26 EISIC - 2023

Ethical businesses in an ethical world: does the adoption of the Italian “legality rating” affect firms’ insolvency risk?

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Abstract:

Purpose

In recent years, companies have increasingly focused their attention on new ways of regulating sustainable business activities and tools. This has led to the emergence of a “new sensitivity” regarding Corporate Social Responsibility (CSR) issues. Companies are therefore called to identify new strategies to improve their competitive advantage, to improve their financial performance and to differentiate themselves from competitors. To adapt to the changing legislation about CSR, Italy, in 2012, adopted the “legality rating” into its regulatory system, a rewarding tool for ethically virtuous companies. Taking into account the already present literature on the subject, and using discriminant analysis, the study aims to analyze the impact of this CSR-related tool on the bankruptcy risk of a sample of companies operating in the Italian service sector.

Methodology

The study, of an exploratory nature, uses multiple discriminant analysis to examine the relationship between "legality rating" and firms' bankruptcy risk. In this regard, research considers the Z'-Score and Z"-Score formulas because sample companies are listed and unlisted, and to be aware of which of these two models is more capable of grasping the situation of the Italian companies with "legality rating" (later also referred to as "LR").

Findings

Even in presence of an ever hostility of the corporate world towards non-financial issues, the study shows that “legality rating” determines a reduction, over the years, of the bankruptcy risk for companies that voluntarily adopted it. Results also suggest that the ethical commitment of a company can positively influence its financial performance.

Research limitations/implications

The LR could be also used as a "ram" by companies, to operate within the bounds of legality while acting in an unethical, and sometimes unsustainable, way. Main limitations regard the italian low maturity about CSR issues and consequently the scarce relevance of the data provided by Agcm. Companies with “legality rating” could behave in an unethical manner while maintaining their “virtuous” status. This can invalidate the work’s results. However, this work lays the foundations for future research on the subject, offering food for thought for management and ideas for the academic world, but above all paves the way for new research aimed at deepening the often-unclear link between finance and CSR.

Originality/Value

The paper contributes to the expansion of the literature on the theme, considering the specific case of the Italian service sector, where a high density of “rated” companies can be traced. In Italy, research on the theme is still in its infancy, although the “legality rating” tool was introduced in 2012. The results and considerations of this work can offer new points of view and new ideas that are also useful for comparing the results of different CSR-related tool at European level.

Keywords

Corporate Social Responsibility; legality rating; bankruptcy; financial performance; service sector.

Paper type

Research paper.

1. Introduction

1.1. Corporate Social Responsibility across Europe: perceptions and tools

Over the years, scholars, academics and companies have focused their attention on issues related to the so-called ESG world, but above all, they have worked to implement new strategies aimed at improving the position of corporations in society. In particular, in the American territory, and with the spread of capitalism, a new sensitivity has arisen in the corporate world towards the notion of CSR (Corporate Social Responsibility). In fact, as stated by Townsend (2014), since capitalism has been suffering a crisis of liquidity, credibility and confidence in recent years, new difficulties and challenges have arisen for companies, which can only be overcome through CSR and the paradigm of "sustainable development". Today's international economic scenario is characterized by changing firm strategies which, taking into account the needs of the various stakeholders, are inserted in a context permeated by an high level of competition between companies. Furthermore, market dynamics are increasingly exacerbating the need for a direct relationship between business and society. European companies, therefore, regardless of their sector, are called to adopt CSR tools suited to their organizational structure and their role in the reference market. To do this, new organizational paradigms and new strategies capable of improving the financial performance, corporate reputation and attractiveness of the products offered, are identified. The European legislator dictates rather articulated rules in this regard, and managers are always ready to look for the fundamental drivers to improve their competitive position and therefore their market share.

Since 2012, quite a few European Directives have involved CSR-related issues (Polonsky and Jevons, 2012; Acquier et al., 2017). Financial stability and a direct approach to the so-called "financial sustainability" represent the focal elements of the new action of entrepreneurs, and the European Commission is promulgating more and more Directives and Recommendations aimed at supporting "honest" entrepreneurs. Although in different ways, European States are introducing new instruments into their legal and regulatory systems, very often on a voluntary basis, aimed at guaranteeing a more sustainable approach of companies on the market. In particular, in addition to issues strictly related to CSR, a strategic role is assumed by the issue of ESG reporting. Directive EU/2014/95, concerning the non-financial reporting of companies, intervened by regulating the matter and encouraging the Member States to undertake a process of harmonization of the national legislation with the Community one. An emblematic example is certainly that of "legality rating" (later also referred to as "LR"), introduced in the Italian legal system in 2012, and aimed, according to a purely rewarding approach, at promoting ethical behaviours by entrepreneurs and rewarding the most "sustainable" companies through measures concerning creditworthiness towards banks and corporate reputation in the reference market.

From an in-depth analysis of the Italian legislation and of the dataset provided by the AGCM (Autorità Garante della Concorrenza e del Mercato) it is possible to find a close connection between the rating and the financial performance of the companies which, over the years, have applied for this tool. The study, from an exploratory perspective, aims to evaluate the effects of the latter on business performance and on the probability of business insolvency (calculated through Altman's Z-Score formulas) considering a sample of n. 100 service companies holding LR, in the period from 2018 to 2021.

1.2. ESG versus CSR: features and differences

To better understand the purpose of this work, and therefore the results and consequent implications, it is essential to investigate the main differences between two concepts, sometimes

erroneously juxtaposed in terms of similarity, namely ESG and CSR. For Liang and Renneborg (2020), ESG (Environmental, Social and Governance) criteria represent an additional element and an extension of the concept of Corporate Social Responsibility. Sila and Cek (2017) and Hakansson and Salus (2021), on the other hand, trying to develop a clear definition of the two concepts, argue that ESG scores represent a proxy and a unit of measurement thanks to which the concept of sustainability manages to overcome the limit deriving from an application of the term exclusively in the environmental field. Alva (2020) argues that the main difference lies in the fact that CSR has the aim of making businesses accountable for their impact on sustainability; ESG performance, on the other hand, represents a fundamental element for measuring the effort of companies and systems in terms of sustainability. Carroll (2018) defines CSR as a concept that summarizes the responsibility of businesses regarding aspects of society that go beyond the needs and interests of stakeholders and investors. The same line of thought is followed by Calveras et al. (2007) and Benabou and Tirole (2010). Therefore, Corporate Social Responsibility can be defined as a precursor of ESG. The latter is instead a unit of measurement that allows interested parties to define a tangible and measurable activity with a positive impact in various contexts, today with close interrelationships with firms financial performance.

2. Literature review

2. 1. CSR: role and developments

In literature, the topic of CSR is closely linked to that of ESG. Corporate Social Responsibility has numerous definitions: Carroll (2018) defines it as a tool that allows companies to act in the interest of stakeholders with a positive impact on social and environmental aspects. Calveras et al. (2007) define CSR as a behaviour with the fundamental characteristic of voluntariness, which companies adopt in relation to social aspects. CSR is also understood as a way of self-regulation (Hakansson et al., 2021): Liang & Renneboog (2020) define the concept as "sacrificing one's profits in the social interest". In recent years, the topic has been the subject of numerous re-evaluations and interpretations (Alva, 2020; Billio et al., 2021). Most have focused on the tangible aspect of the topic: CSR is for Dorleitner et al. (2015) and Li et al. (2021) a way to make a business accountable. It follows that ESG factors are to be considered units of measurement for comparing the CSR activities of different companies (Wang et al., 2016; Steurer et al., 2011; La Rosa et al., 2021). The issue of CSR and “legality rating” is then to be included in a regulatory trend which, in some ways, goes beyond the scientific one and lays the foundations for a more practical implementation of CSR oriented activities (European Commission, 2020; 2021).

In particular, CSR is linked to the voluntary nature (Dahlsrud, 2008; Kumar et al., 2016) and a large part of literature focuses on CSR tools that companies can adopt (Neville et al., 2005; Sierra-Garcia et al., 2015; Brogi et al., 2022). Of the latter, the strategic value is recognized (Hall, 1993; Neville et al., 2005), which has a positive influence on corporate reputation (Chan et al., 2014), competitive advantage (Campbell, 2007; Lys et al., 2015; Cahan et al., 2015) and financial performance (Del Baldo, 2012; Caputo & Rizzi, 2018; La Rosa et al., 2021). Further studies investigate the relationship between CSR and the Resource Based View framework and the impact of the latter on firms performance (Wang & Sarkis, 2017; Platonova et al., 2018; Hanas et al., 2018), while other authors analyze the issue from an "external" perspective, affirming a positive correlation between the adoption of CSR-related tools and competitive advantage (Orlitzky et al., 2003). Finally, a large part of the literature shows a positive relationship between CSR and financial performance: CSR implies, often indirectly, better financial performance due to its natural ability to support the generation of value over time

(Siltaoja, 2006). However, this relationship could lead to unethical and harmful results for the company (Barnett & Salomon, 2012), above all by virtue of tools with unclear characteristics for the players concerned (lo Conte et al., 2022).

2. 2. Towards a culture change: corporate financial performance and CSR

2.2.1. The "legality rating"

The present work flows into the line of studies concerning the so-called "rating culture" in the corporate environment (Steurer et al., 2011; Chan et al., 2014; Cahan et al., 2015; Altman, 2015). Today, we are witnessing a "paradigm shift" in terms of evaluating corporate performance, and businesses and investors are exploring new ways to evaluate social performance (Barnett & Salomon, 2012; Wang & Sarkis, 2017; OECD, 2022). More and more investors are interested in going beyond assessing ESG risks that companies are exposed to themselves: they are also considering business impacts on society and the environment (Idowu & Schimdpeter, 2015; Hanas et al., 2018). Some jurisdictions, like the EU one, want to go beyond mandating businesses to disclose financially material ESG risks by including such impacts in forthcoming disclosure standards (Wang & Sarkis, 2017). But even among those standards that focus on business impacts, the emphasis is placed on what businesses do, rather than actual outcomes or impact.

For Altman (2018), to fully understand the current and future financial situation of companies, it is essential to re-evaluate a credit culture and use an adequate rating system capable of externalizing complex information in a simple and effective way. Such an approach is also used in the CSR field (Battaglia et al., 2010).: national legislators encourage responsible behaviour by companies and all the legal frameworks are implementing a series of measures aimed at allowing a rapid harmonization of national legislation with the European one. As highlighted by the European Commission (2020), public authorities have an important role to support and encourage companies in their efforts to conduct their business responsibly, manly:

- through economic-financial incentives to adhere to specific policies regarding CSR;
- providing necessary training and tools to implement policies;
- through support in terms of implementation of national strategies.

The European Commission supports the development of ethical business strategies, today, through a combination of voluntary and mandatory actions consistent with the United Nations 2030 Agenda for Sustainable Development and associated Sustainable Development Goals (SDGs) objectives. At EU level, the most important current horizontal piece of CSR-related EU legislation is Directive 2014/95/EU ("non-financial reporting Directive (NFRD), or NFR Directive"), that sets out the rules on disclosure of non-financial and diversity information by large companies and has decisively influenced the application of the "legality rating", introduced in Italy through Decree Law 1/2012 and subsequently ratified by Law 62/2012. It represents, according to the legislator's vision, an instrument aimed at favouring the diffusion of a business culture more oriented to issues related to legality and ethics (Calabrò & Mussolino, 2013). Following the logic of "efficient simplification", the rating attributes a number of "stars" (maximum 3) which symbolize the degree of sustainability and ethics of the company's activities and therefore the businesses' creditworthiness (AGCM, 2012; 2014; La Rosa et al., 2021).

This system, although, could open the door to opportunistic behaviour by players on the market (Caputo & Pizzi, 2018; Sancetta & lo Conte, 2023). It is therefore essential to deepen, here, the relationship between CSR-related tools and the financial performance of companies. In fact,

little is present regarding the Italian case, especially regarding the relationship between legality rating and corporate financial performance, and, more precisely, the risk of bankruptcy.

2.2.2. Financial stability in ethical business models

Financial stability has always been the predominant objective of European companies, and numerous studies have demonstrated over the years how an improvement in competitive advantage and reputation can have positive effects on financial performance (Barnett & Salomon, 2012; Caputo & Pizzi, 2018; La Rosa et al., 2021). The Italian "legality rating" has already been the subject of attention from the European academic world: some studies have examined purely "normative" aspects (Bosetti, 2018), while others have focused on an empirical analysis of the phenomenon (Caputo & Pizzi, 2018; 2021). A further line of studies, on the other hand, has focused on the relationship between the legality rating and the risk of bankruptcy of the companies that adopted it (Caputo & Pizzi, 2018).

The issues of corporate insolvency and bankruptcy have monopolized scientific literature for years (Beaver, 1966; Altman, 1968, 1983, 2002; Altman et al., 1995; Alberici, 1975; Taffler, 1976, 1982; Wilcox, 1976; Argenti, 1976; Lawrence & Bear, 1986; Flagg et al., 1991; Kern & Rudolf, 2001), and in Italy, some authors investigated the causes of crises (Argenti, 1976; Coda, 1977, 1990; Guatri, 1986; Confalonieri, 1993; Sciarelli, 1996; Piciocchi, 2003; lo Conte & Sancetta, 2022), while others analyzed and outlined specific tools capable of managing the crises themselves (Guatri, 1986; Caprio, 1997; Danovi et al., 2000; Falini, 2008). However, the most famous and disruptive study was certainly that of Altman: the first formulation of his Z-Score was intended for US publicly traded manufacturing firms (Altman, 1968). Subsequently, the model was updated and adapted to the situation of not listed companies (Scott, 1981; Altman, 1993; Danovi & Quagli, 2012). The relationship between predicting insolvency and CSR has been analyzed over the years both at national and European level. However, there is much to analyze on the subject, especially regarding the implications of the Italian LR in the service sector and the impact of the pandemic on the use of this tool.

3. Study objectives

To the author's own knowledge, previous studies partially understood the relationship between "legality rating" and firms' bankruptcy risk. In accordance with previous literature (Doni et al., 2016; Ginesti et al., 2018; Caputo & Pizzi, 2018; Caputo e Pizzi, 2020; lo Conte & Sancetta, 2022), our study aims to analyze the effective impact of the LR on Italian service companies in terms of economic and financial performance. In particular, the study, referring to companies that received or renewed their rating in 2021 and that are "rating holders" in the 2018-2021 period, aims to answer the following question: "does an ethical and virtuous behaviour by italian service companies (namely "LR adoption") reduce the insolvency probability during theyears?". To answer this question, the research analyzes the impact that the rating has on the riskof insolvency in the sample companies. It also intends to confirm an inverse correlation betweenLR adoption and increased bankruptcy risk, also bearing in mind the influence of the covid-19 pandemic.

The used methodology is the discriminant analysis: the study compares Z'-Score and Z''-Score trends of 100 "rated" companies and 100 "unrated" ones, in order to have empirical evidence of the impact of the introduction of the LR within companies' systems.

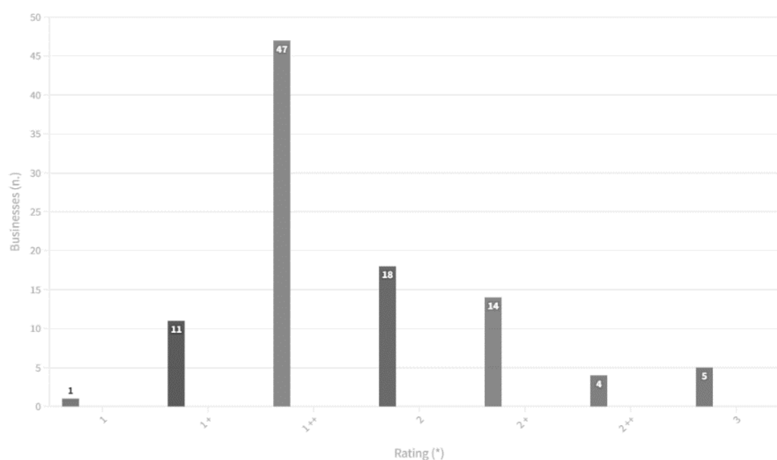
4. Methodology

4. 1. Data collection

The LR is a summary indicator of compliance with high legality standards by companies that have requested it. The tool was created to promote the introduction of ethical principles in business conduct and has in itself a strong rewarding component, which is reported in the provision establishing the RL (art. 5 ter legislative decree 24 January 2012, n. 1, converted by law 24 March 2012, n. 27). The assignment of the rating, of a voluntary nature, is granted free of charge by the AGCM, in collaboration with the Italian Ministero della Giustizia e dell' Interno. Therefore, the sample under investigation was extracted from the official database provided by AGCM. From a total of 10,208 companies in the database on 2023/05/31, research led to a sample of 100 "rated" service companies with the following characteristics[1]:

- legal form: s.r.l. (limited liability companies); s.p.a. (often translated as "joint-stock company", it is more or less equivalent to S.A. or public limited company (Plc) in other Countries);
- industrial sector: service sector ("settore terziario"), in which the highest rate of "rated" companies is recorded;
- date of LR assignment or renewal between 2020/12/31 and 2021/12/31, as the AGCM issues its judgment on the matter every two years and the last judgment took place precisely in 2021;
- LR expiry date between 2022/12/31 and 2023/12/31;
- "rated" in the 2018-2021 period. Statistics regarding the "stars" are present in Figure 1.

Figure 1: LR values



Source: our processing

By AGCM, each company is identified by: procedure number; fiscal code; registered office; name; rating. All the information is contained in the following Table 1 (for privacy reasons, in this study companies are identified exclusively by procedure number).

[1] In Italy, the service sector is called "settore terziario" and is the economic sector in which services are produced or supplied, i.e. all activities, generally intellectual, complementary and auxiliary to the activities of the primary sector (agriculture, breeding) and secondary (manufacture).

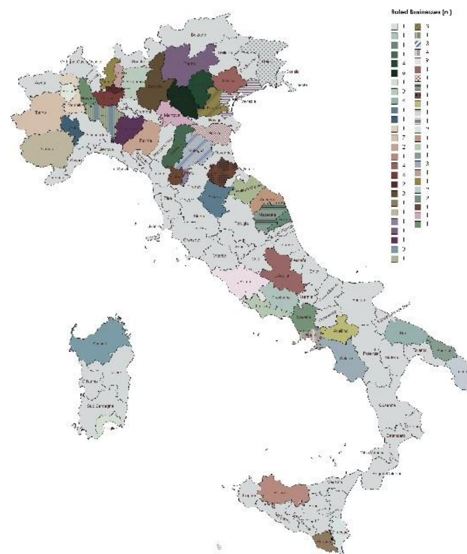
Table 1: Sample group of firms

Procedure number	Decision date	Result	Rating	Expiry date	Procedure number	Decision date	Result	Rating	Expiry date
RT1	08/06/2021	Renewed	2	08/06/2023	RT10115	30/09/2021	Assigned	1 ++	30/09/2023
RT10000	03/08/2021	Renewed	2 +	03/08/2023	RT10117	19/10/2021	Assigned	1 ++	19/10/2023
RT10003	15/06/2021	Renewed	2 +	15/06/2023	RT10121	03/08/2021	Renewed	2	03/08/2023
RT10007	03/08/2021	Assigned	1 +	03/08/2023	RT10124	03/08/2021	Renewed	1 ++	03/08/2023
RT10011	03/08/2021	Renewed	1 ++	03/08/2023	RT10126	14/09/2021	Renewed	1 ++	14/09/2023
RT10015	15/06/2021	Renewed	1 +	15/06/2023	RT10129	31/08/2021	Renewed	1 +	31/08/2023
RT10019	04/11/2021	Assigned	3	12/10/2023	RT10130	31/08/2021	Assigned	2	31/08/2023
RT10020	21/09/2021	Assigned	2 +	21/09/2023	RT10142	03/08/2021	Renewed	1 ++	03/08/2023
RT10022	22/06/2021	Renewed	1 ++	22/06/2023	RT10144	30/09/2021	Assigned	2 +	30/09/2023
RT10024	01/07/2021	Renewed	1 ++	01/07/2023	RT10147	03/12/2021	Assigned	1 +	03/12/2023
RT10027	01/07/2021	Renewed	2	01/07/2023	RT1015	14/09/2021	Renewed	1 ++	14/09/2023
RT10029	01/07/2021	Renewed	1 ++	01/07/2023	RT10153	03/08/2021	Assigned	2	03/08/2023
RT1003	03/08/2021	Renewed	2	03/08/2023	RT10160	21/09/2021	Renewed	1 ++	21/09/2023
RT10031	14/09/2021	Assigned	1 +	14/09/2023	RT10162	12/10/2021	Assigned	2	12/10/2023
RT10032	08/06/2021	Renewed	1	08/06/2023	RT10164	25/05/2021	Renewed	1 ++	25/05/2023
RT10035	03/08/2021	Renewed	2	03/08/2023	RT10165	03/08/2021	Renewed	2	03/08/2023
RT10036	03/08/2021	Assigned	1 ++	03/08/2023	RT10166	07/09/2021	Assigned	1 ++	07/09/2023
RT10042	31/08/2021	Assigned	2	31/08/2023	RT10167	30/09/2021	Assigned	1 ++	30/09/2023
RT10043	18/05/2021	Renewed	1 ++	18/05/2023	RT1079	27/07/2021	Renewed	2 +	27/07/2023
RT10045	20/07/2021	Renewed	2 +	20/07/2023	RT10791	25/11/2021	Renewed	1 +	25/11/2023
RT10046	04/11/2021	Assigned	1 ++	04/11/2023	RT10792	03/12/2021	Assigned	2 +	03/12/2023
RT10047	01/07/2021	Renewed	1 ++	01/07/2023	RT10793	25/11/2021	Assigned	1 ++	25/11/2023
RT10052	13/07/2021	Renewed	2 +	13/07/2023	RT10794	21/12/2021	Assigned	1 +	21/12/2023
RT10053	25/11/2021	Assigned	1 ++	25/11/2023	RT10795	19/10/2021	Renewed	2 ++	19/10/2023
RT10057	03/12/2021	Assigned	2	03/12/2023	RT10797	12/10/2021	Renewed	3	12/10/2023
RT10062	08/06/2021	Renewed	2 +	08/06/2023	RT10799	19/10/2021	Renewed	2	19/10/2023
RT10064	02/02/2021	Assigned	3	02/02/2023	RT108	21/09/2021	Renewed	2 ++	21/09/2023
RT10067	12/10/2021	Assigned	1 ++	12/10/2023	RT10800	25/11/2021	Renewed	1 ++	25/11/2023
RT1007	18/05/2021	Renewed	1 +	18/05/2023	RT10805	04/11/2021	Renewed	1 +	04/11/2023
RT10075	15/06/2021	Renewed	1 ++	15/06/2023	RT10806	31/08/2021	Renewed	2	31/08/2023
RT10076	15/06/2021	Renewed	1 ++	15/06/2023	RT10808	19/10/2021	Renewed	1 ++	19/10/2023
RT10084	12/10/2021	Assigned	1 ++	12/10/2023	RT10809	30/09/2021	Renewed	1 ++	30/09/2023
RT10086	20/07/2021	Renewed	1 ++	20/07/2023	RT10810	25/11/2021	Renewed	1 ++	25/11/2023
RT10089	01/07/2021	Renewed	1 ++	01/07/2023	RT10811	25/11/2021	Renewed	1 ++	25/11/2023
RT10091	05/10/2021	Assigned	1 +	05/10/2023	RT10816	21/12/2021	Assigned	1 ++	21/12/2023
RT10092	27/07/2021	Renewed	1 ++	27/07/2023	RT10817	14/12/2021	Assigned	1 ++	14/12/2023
RT10094	21/09/2021	Assigned	2 +	21/09/2023	RT10819	04/11/2021	Renewed	1 ++	04/11/2023
RT10095	03/08/2021	Renewed	2	03/08/2023	RT10840	21/12/2021	Assigned	1 ++	21/12/2023
RT10097	13/07/2021	Renewed	2 +	13/07/2023	RT10847	04/11/2021	Renewed	2	04/11/2023
RT10098	25/05/2021	Renewed	2	25/05/2023	RT10848	14/12/2021	Renewed	2 +	14/12/2023
RT10099	20/07/2021	Renewed	1 ++	20/07/2023	RT10849	21/12/2021	Assigned	2	21/12/2023
RT101	31/08/2021	Assigned	1 ++	31/08/2023	RT4118	14/12/2021	Assigned	2 +	14/12/2023
RT10102	31/08/2021	Renewed	1 ++	31/08/2023	RT4119	14/12/2021	Assigned	2 ++	04/11/2023
RT10105	12/10/2021	Assigned	1 ++	12/10/2023	RT412	15/06/2021	Assigned	1 ++	15/06/2023
RT10108	27/07/2021	Renewed	1 ++	27/07/2023	RT4120	18/05/2021	Assigned	3	18/05/2023
RT10109	22/06/2021	Renewed	1 ++	22/06/2023	RT4125	21/09/2021	Renewed	1 ++	21/09/2023
RT1011	31/08/2021	Renewed	2 ++	31/08/2023	RT4126	09/03/2021	Assigned	3	09/03/2023
RT10110	13/07/2021	Renewed	1 ++	13/07/2023	RT4128	13/04/2021	Assigned	1 ++	13/04/2023
RT10111	04/11/2021	Assigned	2	04/11/2023	RT413	13/07/2021	Assigned	1 +	13/07/2023
RT10113	05/10/2021	Assigned	1 ++	05/10/2023	RT4168	31/08/2021	Renewed	2 +	31/08/2023

Source: www.agcm.it

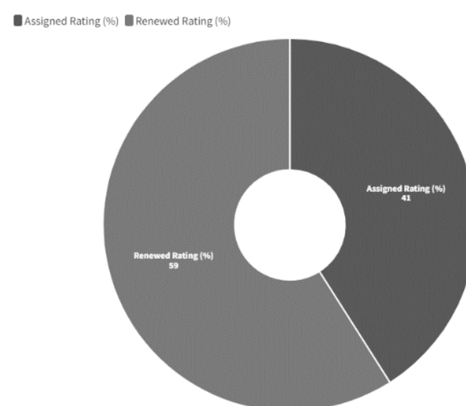
Considered companies are located throughout the Italian territory (Figure 2). Northern Italy shows a high concentration of "rated" companies compared to the rest of Italy. The renewed ratings represent 59% of the sample; those attributed 41% (Figure 3). This means that, in 2021, 59% of the considered sample already had the LR. As shown in Table 1, the average rating is equal to 2.1 stars, while the average expiry date of the decision is 2023/08/29. For the purposes of our analysis, Z-Score of each company was calculated using the financial data provided by AIDA (Analisi Informatizzata Delle Aziende Italiane), a database provided by Bureau van Dijk, that contains comprehensive information on companies in Italy, with up to ten years of history.

Figure 2: Dislocation of the firm sample on the Italian territory



Source: our processing

Figure 3: LR % partition



Source: our processing

To confirm or not an inverse correlation between LR adoption and increased risk of insolvency, we selected a control sample made up of 100 companies, with organizational and structural characteristics similar to the main sample but which have never applied for LR. Data was obtained from the AIDA database. Search criteria can be described as follows:

1. legal status. We considered "active" companies that have not been subjected to dissolution, bankruptcy, arrangement with creditors, liquidation (Altman, 1968; Altman et al., 2013);

2. legal form. The chosen companies are all s.r.l, and s.p.a.;

3. region. We considered companies operating throughout the national territory;

4. NACE Rev. 2. NACE is the "statistical classification of economic activities in the European Community" (Eurostat, 2006). We considered service companies;

5. availability of financial statements. For the effective application of the Altman model, we only considered companies that published their financial statements in the 5 years prior to 2021.

Furthermore, to populate the control sample, the necessary criteria to access the rating were considered, namely (Agcm, 2021):

1. operational headquarters in Italy;

2. min. revenue of two million euros in the year ended in the year preceding that of the request;

3. registration in the commercial register for at least two years from the date of the application.

Given that the companies in the control sample do not have LR, we verified the presence of criteria n. 2 and n. 3 for each firm in the years considered by the research, considering each one as a "potentially RL firm applicant". Research led to a sample of 100 “control” firms located throughout the Italian territory.

4. 2. Multiple discriminant analysis: empirical results

From a careful reading of the regulatory provision that outlined the Italian LR, it can be seen that the rating contributes to the determination of the company's reputation and above all guarantees transparency regarding the company's financial situation. In fact, the LR should certify the regularity of pension and insurance contributions, the regularity of payments to suppliers and a suitable liquidity situation of the companies at least in the medium term. Therefore, the first methodological step concerns the calculation of the Z'-Score and Z"-Score to verify if indeed, in the last AGCM decision regarding the assignment/renewal of the rating, considered companies possessed solid and healthy structural and financial characteristics. In other words, the first step of the research concerns the verification of a correct application of the rating following the regulatory provisions of the Italian government. Based on the studies of Altman (1993; 2001; 2015) and Altman, Danovi & Falini (2013), we decided to apply the Z'-Score and Z’’-Score formulas because considered companies are listed and unlisted, and to be aware of which of the two models is more capable of grasping the situation of the Italian companies covered by the LR. Using multiple discriminant analysis, we first calculated the 2021 Scores for the sample of 100 “rated” companies. Results are shown in the following Table 2.

Table 2: Z’-Score and Z’’-Score results

Z' - Score	2021	Z'' - Score	2021
Sample (n.)	100	**Sample (n.)**	100
Z' < 1,23 - "Distress" Zone	20%	**Z'' < 4,5 - "Distress" Zone**	7%
1,23 < Z' < 2,99 - "Grey" Zone	46%	**4,75 < Z'' < 5,85 - "Grey" Zone**	15%
Z' > 2,99 - "Safe" Zone	34%	**Z'' > 6,25 - "Safe" Zone**	78%

Source: our processing

On a sample of 100 active “rated” companies, and therefore not characterized by a documented insolvency situation, the Z'-Score classifies 20% of the firms in the "distress zone", 46% in the "grey zone" and only 34% in the "safe zone", i.e. in the area with the lowest risk of bankruptcy. The Z"-Score, on the other hand, records an increase in companies in the "safe zone" (78%), and a significant decrease in companies in the "grey zone" and “distress zone”. This confirms the results of the previous literature on the subject (Altman, 2001; 2015; Danovi & Falini,

2013): the Z'-Score does not seem to be able to understand the real economic-financial situation of Italian companies as it does not correctly classify the firms in the relative areas they belong to. The Z"-Score, on the other hand, is more effective in positioning objectively active and healthy companies in the “quiet” zone. Further information is contained in Table 3.

Table 3: Z’-Score and Z’’-Score values

Z' - Score	2021	Z'' - Score	2021
Sample (n.)	100	**Sample (n.)**	100,00
Average Value	2,92	**Average Value**	6,97
Max Value	12,98	**Max Value**	14,54
Min Value	0,24	**Min Value**	1,10
Adjusted Average Value	2,84	**Adjusted Average Value**	6,95
Median Value	1,98	**Median Value**	6,71
St. Dev.	2,49	**St. Dev.**	3,22

Source: our processing

Z'-Score average value is 2.92 ("Grey zone") while the average Z"-Score value is 6.97 ("Safe zone"). The values adjusted by eliminating maximum and minimum values (to avoid bias in the results) confirm the difference between the two models, as well as the median value and standard deviation. Interpreting the value of the Z-Score as a proxy for the financial stability of a company (Caputo & Pizzi, 2018; 2021) we can state that the Z'-Score model shows the previously mentioned limits, while the Z"-Score seems to show results more consistent with the situation of the considered companies, although an active company is not necessarily considered "healthy": there could in fact be a situation of insolvency that has not been externalized and therefore not included in the databases (Altman, 2018). Therefore, the Z"-Score shows that 78% of companies that have adopted ethical behaviours (renewed or attributed LR) in 2021 and in the two previous years, are to be considered in a situation of minimum risk of bankruptcy. On the other hand, a greater number of companies should have a financial situation close to the "Safe zone". These results could be explained by two reasons: inefficiency of Altman's model in understanding the financial situation of a company (Italian in this case); unethical behaviour by managers who conceal situations of insolvency by tampering with items in the financial statements (which represent the fundamental elements for the Z-Score calculation).

4. 3. Bankruptcy risk and legality rating

Taking into account the already present literature on the subject (Caputo & Pizzi, 2018; 2020; Doni, 2022) and in order to demonstrate an inverse correlation between the adoption of the “legality rating” and the increase of firms bankruptcy risk, the second methodological step of our research concerns the comparison between the Z-Score trends of “rated” companies and that of “unrated” ones in the 2018-2021 period. The choice of this period makes it possible to analyze the trend of the bankruptcy risk and therefore the impact that the rating has had on this measure over time. This step therefore aims to demonstrate how the ethical commitment of a company can positively influence financial performance and decrease the risk of bankruptcy over time. Z'-Score and Z"-Score values for “rated” firms are shown in Table 4.

Table 4: Z’-Score and Z’’-Score values for rated firms

Z' - Score	2020	2019	2018	Z'' - Score	2020	2019	2018
Sample (n.)	100	100	100	Sample (n.)	100	100	100
Z' < 1,23 - "Distress" Zone	15%	22%	18%	Z'' < 4,5 - "Distress" Zone	10%	13%	10%
1,23 < Z' < 2,99 - "Grey" Zone	49%	51%	42%	4,75 < Z'' < 5,85 - "Grey" Zone	19%	20%	25%
Z' > 2,99 - "Safe" Zone	36%	27%	40%	Z'' > 6,25 - "Safe" Zone	71%	67%	65%

Source: our processing

The results of multiple discriminant analysis confirm the inefficiency of the Z'-Score in correctly classifying the companies in the (probable) area of origin; the Z"-Score, on the other hand, shows a growth in rated companies classified in the "Safe zone". The companies being first analyzed are all holders of LR. The analysis therefore shows that from 2018 to 2021 there is a negative correlation between the possession of a rating and an increase in the risk of bankruptcy. In fact, most of the companies that have adopted strategies based on ethics and legality, thus following the discipline of the European and national legislators, have seen their financial profile improved with a consequent decrease over the years in the risk of insolvency. More information is contained in the following Table 5.

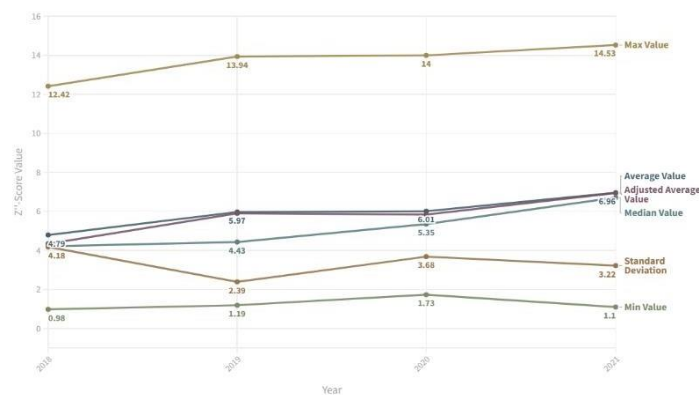
Table 5: Z’’-Score values

Z'' - Score	2020	2019	2018
Sample (n.)	100	100	100
Average Value	6,01	5,98	4,79
Max Value	14,01	13,94	12,43
Min Value	1,74	1,19	0,98
Adjusted Average Value	5,84	5,90	4,35
Median Value	5,35	4,43	4,21
St. Dev.	3,69	2,40	4,18

Source: our processing

Figure 4 graphically expresses the trend of the values: the average value increases from 4.79 to 6.01. The same trend occurs for the maximum and minimum values and for the median. All values appear to be included in the zone of “tranquillity”.

Figure 4: Z’’-Score graphical trend for rated firms



Source: our processing

To complete the analysis, the trend of two variables considered significant for the financial solidity of companies with legality rating (Caputo & Pizzi, 2018), namely DEBT / EQUITY ratio (Benlemlih, 2017) and LIQUIDITY RATIO (Kim and Im, 2017; Yilmaz, 2016; Caputo & Pizzi, 2018). The analysis shows how the introduction of the legality rating corresponds to a general improvement in company performance according to these two perspectives. Our work also added the analysis of the trend of the first variable present in the Z''-Score formula, namely NWC/TA ratio.

This ratio represents the first variable considered by Altman in his model (Altman, 1968; Altman, 1993; Altman, 1995), and it can be considered as the percentage of working capital to company total assets. It represents how strong the company's financial health is regarding the liquidation and shows the management risk tolerance toward the investment opportunity and risk of liquidation. The calculation is: current asset minus current liabilities divided by total assets. In this work, we multiplied the ratio result by 100 in order to arrive at the final ratio. A positive NWC means that a company could have the potential to invest in expansion and grow the company; if current assets do not exceed its current liabilities, then it may have trouble growing or paying back creditors and it might even go bankrupt. Net working capital (NWC) also represents the resources able to be used to cover expenses in the event of an unexpected negative occurrence (Sedláček, 2011). It can also be said that it represents resources that generate company's revenue and it has a positive correlation with the CSR activities undertaken by companies (Myskova & Hajek, 2019). Table 6 confirms the positive trend of the ratio in the considered period and therefore an improvement in the financial situation of the companies in the sample following the LR request and adoption[2].

Table 6: NWC/TA ratio trend

NWC/TA	2021	2020	2019	2018
Sample (n.)	100	100	100	100
Average Value	27,45%	19,22%	23,19%	24,83%
Max Value	55,00%	46,13%	50,01%	48,40%
Min Value	-32,00%	-44,60%	-29,30%	-32,67%

Source: our processing

4. 4. Control sample of "unrated" firms: results

In order to confirm the previous results and therefore confirm an inverse correlation between the adoption of the legality rating and an increase in the risk of bankruptcy, our study used a control sample of 100 service companies with structural, financial and organizational characteristics comparable to those in the main sample. We proceeded by calculating the Z'-Score and the Z''-Score in order to verify whether companies potentially holding LR had similar or different financial performances compared to "rated" companies. Results are shown in Table 7.

[2] There is no optimal level of Net Working Capital to Total Assets for every company. It depends on the company operation, type of business, level of risk, and management behaviour toward risk. However, much of the literature presents reference values for the US manufacturing sector (Taffler, 1982; Alkhatib et al., 2011). Given the lack of such indications for the Italian case, we considered these values as a benchmark for our study. The average results of the study are positioned in the "Satisfactory" area of significance (Alkhatib et al., 2011).

Table 7: Z'-Score and Z''-Score values for unrated firms

Z' - Score - unrated	2021	2020	2019	2018	Z'' - Score - unrated	2021	2020	2019	2018
Sample (n.)	100	100	100	100	Sample (n.)	100	100	100	100
Z' < 1,23 - "Distress" Zone	35%	23%	20%	19%	Z'' < 4,5 - "Distress" Zone	20%	14%	14%	20%
1,23 < Z' < 2,99 - "Grey" Zone	30%	40%	39%	42%	4,75 < Z'' < 5,85 - "Grey" Zone	36%	32%	25%	18%
Z' > 2,99 - "Safe" Zone	35%	37%	41%	39%	Z'' > 6,25 - "Safe" Zone	44%	54%	61%	62%

Source: our processing

Table 7 shows how "unrated" companies show a decreasing trend with respect to companies attributable to the "Safe zone". This is particularly evident in the case of the Z"-Score, indicated as the most effective model in understanding the financial situation of Italian companies (Altman, 2015; Danovi & Falini, 2018). The decreasing trend also regards the NWC/TA ratio and the DEBT/EQUITY ratio. The sample of companies without a legality rating therefore, despite having suitable characteristics for accessing this CSR tool, are characterized by a deterioration of their financial situation in the period from 2018 to 2021. In particular, the decrease is recorded since 2019, the year of the outbreak of the covid-19 pandemic. Therefore, companies with LR may have had greater resilience thanks to the benefits deriving from the adoption of the rating itself, with a consequent reduction in the risk of insolvency and an improvement in company liquidity indicators.

5. Discussion

5. 1. Results and conclusion

CSR today represents, in the European panorama, a fundamental paradigm for the creation of corporate value and for regulating the relationship between business and stakeholders. The European Commission, since the beginning of the 2000s, has highlighted important innovations in this area, through opinions and Directives addressed to companies operating in various economic sectors. After the 2011 CSR Commission strategy, the Commission also drafted a document which highlighted the progress made in Europe regarding the promotion of CSR and the protection of human rights and environmental sustainability. The main advances concern:

- incentives for businesses to act in compliance with the rights and needs of stakeholders;

- encouragement to carry out appropriate due diligence along the supply chain, including with respect to the human rights' protection;

- greater financial transparency and promotion of sustainable and ethical finance;

- implementation of good practices and CSR tools suitable for ensuring efficient business management.

In Italy, since 2012, and with appropriate modifications since 2014, the so-called "legality rating" has been introduced, which represents the possession of high standards of compliance with the law and social responsibility with important requirements and implications from a financial point of view. So, following a critical and in some ways exploratory perspective, the first part of our analysis evaluated the relationship between the introduction of the legality rating and service companies' financial performance from the point of view of correctness and effective implementation of the measure in the Italian corporate landscape. The multiple discriminant analysis, and in particular the application of some versions of Altman Z-Score, confirmed that out of a sample of 100 "rated" companies (and therefore virtuous also from a

financial point of view) the rating was correctly received by 78% of the sample. For the remainder, the Z-Score and the analysis of debt and liquidity indices showed a situation of medium/high probability of insolvency, therefore incompatible with the requirements established by the Italian legislation about LR.

The second step, in order to confirm the effectiveness of the Italian CSR tool, and in order to confirm a negative correlation between the introduction/renewal of the rating and the increase in the insolvency risk, has demonstrated how the ethical commitment of a company can positively influence financial performance and decrease the risk of bankruptcy over time. Our study used a control sample of 100 “unrated” service companies with structural, financial and organizational characteristics comparable to those in the main sample. The analysis shows how the introduction of the “legality rating” corresponds to a general improvement in company performance according to bankruptcy risk, liquidity and debt ratios. Also considering the trend of the Z-Score in the outbreak period of the covid-19 pandemic, companies with LR had greater resilience with a consequent reduction in the risk of insolvency and an improvement in company liquidity indicators. The companies in the control sample, which therefore have not yet adopted an organizational structure capable of guaranteeing stability and of suddenly preventing crises, however, have been subject to more or less serious variations in their indices, which have led to a constant degradation of their performance financial. As highlighted by the above results, the “legality rating” is an effective and important driver in the context of the different dynamics concerning the financial and economic situation of companies. However, in some areas of Europe, and in particular in Italy, the CSR area is not yet "mature”, and some companies did not communicate their information, with the consequent impossibility of evaluating their performance considering social and financial variables.

The results of the study, however, lay the foundations for future and more in-depth analyses of the case, and confirm a negative correlation between rating presence and bankruptcy risk increase for Italian companies. Therefore, in addition to financial advantages, an improvement in one's position on the market and in the conditions of access to credit, the “legality rating” performs an important reputational function, even in the face of a demand that is ever more attentive to the ethical profiles of companies. Furthermore, the rating seems to be an important discriminant in the choice of commercial partners and its attribution/renewal means strongly strengthening the G parameter of governance. The attention of companies towards CSR issues and the results of this work about corporate bankruptcy risk also seem to affirm that the rating represents a fundamental element of compliance with the new text of art. 2086 c.c. in terms of organizational structure suitable for preventing corporate crises. Finally, this Italian CSR-related tool allows companies operating in the service sector to improve their performance by pursuing goals of excellence and efficiency.

5. 2. Research limits

The main limitation of this research could be the low statistical significance of the sample, closely connected with the unclear and incomplete data offered by the AGCM regarding the assigned ratings. AGCM, in fact, only offers databases updated to the latest award/renewal decision. For in-depth analysis, therefore, it is up to companies to offer information and details regarding their rating. However, CSR and ESG issues are still not very “mature” in Italy, and disclosure in this area is still minimal. A further limitation concerns the inefficiencies of Altman's Z-Score in reading the financial situation of some companies. This could lead to biased results. To solve these problems, it would be advisable to implement, in future research, modifications of the Altman formula considering CSR-affine.

5. 3. Developments and managerial implications

The possible developments of the research involve considering a statistically significant sample of companies on which to test the validity of the Altman's model and on which to find any critical elements related to adoption of "legality rating". It will be useful to combine multivariate analysis with a statistical model capable of refining the results and avoiding errors. This exploratory research, therefore, lays the foundations for a line of studies that is currently very interesting and offers food for thought for the academic world and management, which are, today, increasingly attentive to CSR-related issues. The results and considerations of this work can also offer new points of view and new ideas that are useful for comparing the results of different CSR-related tool at European level.

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