatory and social constraint in terms of responding to (not only economic) demands and needs, which the company must necessarily take into account when formulating its strategies, at the same time – given the importance it has assumed for the success and survival of the company, influencing the greater or lesser availability of resources (understood in a broad sense, such as financial, economic, *know-how*, accreditation, image, opportunity or *chance* resources) and the consequent process of technological innovation[252] – it can be argued that it has become a general objective of the company.

The company therefore assumes general objectives of an economic-financial-social nature, where In other words, the company "*must not* [...] *any longer face the environmental problem as a mere constraint to be circumvented* [...]*, nor as an opportunity for the expansion of industrial activity, but as one of the factors that fall within the management framework of its activity, in a vision of integrated management*

[249] CHIH H. L., CHIH H. H., CHEN T. Y. (2010), "Sui determinanti della Responsabilità Sociale d'Impresa: Evidenze internazionali sull'industria finanziaria", Journal of Business Ethics, vol. 93, n. 1: 115-135.

[250] ZIOLO M., FILIPIAK B. Z., BĄK I., CHEBA K. (2019), "Come progettare sistemi finanziari più sostenibili: Il ruolo dei fattori ambientali, sociali e di governance nel processo decisionale", Sustainability, vol. 11, n. 20: 1-34.

[251] CED – COMMITTEE FOR ECONOMIC DEVELOPMENT (1976), Le responsabilità sociali delle imprese, New York.

[252] MINTZBERG H. (1994), The Rise and Fall of Strategic Planning, Prentice Hall International Limited, New York (trad. it., Ascesa e declino della pianificazione strategica, Isedi, Milano, 1996).

of the ecosphere and the ecosystem [...]. *It will not only have to introduce structural and functional changes to organize new production cycles and new products that are more ecologically valid, but it will also have to introduce changes in attitude, developing an environmental management capable of reconciling what seems irreconcilable, that is, the objectives of the company with the expectations of the population, dedicating to the environmental factor* […] *the same and greater care than that dedicated to the plants through maintenance and to human capital through training, which is also "maintenance", maintaining the efficiency of human* capital"[253]

That said, the general objectives of economic-financial equilibrium and sustainability are strongly interrelated, in that "*the company, in order to function usefully in the long run, must fulfill a vast number of duties not only towards its employees but also towards the community in which it operates. In short, the company must reconcile the profit of its subject with the interests of those who willingly give their work to the company and must submit to the needs desired for the common good of the national community in which it operates*"[254].

In this broader perspective, the interrelation between the aforementioned objectives and the related dimensions (economic-financial, social, environmental) has led to the emergence of a new "philosophy" of government action, or rather of sustainability as an element that is part of the system of essential principles and doctrinal and methodological foundations on which the management of a company must be based[255].

That said, the general objectives of the company "*are not an end in themselves, but are mediated* ends" that can be placed according to a well-defined order along "*the ends-means chain, to the point of isolating a 'pure' value, an end desired only for its own sake*"[256], namely survival.

It follows that these same goals are instrumental not only for the achievement of the ultimate goal of survival, but also for the achievement of objectives placed at higher levels. In other words, these general objectives are independent, but, to a certain extent,

[253] PANATI G., GOLINELLI G. M. (1997), Tecnica economica industriale e commerciale. Imprese, strategie e management, La Nuova Italia Scientifica, Roma.
[254] ZAPPA G. (1956), Le produzioni nell'economia delle imprese, Giuffrè, Milano.
[255] GOLINELLI G. M., VOLPE L. (2012), Consonanza, Valore, Sostenibilità: Verso l'Impresa Sostenibile, Cedam, Padova.
[256] SIMON H. A. (1957), Administrative Behavior, MacMillan, New York, (trad. it., Il comportamento amministrativo, Il Mulino, Bologna, 2001).

each one presupposes and in turn supports the others, moving towards the achievement of an ultimate goal through an approach that can only be dynamic or systemic.

Moreover, the business decision-maker finds himself constantly having to make decisions that involve *trade-offs*, such as problems of balancing objectives that cannot be fully achieved simultaneously, depending on the time, the characteristics of the business and the environment[257]. In this regard, "trade-offs *are central to economics, as they are to life. They are at the heart of economics because neither the decision-maker nor society can have everything it wants*"[258].

Therefore, achieving objectives requires the mediation and combination of a variety of economic and contextual objectives, which often conflict. These conflicts are resolved not in a strictly hierarchical pyramidal structure, but through a broader strategy in which the different objectives are linked by dynamic cause-effect relationships that span different time intervals, thus justifying, for example, current sacrifices for future returns.

In short, (strategic) business decisions are often characterized by the limited rationality of decision makers, multiple, sometimes conflicting objectives, and a series of potential directions[259].

Considering the importance that sustainability has assumed for the survival of a company, it seems legitimate to ask which direction the instrumental function between sustainability and economic-financial equilibrium takes, or rather, which is the relative position of these objectives in the ends-means chain, given that both are considered to be preliminary or functional to the achievement of the company's ultimate goal.

On closer inspection, it could be argued that in the long run the two objectives tend to converge, as the production capacity of a positive and adequate income flow with respect to risk and the possibility of finding the capital necessary to cover financial needs are intrinsically correlated with the consensus of the reference context, or with the degree of satisfaction, also, the sustainability requirements that the company has

[257] KEENEY R. L., RAIFFA H. (1993), Decisioni con obiettivi multipli: preferenze e compromessi di valore, Cambridge University Press, Cambridge.
[258] CAMPBELL D. E., KELLY J. S. (1994), "Teoria del trade-off", American Economic Review, vol. 84, n. 2: 422-426.
[259] ABATECOLA G., MANDARELLI G., POGGESI S. (2013), "Il fattore personalità: come i team di top management prendono decisioni. Una rassegna della letteratura", Journal of Management and Governance, vol. 17, n. 4: 1073-1100.

formalized in specific general objectives. In other words, the objective of maximizing the rate of return on the resources used in the company in the long term must be considered together with the social aims undertaken by the company[260].

5.2 Sustainability in the context of business decision-making criteria

Returning to what we were discussing a moment ago, if, on the one hand, the vision and the mission direct the decisions and the actions of the company according to what it intends to be or to become, on the other hand, the purpose of survival and the general objectives (economic and financial equilibrium, sustainability) define the range of potentially viable alternatives, from which the company decision-maker identifies those that contribute to the resolution of current and/or future problems.

Making rational decisions, or choices consistent with the objectives pursued, therefore requires the adoption of objective criteria capable of processing the available information. Considering the fact that the enterprise "*must necessarily refer to a more or less explicit utility function, knowledge of which is indispensable for establishing a criterion of prospective convenience consistent with the objectives of the decision-maker*"[261], the decision-making criteria must represent this utility function in order to allow for an adequate evaluation of the range of alternatives that can be pursued and, at the same time, be measurable through the adoption of appropriate metrics.

Before proceeding further with the discussion of decision-making criteria, it is useful to briefly describe the effects of sustainability on the business learning process, as it is closely connected to the company's decision-making process. The interrelation of these two processes recalls *tout court* the dual track of knowledge and consensus (trust) that characterizes the relationship between the company and the environment[262].

Sustainability as a pervasive, but at the same time new, highly dynamic theme requires, more than in the past, that decisions be supported by heuristic procedures, i.e. based on experience and a "*trial and error*" logic, rather than on formalized and pre-

[260] CASELLI L. (1995), Finalità generali dell'Impresa, in Caselli L. (a cura di), Le parole dell'impresa. Guida alla lettura del cambiamento, vol. 1, FrancoAngeli, Milano.
[261] PANATI G., GOLINELLI G. M. (1997), Tecnica economica industriale e commerciale. Imprese, strategie e management, La Nuova Italia Scientifica, Roma.
[262] CODA V. (1995), L'orientamento strategico dell'impresa, Utet, Torino.

established processes. The sedimentation of heuristically derived knowledge in the so-called "*routine of*", understood as a set of rules, procedures, conventions, strategies, technologies and knowledge through which companies operate and decide, therefore represents the key point for facing the challenges of sustainability[263]. In other words, the process of routinized experiential learning is the basis of the evolutionary adaptability to the dynamics deriving from the context in which the company operates. It follows that the decision-making and learning processes, interrelated and mutually reinforcing, constitute, together with the adaptation process (of structures and organization), the basis for the evolution of the company and for the achievement of the ultimate goal of survival. In other words, "*knowing in order to decide and survive in a hostile environment by dominating threats and seizing opportunities thanks to one's intelligence and reasoning skills, meaning the ability to find analogies between different facts, to infer a concept from a sensation, to pass from a concrete fact to an abstract idea, to formulate hypotheses, the ability to find a synthesis and a point of equilibrium between opposing* theses"[264].

Decision-making criteria are the tools through which *management,* given the accessible information and decision-making *drivers,* selects the available alternatives for solving the company's economic problems, with a view to achieving the best expected consequences.

In the business tradition, the most significant decision-making criteria are effectiveness, efficiency (in the dual sense of technical efficiency, or productivity, and economic efficiency, or cost-effectiveness) and profitability, all relating to the general principle of convenience.

With regard to effectiveness, understood as the "*correspondence between the result of an action or in any case of a circumstance, and a model or standard, used consciously or unconsciously, explicitly or implicitly, to indicate the positivity of the result itself*"[265], it is clear that in order to make decisions based on this criterion it is necessary to understand the changing expectations and pressures of the external context, adapting

[263] LEVITT B., MARCH J. G. (1988), "Apprendimento organizzativo", Annual Review of Sociology, vol. 14: 319-340.
[264] GOZZI A. (1995), Processi decisionali, in Caselli L. (a cura di), Le parole dell'impresa, Guida alla lettura del cambiamento, vol. 2, FrancoAngeli, Milano.
[265] GIUDICI E. (1995), Efficienza ed efficacia, in Caselli L. (a cura di), Le parole dell'impresa, Guida alla lettura del cambiamento, vol. 2, FrancoAngeli, Milano.

the strategic and operational choices of the company to these demands (Giudici, 1995). Effectiveness, therefore, refers to the company's ability to achieve its pre-established aims and objectives, and "*relates to the management's ability to propose new combinations of the available factors that allow the company to survive and develop*". As for efficiency, understood as the "*achievement of the desired result with the minimum expenditure of resources, or, with a substantially equivalent expression, the achievement of the greatest possible result with the utilization of all available* resources", it cannot be satisfied independently of effectiveness, in that respect for this criterion, or the attention paid to creating the conditions that allow resources to be used rationally, determines a decisive orientation towards the achievement of the objective, that is, making the action effective. Efficiency includes productivity and cost-effectiveness, where the first refers to the company's ability to increase the quantity produced (*output*) given a certain assigned set of *inputs* (and vice versa), while the second represents the company's ability to achieve its objectives at the lowest possible cost, considering both exogenous and endogenous environmental factors.

Profitability expresses the capacity of a given alternative to generate income in proportion to the *stock of* invested capital, or rather the relative measure of the economic strength of the enterprise and, therefore, the convenience of investing in a given production process and, in general, of employing resources in a given enterprise. In this context, although the decision maker's evaluation system is multidimensional, maximizing this return (income) with respect to the resources invested - albeit subject to the existence of numerous constraints and conditions of various kinds - remains the ultimate goal for understanding business activity. In this regard, profitability can be considered as an indicator of the economic convenience of investing and, at the same time, as a target value to aim for, or "*how to obtain the best possible return on available resources*"[266]. In other words, on the one hand, it allows, on the basis of a comparison between expected profitability and target profitability, to divide the range of alternatives into those that can be pursued and those that cannot, and on the other hand, once the former have been identified, to identify, all other things being equal, those that contribute to a greater extent to the overall profitability of the company.

[266] ANSOFF I. (1965), Corporate Strategy, Penguin Books, London (trad. it., Strategia aziendale, Etas Kompass, Milano, 1968).

In short, while effectiveness and profitability relate to the harmony between the company's operations and the evolutionary dynamics of the context external to the company, efficiency relates to the operating conditions of the context internal to the company.

In this context, it should be noted that "*effectiveness, efficiency* [...] *and profitability are criteria and not purposes (concerning the reason for the decisions to be made) and not even objectives: the objective instead establishes the concrete result that is intended to be achieved and therefore concerns the attainment of levels pre-established by the criterion, applied to specific objects (the entire company, significant parts of it) in scheduled* times"[267].

That said, decision-making criteria cannot be read in isolation, but must be accompanied by a basic synchronic coherence between internal and external context, and diachronic coherence, in the awareness that the process for their achievement is seamless and requires constant and systemic commitment. Coherence, therefore, is a multi-level criterion that consists of a harmony of the decision-making process between the decision-making *driving forces* and the decisions made, and between the decisions themselves, in a synchronic and diachronic perspective.

It follows that consistency between decisions is substantiated in the identification of the cause and effect relationship of a decision made with respect to the results of another current, past and prospective decision[268]. In this regard, this coherence can be understood as internal (referring to intrasystemic decisions), external (referring to intersystemic decisions) or dynamic, as the result of an intertemporal evaluation between current and future decisions.

In summary, when choosing between the alternatives available, the decision maker must consider not only effectiveness, efficiency and profitability, but also evaluate the degree of consistency between past, current and future alternatives, by adopting a unified vision that values the relationships of complementarity and interdependence between the different decisions considered together.

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[267] PANATI G., GOLINELLI G. M. (1997), Tecnica economica industriale e commerciale. Imprese, strategie e management, La Nuova Italia Scientifica, Roma.

[268] HOFER C. W., SCHENDEL D. (1978), Strategy formulation: Analytical concepts, West Pub Co, St. Paul (trad. it., La formulazione della strategia aziendale, FrancoAngeli, Milano, 1988).

However, it should be emphasized that the use of the decision-making criteria just presented is not free from potential conflicts (especially in the short term), as a result of which the company, in situations characterized by invariance of production capacity, could be forced to reject one criterion between effectiveness and efficiency. These frictions must be temporary and be resolved in the long run through the search for consistency and conditions of synergy and complementarity, so that an increase in efficiency corresponds to an increase in effectiveness.

Summarizing what has been argued so far, the decision-making criteria define to what extent (effectiveness), with what methods (efficiency) and with what benefits (profitability), taking into account the interdependencies between the different decisions (coherence), a specific objective can be achieved.

At this point, it is interesting to ask whether sustainability, in addition to constituting or instead of constituting a general objective of the company, as previously represented, can be qualified as a decision-making criterion and, if so, what relationship it has with traditional decision-making criteria (effectiveness, efficiency, profitability and consistency).

This is undoubtedly an interesting question, but one that is not easy to answer.

If sustainability is not (also or only) a decision-making criterion, but exclusively a general objective that is a precursor to survival, it would be "captured" within the scope of business decisions, made according to effectiveness, efficiency and profitability, by the criterion of consistency. In this regard, choices could be made that comply with the traditional decision-making criteria (for example, increasing efficiency and profitability), but, at the same time, are not consistent with the general objective of sustainability and, therefore, are not viable.

On the other hand, if sustainability were a general objective and, at the same time, a decision criterion, or exclusively a criterion, then it would be included in the traditional decision criteria. This perspective assumes that sustainability, as a decision-making criterion, respects the two characteristics outlined above, i.e. that it represents the utility function of the company, in order to allow an adequate evaluation of the range of alternatives that can be pursued and, at the same time, that it can be assessed through the adoption of appropriate metrics.

The valorization of sustainability as a decision-making criterion would therefore require expanding the current portfolio of indicators and methodologies available to *management (*mainly of an economic-financial nature) with general and sectoral indicators that allow for the most objective and accurate assessment possible of the conduct and impacts of the company on the environmental, social and governance spheres[269], or rather with tools that, by measuring the effectiveness of the choices made, indicate the direction and support the *management team* in the decision-making process.

The framing of sustainability within the scope of decision-making criteria raises a further question regarding the relationship with traditional decision-making criteria (effectiveness, efficiency, profitability and consistency), which can be substantiated in four alternative hypotheses, namely sustainability as (i) a criterion prior to those of a traditional nature, (ii) a concomitant criterion of equal rank to those of a traditional nature, (iii) a criterion already intrinsically appreciated by traditional decision-making criteria or (iv) a sub-criterion of traditional criteria according to a Simonian logic of means-ends chains.

In addition, with particular reference to the first two hypotheses, we must also ask which is the traditional decision-making criterion with respect to which sustainability can be understood as antecedent or concomitant.

The answers to these questions are not simple.

That said, there could also be another scenario worth considering, namely, adopting a perspective not strictly linked to economic rationality, sustainability could be traced back to extra-economic logic (meta-criteria), with consequent choices that, apparently irrational from an economic point of view, would still be traced back to the general principle of income (Barile *et al.*, 2022). It follows that "*effectiveness and efficiency are not always and only the result of economic rationality: they are also the result of organizational, political, social and sometimes 'economically irrational' motivations, but with a rationality of another order*".

In short, sustainability in the business environment, understood as a decision-making system, presents theoretical reflection profiles that are still open, in particular

[269] CED – COMMITTEE FOR ECONOMIC DEVELOPMENT (1976), Le responsabilità sociali delle imprese, New York.

regarding the role it assumes in business decision-making processes and its relationship with the relative decision-making objectives and criteria. Resolving these issues and gaining a deeper understanding of the role that sustainability plays in the broader framework of business decisions is necessary for the company itself, as a driver of change, to amplify its economic and social role and its success, and thus achieve its ultimate goal of survival.

In conclusion, the profiles represented, for whose resolution further reflection appears necessary, once again and increasingly allow to emerge, in a context characterized by growing complexity, the nature of business decisions as decisions with multiple objectives, which underlie the analysis and evaluation of multiple and differentiated preferences, objectives and criteria and, thus, the dynamic resolution of difficult *trade-offs*.

In this context, sustainability, studied both from the point of view of the *driving forces* and general objectives, and from that of the criteria on which business decision-making is based, with the possible underlying relationships with traditional objectives and criteria, appears to be increasingly emerging, in the recent evolution of the economic-social scenario, as an intrinsic aspiration of entrepreneurial finalism.

CONCLUSIONS

The demands for sustainability arising from the evolution of the economy and society have had an increasingly pervasive influence on the consolidated relationships between economics and finance in the governance of a company and the relationship of the latter with its context, acquiring relevance in terms of breadth and topicality. Breadth, in that the theme of sustainability goes beyond the internal aspects of a company to include the relationship between the regulatory, productive and financial systems. Topicality, in that it is the object of particular attention by scholars and operators who consider the relationship between economics, finance and sustainability to be decisive for the achievement of efficient and effective organizational forms of industrial production.

Companies, therefore, have paid increasing attention to issues of social responsibility - also in light of the central role as a driver of change that they have always played - in order to strengthen their credibility and reputation among the various *stakeholders*, pursuing a logic of long-term value creation and applying a trichotomy of risk, return and sustainability to their strategies. The transformation of the external environment – social and regulatory – has given rise to strategic and operational responses from companies with the aim of proactively adapting to the underlying contextual conditions and seizing emerging opportunities, also recalling the need to acquire and maintain consensus around their initiatives.

The combined effect of these dynamics is to increase the variety and complexity of the issues on the one hand, and of the consequent responses on the other.

In this regard, the interrelation between the economic-financial dimension and the sustainable dimension has led to the emergence of a new "philosophy" of governance, namely sustainability as an element within the system of essential principles and doctrinal and methodological foundations on which the governance of the company must base its actions. The result is, albeit with different intensity depending on the type of company, an increase and a weighting of the governability processes regarding the need to implement integrated multidimensional processes, where the aim of maximizing value over time, typical of economic institutions, is linked to the social and environmental needs promoted by the contexts in which they are located.

Therefore, a multi-functional objective is affirmed, the achievement of which requires the mediation and conjugation of a multiplicity of economic objectives (profitability, productivity and competitiveness) and contextual objectives (social, environmental and general well-being), which often conflict with each other. These conflicts are resolved not in a hierarchical pyramid structure, but through a broad strategy in which the different objectives are linked by dynamic cause-effect relationships that span different time intervals, thus justifying, for example, current sacrifices for future returns.

That said, sustainability enters the fundamental phases of strategic development and the planning process, that is, in the action plans of the management development lines which, fully embracing the various activities, set out the objectives to be pursued, the means to be employed, the operations to be carried out and the timing of implementation, as well as the qualitative and quantitative innovations to be made in order to remove the obstacles to the achievement of medium- and long-term objectives.

The *management team* therefore adopts management processes that, by directly and continuously involving the *stakeholders* (*engagement*), synthesize and identify the priorities and relevance of the issues of the various groups with the priorities of the company.

It is clear that the relationship between business and environment is based, even more than in the past, on a dual track of knowledge and consensus (trust), in that the development of a strategy and a strategic-operational plan by the company is nothing more than the result of a deep cognitive process of the internal and external context and, at the same time, of a prudent consensus management activity around strategic choices, in order to arouse participation and instill confidence in the ability to meet the expectations and demands of the various *stakeholders*.

In this sense, organizational and innovative changes are necessary, accompanied by the adoption of adequate tools to manage the complexity and pervasiveness of the phenomenon, that is, the adoption of a holistic approach that transversally involves, starting from the corporate culture, (i) *governance,* (ii) strategy, (iii) the *business model,* (iv) the organizational structure, (v) the internal *reporting system,* and (vi) the external communication system.

Sustainability, therefore, influences the greater or lesser availability of resources (understood in a broad sense, such as financial, economic, *know-how*, accreditation, image, opportunity or *chance* resources) which, consequently, support and feed the process of technological innovation that is indispensable for achieving a competitive advantage and, ultimately, survival.

Given the characteristics of the context outlined above, *management and stakeholders* have expressed a growing need for information and representation on the issues in question, as a prerequisite for the adoption of effective strategic, tactical and operational choices. The development of a quality information process, i.e. one that is able to make reality intelligible through codes that transform information into knowledge, influences the success of the company and, in general, the efficiency of the market.

In order to respond to these needs, there has been a gradual increase in *disclosure of* information on the subject, due to the combined effect of (i) the adoption of non-financial reporting alongside the traditional financial reporting, and (ii) the dissemination of synthetic indicators (ESG *rating results*) issued by qualified independent operators, which enhance the sustainability profile of companies.

However, these responses are partial and unsatisfactory.

As we have seen, unlike financial information, which is formalized in accounting constructs (national and international standards) and shared summary indicators, the representation of non-financial information does not yet have internationally consolidated *standards.* The process of convergence on shared metrics is still being defined, with a multiplicity of *standards of* being developed by different international organizations. This heterogeneity, together with the data that is actually available, has therefore led to a considerable degree of divergence in the assessment of companies' ESG *performance,* with potential threats to the very purpose of sustainable reporting and, ultimately, the stability of the financial markets.

ESG *rating assessments*, while having the advantage of being easily intelligible, are characterized by a considerable degree of methodological heterogeneity, which contributes to increasing the haziness of the phenomena assessed, with representations potentially capable of undermining the efficiency of financial markets. In this sense, the discrepancy in the methodological approaches used is mainly due to the combined

effect of (i) a theoretical framework that is not universally shared (non-shared ESG definition, opacity of the elements underlying the individual ESG factors, lack of universally valid and recognized *reporting standards*) and (ii) a heterogeneous appreciation of the observed phenomena (lack of a shared definition of materiality and different techniques for evaluating, aggregating and weighting the underlying data).

In this context, in order to prevent potential mistrust and guarantee an increasing flow of capital for sustainability, the introduction of a consolidated European regulatory and supervisory system is desirable, formalizing transparency requirements regarding methodologies, organizational and operational requirements of issuers, as well as uniformity of evaluation (verifiable methodologies and standardized indicators).

However, one fact emerges, namely that although ESG *credit ratings* have the methodological limitations highlighted above, they have the advantage of having stimulated intermediaries, first, and then companies, to start a process of formulating and implementing a responsive sustainable strategy, prompting an initial impulse of a cultural propagation process that requires broadening of the field of vision and action.

Sustainability has also increasingly affected financial intermediaries, given the role they play in the economic and social development of the context in which they operate and their inherent attention to the management of risk inherent in the major changes and transformations affecting the economy and society.

In particular, the regulatory intent to introduce a sustainable financial intermediation model aimed at promoting economic growth that is in line with sustainability implies a significant challenge for the governing body, given the complexity of such inclusion in the strategic and operational processes of companies. This complexity derives from the cultural, *governance and* management changes that the aforementioned sustainable financial intermediation model requires, as well as from the need to combine the identification of sustainability risks with methodologies for assessing the degree of alignment of one's credit portfolio with the new sustainability objectives, with contextual transparency regarding the risks deriving from certain sectors.

In this sense, the increased complexity of banking management, as well as the need to preserve and adopt strategies suitable for consolidating the fiduciary element of the relationship with *stakeholders*, has been further exacerbated by the greater weight assumed by the regulation and supervision of the supervisory authorities and by the

potential vulnerability of institutions to risks, so to speak, other than "traditional" ones. These interventions (specific, derived and conditioned) have a dual purpose: on the one hand, to support the transition to a sustainable economy, and on the other, to make the financial system more resilient to the possible impacts of these issues.

The international and European regulatory landscape is characterized by a high level of dynamism and a deep stratification of regulations, in which the metrics and methodologies of non-financial reporting, still in continuous evolution, will hopefully be extended to the audience of subjects involved according to a principle of proportionality and, at the same time, by the search for greater transparency and convergence in order to avoid any distorting phenomena, potentially capable of undermining investor confidence and therefore the stability of the financial market. However, the transition to a sustainable economy can only depend mainly on technological innovation and on the quality and comparability of information.

In this context, while on the one hand the introduction of the CSRD *framework of* replacement of the NFRD is to be welcomed, in that the realization of an economically competitive single European market that operates according to the logic of sustainability in the medium-long term requires an increase in the quality, quantity and comparability of the information that is disclosed on the subject, as well as an extension of the group of subjects involved with the inclusion of SMEs, on the other hand, this intention comes up against a *vulnus that* is not easily resolved: the availability of granular qualitative and quantitative data on which financial companies (and investors) can assess the sustainability of companies' production activities in order to monitor and manage the associated risks and, ultimately, make informed investments.

That said, overcoming this issue, which inevitably also involves an increase in the degree of technological innovation of companies, is a precursor to the construction of an effective European taxonomy (not mainly focused on environmental aspects), or rather a system correlated with the availability of data in which the logic of convenience between the advantages of recognizing a certain degree of sustainability and the related costs of data collection is clear.

The information requirement in question has been partially addressed by banking intermediaries from a dual perspective: on the one hand, for the sustainability profiles

relating to medium-large enterprises, also relying on entities external to the banking intermediaries themselves (agencies); on the other hand, for economic contexts characterized by a notable predominance of SMEs and, therefore, often outside the scope of evaluation of the aforementioned external entities, by initiating a slow and widespread process of customer mapping using internally developed qualitative methodologies. The banks, as a combined result of this mapping activity and the offer of dedicated consultancy services, have certainly had the merit of having started a process of sensitization of their customers towards the issues in question, highlighting the potential risks and opportunities related to sustainability.

As for banking regulations, legislators and supervisory authorities are implementing initiatives aimed at encouraging institutions and operators to consider sustainability factors within the scope of their strategies, in order to seize opportunities and understand risks.

These interventions are moving in one direction, that is to emphasize the magnitude of the effects of the issue in question, encouraging intermediaries to consider ESG factors and related risks in the context of their strategies, business processes, governance processes and risk management practices, and, in general, prudential supervision obligations.

However, as emphasized by the supervisory authorities themselves, the current prudential regulatory framework is still in a state of flux given the need to fill the knowledge *gap regarding* the effects, in terms of breadth and scope, of sustainability risks on individual financial positions and related vulnerabilities, or to assess whether individual supervised institutions consider the long-term resilience of the *business model*.

In this context, banking intermediaries are required to adopt a holistic approach that is reflected across different levels of the *business model*, through (i) the adoption of specific quantitative/qualitative elements in the Risk Appetite Framework (RAF) and in strategic planning, (ii) the adoption of specific collection and use policies and (iii) the division into different *business units* for products and services in line with customer needs.

The scope of this consideration is not without its burdens, as the inclusion of these aspects in the RAF requires a cascade update of ICAAP, ILAAP and traditional credit

monitoring systems, as well as remuneration policies, with prudent risk and capital planning as an integral component of *risk management*. Consequently, the reflections in the ICAAP and ILAAP context require changes and additions in terms of (i) mapped risks, (ii) roles and responsibilities in *governance*, (iii) definition of a *business model* that is in line with the strategic guidelines relating to the new risks considered and (iv) assessment of current and future capital adequacy.

The context does not help, as the increased complexity of banking management, as well as the need to preserve and adopt strategies suitable for consolidating the trust element of the relationship with *stakeholders*, is further exacerbated by the growing weight assumed by regulation on the subject in question.

However, as we have seen, the journey towards a sustainable economy requires a new course to be set, based even more than in the past on trust and mutual understanding and knowledge of the context between the various parties involved. On the one hand, financial intermediaries must encourage companies to embark on this path by (i) guaranteeing correct conditions of access to credit that enhance their sustainability profile, (ii) providing the necessary assistance for the realization of new projects through new financing and (iii) offering dedicated consultancy services. On the other hand, companies must be reliable travel companions, guaranteeing a greater degree of information transparency. And yet again, institutions (of different kinds) must implement more positive, conscious and organic policies with a broader spectrum that favor the achievement of the common goal.

Given the current relevance and breadth of the topic, sustainability appears to be a complex phenomenon on which there is a vast academic literature, as evidenced by the numerous and varied contributions published. In this regard, focusing on the topic of integrating sustainability into the strategic formulation and implementation process of banking companies (also encouraged by the various supervisory authorities), the studies of the doctrine can be conventionally classified, not without overlaps, into the following categories: (i) *corporate governance*, (ii) risk management policies, (iii) funding and lending policies and (iv) economic and financial *performance indicators*. Analysis of the numerous contributions presented highlights the complexity of the subject in question and, at the same time, how they do not reach universally shared and consolidated conclusions.

In this regard, these divergences can be seen in the fourth and final strand of academic literature concerning the relationship between sustainability and the economic and financial *performance of* banking intermediaries. In this context, considering that (i) the internal implementation of sustainability practices in line with the expectations and demands projected by the external dimension can constitute a sort of intangible asset and that these may not be adequately captured by accounting indicators and (ii) each individual factor of the overall ESG score represents a synthesis of a varied series of underlying elements (environmental, social and *governance factors*) that may have a different relationship with the economic and financial *performance of* the company, this work aims to enrich the academic literature of the strand represented above, broadening the horizon of analysis to accounting-based and market-based metrics and, at the same time, enhancing the underlying elements that make up the ESG *score.*

The results, partially in line with previous research show that there is a positive and significant relationship between sustainability and economic and financial *performance only* when it is assessed using market-based metrics, thus corroborating the strand of academic literature that traces sustainability back to a kind of intangible asset that is potentially not valued by accounting metrics. Considering that sustainability is a medium-long term phenomenon, this evidence could be ascribable to a mere temporal effect, in that, on the one hand, accounting metrics, as is well known, present an exemplification of a much more complex reality, based on historical and prudential evaluations that do not contemplate future expectations (risk, financial value of time), on the other hand, stock market metrics almost instantly appreciate a greater degree of information on *accountability*, *compliance and* transparency practices, with a reduction in agency costs, and the potential future effects of the economic initiatives undertaken.

In addition, considering the individual factors underlying sustainability, the results show both a positive and significant relationship between environmental sustainability and *market-based* economic and financial *performance,* and at the same time, a lack of relationship with social and *governance* factors. These results, contrary to expectations and to the contribution of Marsat and Williams, could be ascribed to the importance given to climate and environmental issues – in light of a greater "awareness" regarding the impacts of the related risks on the traditional ones in terms

of the stability of the financial system – in the legislative and regulatory provisions, in the strategies of banking intermediaries and in the decision-making choices of investors and consumers, with respect to those of a social and *governance* nature.

That said, the critical issues of the study presented could be traced back, mainly, to the combined provision of (i) an absence of a regulatory definition that explains the underlying contents of the individual ESG criteria, (ii) a methodological heterogeneity underlying the elaboration of *rating* judgments, in consideration of a non-shared definition of materiality and the application of different criteria for the evaluation, aggregation and weighting of the underlying data and (iii) a considerable need for information between companies and *stakeholders* regarding the sustainable conduct assumed by the companies themselves in the medium to long term. In this sense, as already highlighted, the recent guidelines of the legislator and supervisory authorities aimed at formalizing the phenomenon in question in a unified and shared framework are to be judged positively.

In consideration of the lack of unambiguous and consolidated academic contributions, as well as the absence of the regulatory provisions mentioned above, future research perspectives could empirically investigate the relationship in question using (i) sustainability metrics that are alternatives to those commonly used and that reflect the actual degree of sustainability of the subject being evaluated, i.e. indicators developed independently from those commonly available in practice based on publicly available documentation, (ii) more analytical sustainability indicators that assess the actual value created for the context in which the company operates and (iii) that adequately valorize the peculiarities of individual banking intermediaries.

Finally, returning to a theoretical reading of the subject in question, it is clear that sustainability within the company, understood as a system of decisions, presents profiles of theoretical reflection that are still open, in particular regarding the role it assumes in company decision-making processes and its relationship with the relative objectives and decision-making criteria.

These profiles, which require further reflection, once again and increasingly highlight, in a context characterized by growing complexity, the nature of business decisions as decisions with multiple objectives, which involve the analysis and evaluation of

multiple and differentiated preferences, objectives and criteria, and thus the dynamic resolution of difficult *trade-offs*.

In this context, sustainability, studied both from the point of view of the *driving forces* and general objectives, and from that of the criteria on which business decision-making is based, with the possible underlying relationships with traditional objectives and criteria, appears to be increasingly emerging, in the recent evolution of the economic-social scenario, as an intrinsic aspiration of entrepreneurial finalism.

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