



# Corporate Financial Distress: A Roadmap of the Academic Literature Concerning its Definition and Tools of Evaluation

**Abstract** Global financial crises have emphasized the importance of understanding current and future corporate financial states. A literature review about financial distress permits us to define it independently from the financial nature of its causes: companies may also face financial distress as a consequence of non-financial factors characterizing its starting point. After this initial step, a firm may either recover its financial situation (temporary distress) or embark on a failure path (severe financial distress). Both these cases may correspond to either a no tort or a fraud (either disclosed or undetected). The cases examined here are also relevant for understanding the passage of the focus of academic debate from prediction to explanation in order to minutely examine how companies mutate from successful into distressed ones.

**Keywords** Auditors • Bankruptcy • Corporate financial distress • Failure prediction • Undetected fraud

## 2.1 FINANCIAL DISTRESS: DEFINITION AND MAIN FEATURES

Since first devoting its attention to the subject, academic literature has emphasized the *difficulties in defining* corporate financial distress because of the incomplete and arbitrary nature of any criteria by which to classify

it (Keasey and Watson 1991). There is no consensus on how financial distress affects corporate performance, but it is costly (Opler and Titman 1994) and needs to be investigated. Altman (1993) relates corporate financial distress to unsuccessful business enterprise and defines four generic terms that are commonly used in the literature about it: failure, insolvency, bankruptcy, and default.<sup>1</sup> Corporate financial distress remains, none the less, a vague term (Altman and Hotchkiss 2006) that does not correspond to an absolute condition such as bankruptcy or insolvency (Sun et al. 2016). This chapter aims at shedding some light on the matter.

Corporate financial distress identifies a status that is extended in time, *embracing the failure path* and (both possibly and ultimately) the event of bankruptcy. Default prediction literature has traditionally been focused on highly visible legal events that characterize the end of a firm's life cycle and that can be objectively and accurately dated. On the one hand, such events can be precisely defined and identified. Bankruptcy constitutes an everyday example of a legal event characterizing the end of a firm life cycle. Its likelihood can be represented using binary choice models where the populations of failing and non-failing firms are separated from each other in a precise (and therefore artificial) way on the basis of a specifically chosen time period (Altman and Eisenbeis 1978; Balcaen and Ooghe 2006; Ooghe and Verbaere 1985; Ooghe and Joos 1990; Ooghe et al. 1995;

<sup>1</sup>These four terms (i.e. failure, insolvency, default, and bankruptcy) are sometimes used interchangeably even though they have distinct formal usages (Altman 1993; Altman and Hotchkiss 2006, 2010).

*Failure* has been defined as the persistent lower value of the realized rate of return on invested capital than the same rate on equivalent investments.

*Insolvency*, and in particular "technical insolvency", is a term referring to the status in which unsuccessful firms are unable to meet their current liabilities. This status could be a temporary one but it can be immediately transformed into the reason for declaring bankruptcy. If the status is chronic instead of temporary, it is defined as "insolvency in the bankruptcy sense". In this case the evaluation concerns the total liabilities on a fair valuation of the total assets in which the liabilities assume higher value than the total assets.

Another term concerning a firm's distress condition is *default*. It can be technical and/or legal. The technical default refers to the condition in which the debtor firm violates a condition of an agreement. Consequently, the status evolves in legal default when the creditor takes legal action against the debtor. However, legal default is rare since a renegotiation is often adopted with the agreement of the two firms.

Finally, *bankruptcy* refers to the condition in which the firm is declared bankrupt in a federal district court through a petition aiming to liquidate its assets (Chap. 7) or trying to implement a recovery programme (Chap. 11) in the US context.

Frydman et al. 1985; Theodossiou et al. 1996; Blocher et al. 1999). On the other hand (and more pertinently to this work), such a legal event does not sufficiently represent the *real-economic complexity* of corporate paths through financial distress. For instance, if an unsuccessful firm passes through a lengthy failing process, there will be a considerable time gap between the period that a firm enters a state of financial distress and the possible final event of legal bankruptcy (Balcaen and Ooghe 2006). The consideration of financial distress as a path (instead of an event) appears more complex to precisely define and categorize, but closer to the reality because it does not consider only the legal date of a final event. This consideration requires us to identify and date different steps in the corporate process characterized by financial distress: extension in time makes it a sequence of steps instead of a single freeze-frame event (Agostini 2013). In this way, financial distress becomes a *dynamic process* where the majority of distressed firms do not actually become bankrupt.

Recognition of the fact that corporate failure does not lead inevitably to a filing for bankruptcy has been gaining ground in academic literature and has been the essential premise for the evolution of the definition of financial distress after the initial contributions to the topic (Jones 1987; Gilbert et al. 1990; Flagg et al. 1991; Barnes 1987; Barnes 1990). Both academic and practitioners' studies try to move from *ex post* models to *ex ante approaches* while remaining based on financial symptoms of corporate distress. These newer approaches adopt financial criteria based on corporate failure to meet financial obligations and consider a firm as financially distressed not only when it files for bankruptcy (Wruck 1990; Asquith et al. 1994; Andrade and Kaplan 1998; Whitaker 1999; Sanz and Ayca 2006). Flagg et al. (1991) were among the first to consider a sample of exclusively distressed firms and identify four events (i.e. reductions in dividends, "going concern" qualified opinions, troubled debt restructurings, and violations of debt covenants) signalling that a firm is experiencing financial distress. Chen et al. (1995) were then among the first to define distress as the condition where a firm's liquidation of total assets is less than the total value of creditor claims. If prolonged, this situation can lead to forced liquidation or bankruptcy; for this reason, financial distress is often referred to as the likelihood of bankruptcy, which is dependent on the availability of liquidity and credit (Hendel 1996). Pindado et al. (2008) introduces a dynamic proxy of corporate financial distress that is independent of the (final) outcome (e.g. bankruptcy) while still based only on financial symptoms. This approach classifies a company as financially distressed whenever

its operational cash flows are lower than financial expenses and market value persistently falls. Focusing on the early stages of financial distress, rather than predicting an eventual bankruptcy, has progressively become a prime concern of the academic literature.

The role of *time extension* is a significant recognition (Balcaen and Ooghe 2006), but still represents only a first step forward for defining corporate financial distress. Such distress implies a lengthened pathological condition for firms in which the term “financial” describes its main consequences. Therefore, corporate financial distress can be defined as a negative lasting situation during which a firm experiences bad financial conditions such as low liquidity, inability to pay debts, restriction on dividend distribution policy, increase in the cost of capital, reduction in access to external funding sources, and weaker credit ratings. Academic literature provides several examples of such *financial consequences* represented as negative (financial) accounting items, and these have been used as criteria in financial distress definitions. The most frequent examples are several years of negative net operating income, suspension of dividend payments, major restructuring or layoffs (Platt and Platt 2002), low interest coverage ratio, negative earnings before interest and taxes (EBIT), negative net income before special items, losses, selling shares to private investors, successive years of negative shareholders’ funds or accumulated losses (McLeay and Omar 2000), an increase in the cost of capital, a reduction in access to external funding sources, and weaker credit ratings. The negative consequences deriving from financial distress can be also differentiated according to *the stage of enterprise life cycle*. According to life cycle theory, growing capacity, access to resources, and strategies vary during a firm’s life cycle (Anthony and Ramesh 1992), which consists of four stages: birth, growth, maturity, and decline. In the early stages of its growth, firms are typically small, dominated by their owners (entrepreneurs), simple, informal in structure, undifferentiated, and with highly centralized power systems and considerable focus on innovation (Miller and Friesen 1984). Inevitably, these firms face significant uncertainty over future growth, which is manifested in higher book-to-market ratios and greater firm-specific risk (Pastor and Veronesi 2003). Corporate financial distress in the birth stage is usually related to deficiency of liquidity or cash flow difficulty (Spence 1977, 1979, 1981; Jenkins et al. 2004; Hasan et al. 2015). In the second stage, as the name suggests (i.e. growing period), firms may achieve rapid growth, acquire new (multiple) shareholders, and gain separation between ownership and control with

managers assuming more decision-making responsibility (Miller and Friesen 1984; Mueller 1972). In the growing period, corporate financial distress is usually related to excessive financial leverage because of the perceived need to expand capital. In the last stages of the enterprise life cycle, firms are less prone to innovation and risky strategies than in their birth and growth stages. In particular, mature firms aim for the smooth functioning of the business in a well-defined market (Miller and Friesen 1984), while firms in decline aim to collect as much revenue from existing operations as possible (Thietart and Vivas 1984), in the face of encroaching stagnation and low profitability (Miller and Friesen 1984). This focus on enterprise life cycle confirms that corporate conditions measured through financial accounting items are contingent on different firms' features and behaviours at different stages.

According to life cycle theory, *corrective measures and restructuring strategies* adopted by firms facing corporate financial distress can also be of different types and may be conditioned by the firm's stage in the corporate life cycle (Koh et al. 2015). Indeed, while some strategies have an association with recovery for all firms regardless of where they are in the life cycle (such as reducing investment and dividends), there is some evidence concerning the interaction of life cycle and the choice of other specific restructuring strategies. For instance, firms facing corporate financial distress in the earlier stages of their life cycle have a tendency to reduce their employees, while mature distressed firms are more likely to engage in asset restructuring. Koh et al. (2015) invite companies facing financial distress to adopt at least (and ideally not more than) three strategies to attempt recovery. In any case, there is no guarantee that the implemented strategies will be effective in rescuing the firm from financial distress, not least because of potentially inappropriate managerial reactions to signals that a firm is experiencing distress. In particular, such negative persisting conditions and their possible consequences may increase managers' propensity to *take on more risk*. For instance, Edwards et al. (2013) emphasize the increase in managers' disposition to seek additional cash in order to finance corporate existing operations and improve corporate solvency—an increase related to the possible emergence of the consequences of financial distress and to an ultimate attempt to forestall (sometimes to hide) unfavourable signals. These are considered deeply discrediting for top management's image: an organization's poor performance implies that its leader is not competent and unable to achieve organizational success (Sutton and Callahan 1987). These negative feelings both threaten managerial careers

and increase the probability of organizational demise. They worsen corporate financial distress with the consequence that financial distress can become seriously costly for *several parties*, especially for creditors. Since the initial focus on corporate financial distress, academic research has emphasized the conflicts of interest between borrowers and lenders (Jensen and Meckling 1976; Myers 1977; Stulz 1990), between firms and their non-financial stakeholders (Baxter 1967; Titman 1984; Maksimovic and Titman 1991), and between shareholders and managers (Gilson and Vetsuypens 1993; Novaes and Zingales 1993). Corporate financial distress creates a tendency for firms to do things that are harmful to several parties, impairing access to credit and raising the cost of stakeholder relationships (Opler and Titman 1994). Studies of corporate distress have mostly focused on these financial consequences because they represent signals of firms' lasting negative states. Samples of firms that might be considered to be in distress have been created by examination of various markers: Lau (1987) and Hill et al. (1996) use layoffs, restructurings, or missed dividend payments; Asquith et al. (1994) allow an interest coverage ratio to define distress; similarly, Whitaker (1999) measures distress as the first year in which cash flow is less than current maturities of long-term debt; and John et al. (1992) let the change in equity price define distress. The problem with these indicators is that some companies displaying these signals may not actually be in distress. Layoffs may occur in specific divisions of otherwise healthy enterprises, restructurings may occur at different stages of decline, and there are many explanations for missed dividend payments (Platt and Platt 2002). Academic default literature generally focuses on financial signals and symptoms (Beynon and Peel 2001; Dimitras et al. 1999; Ooghe et al. 1995; Pompe and Bilderbeek 2005), but it examines only a limited number of non-financial causes and specific types of enterprises (Ooghe and De Prijcker 2008; Everett and Watson 1998; Charan et al. 2002; Hambrick and D'Aveni 1992). It typically emphasizes the scarce availability of financial resources, but it does not explore alternative *causes* to such financial factors. Indeed, firms may enter financial distress as the result of economic distress, a decline in the firm's industry as a whole, poor management (Wruck 1990), and/or other reasons. Financial distress may be the result of both internal and external factors bearing on the enterprise. Companies may also face financial distress as a consequence of non-financial factors (Sun and Li 2011). This also explains why different corrective measures may be required in order to exit the distressed status. Financial consequences of corporate distress may also derive from

non-financial factors, but the symptoms of such distress only become evident from a firm's solvency and financial conditions.

Such distress includes various conditions, such as low liquidity, inability to pay debts or dividend of preference stock, substantial and continual reduction in profitability, and bankruptcy. These conditions indicate financial distress from mild to serious in sequence. Financial distress is the synthetic reflection of deterioration of inner and outside risky factors of an enterprise. Even enterprise distress caused by non-financial factors tends to end up with financial distress (Sun and Li 2011, p. 2566).

Non-financial outside risky factors are, for instance, related to macroeconomic variables and to risk transfer along the supply chain. The transfer of financial distress risk from customers to suppliers is a hot matter of discussion in academic debate. It is particularly evident when distressed major customers influence their suppliers' financial distress in addition to the accounting- and market-based situation of the firm itself. Because of a linked firm's financial distress, rivals, customers, and suppliers can suffer feedback effects. Such reactive consequences have traditionally been examined only in relation to bankruptcy, starting from Lang and Stulz's work (1992). This investigates the effects of bankruptcy announcements (Chapter 11 filings) on the equity value of a firm's competitors. Such effects can be either positive (i.e. "competitive effects") or negative ("contagion effects"): on average, industry rivals suffer contagion effects around the time that a competitor files for bankruptcy. Several studies have been devoted to bankruptcy and its intra-industry contagion effects (Ferris et al. 1997; Hertzels and Smith 1993; Kang and Stulz 2000; Slovin et al. 1999). More recently, the analysis of such effects has also focused on distressed companies, suggesting that financial distress has broad, even economy-wide effects. In particular, Hertzels et al. (2008) highlight significant pre-filing and filing-date contagion effects affecting industry rivals and extending beyond industry competitors along the supply chain to suppliers of the filing firms. "In discussions of the trade-off theory, the actions of suppliers and customers of firms in distress are often cited as a source of indirect costs that can arise with impending bankruptcy. Suppliers can impose costs on distressed firms by failing to supply trade credit, backing away from entering into long-term contracts, or delaying shipments. Customers, wary of product quality, reduced value of warranties, continuity of supply, and serviceability, impose costs by shifting purchases to

existing and/or new suppliers” (Hertzel et al. 2008, p. 375). Because of contagion effects, there can be the shift from corporate financial distress (which is firm-specific distress) to economic distress that is industry-wide. Moreover, suppliers’ contagion effects are more severe when the intra-industry competitors of the filing firm also suffer contagion. More recently, Kolay et al. (2016) studied the nature of “spillover effects” of corporate financial distress on rivals, suppliers, and customers. Finally, Lian (2017) focuses on whether and how risks transfer along the supply chain, specifically examining the impact of distressed major customers on the probability of suppliers’ financial distress in the future. Corporate financial distress down the line may thus originate because of such contagion effects: its causes may be of various types and not only financial factors.

An impediment in the widespread dissemination of research about corporate financial distress is the lack of a precise categorization of such causes and a consistent definition of *when companies enter such paths*. This has been collocated in a “grey area”, that is, the area of overlap or indecisive area that separates surviving from risky firms (Cybinski 2001). Thus, corporate financial distress represents a continuum to be investigated with predominantly explanatory objectives aimed at detecting signals of a firm’s deteriorating condition over time. This “grey area” is particularly difficult to classify, but it is also of particular interest. The analysis requires a comparison of each distressed firm with itself over time, to understand how firms transform from successful ones into failed ones. Thus, the identification of the beginning of the stage of corporate distress requires the analysis of its causes. This emphasizes the association between financial distress and *ERM*, that is, Enterprise Risk Management (Hoyt and Liebenberg 2011; Beasley et al. 2015). The most widely accepted ERM framework has been developed by COSO (2004) and defines ERM as follows: “Enterprise risk management is a process, effected by an entity’s board of directors, management and other personnel, applied in a strategy setting and across the enterprise, designed to identify potential events that may affect the entity, and manage risk to be within its risk appetite, to provide reasonable assurance regarding the achievement of the entity’s objectives.” The global financial crisis that began in 2008 emphasized the shortcomings of existing risk management practices and stressed the importance of the concept of financial distress that becomes central for ERM (Cohen et al. 2017; Asare et al. 2012; Baxter et al. 2013; Kaplan and Mikes 2013). Companies in financial distress have lower-quality ERM programmes, probably due to resource constraints inhibiting the investment necessary for effective ERM



(Baxter et al. 2013). This also contributes to explaining the lack of focus on the causes of corporate financial distress. Only a focus on such causes will allow us to adopt an *ex ante* approach (Pindado et al. 2008) that can be applied regardless of financial consequences and final outcome (e.g. bankruptcy).

Summarizing, this paragraph suggests that corporate financial distress is an extended pathological condition whose financial consequences have been explored in depth by academic studies. Recent contributions differentiate its symptoms and the corrective measures according to the stage of the enterprise life cycle. On the other hand, the analysis of its causes is more difficult because these may be of different types (including non-financial factors). This has been recently emphasized by studies investigating the association between corporate financial distress and ERM. The main problem seems to be related to the lack of a consistent definition of exactly when companies embark on a path of financial distress. From a temporal point of view, corporate financial distress may prove an ongoing condition that could include a failure path and (both possibly and ultimately) bankruptcy.

## 2.2 FINANCIAL DISTRESS AND CORPORATE FAILURE

Traditionally, academic research has focused on corporate failure, making it coincident with bankruptcy for predicting purposes. As recalled in the previous paragraph, recent authoritative literature (Altman and Hotchkiss 2006) states that corporate financial distress is still a vague term that can be related to four other generic terms: failure, insolvency, bankruptcy, and default. This implies a continuing degree of uncertainty about its analysis. This paragraph starts by considering bankruptcy in order to distinguish it from corporate failure and financial distress. All three phenomena will be investigated in order to emphasize both their common features and their differences.

Failure and bankruptcy have for a long time been considered interchangeable terms, defining the first as receivership, voluntary liquidation (creditors), winding up by court order, or equivalent (Taffler 1982). The same has been done for corporate financial distress considering that, within a given year, a firm is financially distressed if it is in default on its debt, bankrupt, or privately restructuring its debt to avoid bankruptcy (Gilson 1989). Progressively, the status of unsuccessful firms has been more precisely categorized to determine what financial state category each firm falls

into, from least to most distressed (Lau 1987). This has led to the recognition that there are several stages that a firm can go through before it is defined as dead, such as financial distress, insolvency, filing for bankruptcy, and administrative receivership to avoid filing for bankruptcy (Wruck 1990). Consideration of the *time variable* has shown that firms tend to stop providing accounts some years before the bankruptcy filing (Theodossiou 1993). The implication is that such firms are already in serious financial distress at some point before the legal bankruptcy event. In this way bankruptcy has been identified as a legal event precisely dated in time. This explains why there is abundant literature describing prediction models of corporate bankruptcy. It is an event that is definitive and clearly identifiable. For instance, in the US context, firms are considered bankrupt when a petition is filed under either Chap. 11 or Chap. 7 of the US Bankruptcy Code. However, under Chap. 11, a firm's impaired debts are replaced by new financial claims, on the assumption that the firm will be reorganized; under Chap. 7, the firm is liquidated.<sup>2</sup> As an alternative to the formal court-supervised bankruptcy process, firms and their creditors can also privately agree to restructure troubled debt.

Starting from these premises, Platt and Platt (2002) underline that financial distress is a late stage of corporate decline that precedes more cataclysmic events such as bankruptcy or liquidation. Therefore, bankruptcy is a legal event that corresponds to a specific type of default. It is only one possibility of macro-failure, that is, the last stage of a firm's life cycle that represents an important type of discontinuance, requiring a defensive reaction (i.e. a *radical change*) in the firm that wants to survive (Agostini 2013). Moreover, it represents a more limited concept than financial distress (Pindado et al. 2008). While bankruptcy is an event precisely dated in time, failure and financial distress represent corporate paths that are extended in time. Both these paths precede the possible eventual bankruptcy. Few researchers have explicitly analysed corporate failure as a process (Ooghe and De Prijcker 2008) even after the recognition that it cannot be connected to a well-defined dichotomous variable. The oldest and most well-known exception is Argenti (1976), relating non-financial failure causes with financial indicators within three different failure pro-

<sup>2</sup>There are also other alternative chapters of the US Bankruptcy Code, which are not considered here (given also the specific sample analysed in the third chapter). Indeed, the Bankruptcy Reform Act of 1978 was divided into four titles and the first title (known as "the code") was divided into eight chapters: 1, 3, 5, 7, 9, 11, 13, 15. The Bankruptcy Reform Act of 1978 has been amended several times since, with the most significant recent changes enacted in 2005 through BAPCPA 2005.

cesses. Altman (1984) is among the first to emphasize that the failure to meet financial obligations does not necessarily lead to bankruptcy.

The analysis of corporate financial distress is of more recent vintage, although academic literature has emphasized for some time the need to monitor corporate financial distress in ways that do not necessarily entail the prediction of the event of bankruptcy (Barnes 1987, 1990). The lack of work on this matter is in part related to the difficulty in defining objectively the onset of financial distress. By contrast, the bankruptcy date is definitive and financial data prior to that date are reasonably accessible. Because of the indeterminacy of when a firm becomes financially distressed, most research that purports to study financial distress instead examines the terminal date associated with the company's filing for bankruptcy protection (Platt and Platt 2002). So, a common feature between corporate failure and financial distress regards *the extension in time*. They are often considered synonyms because they both stress a continuous difficulty in being able to meet liabilities as they became due and are the sources of a costly process which can be overcome by restructuring and do not (necessarily) imply bankruptcy (Keasey et al. 2015). There is still a degree of confusion in the academic literature about the common traits, and more especially the differences, between the concepts of financial distress and failure. Platt and Platt (2002) emphasize that the distress stage of companies is serious but not fatal. They specify that the given description is inexact, including companies whose troubles exceed the early-stage symptoms of negative EBIT, net income, or cash flow. They focus on the financial symptoms experienced by distressed companies that have had trouble paying their own suppliers, have missed payments to their bank, or may have difficulty servicing the next payroll. Further, most have sustained net losses for several years or have suspended dividend payments in an effort to marshal financial resources to deal with operational or debt-related problems. In the absence of intervention, it is likely that most, if not all, of these firms would eventually move on to failure and file for bankruptcy protection. But firms may either fail or experience some other less severe form of financial distress. There is some evidence that firms experiencing less severe forms of financial distress can be distinguished from failed firms. Koh et al. (2015) measure financial distress according to firm's distance-to-default: a falling distance corresponds to default; an increasing distance indicates that firms are less likely to default or that they are recovering.

Starting from these premises, in the present work corporate financial distress is considered a *lasting negative corporate status that precedes in*

*time the beginning of the failing path.* Indeed, after experiencing financial distress, a firm may either recover or enter the failing path that will ultimately imply a macro-failure such as the event of bankruptcy. So, the temporal dimension distinguishes the event of bankruptcy from the paths of corporate financial distress and failure. These are not synonyms because of their *possible different outcomes*: recovery is possible only after corporate financial distress, while only macro-failure characterizes the end of a failing path. Academic and practitioners' studies agree about the importance of focusing on corporate financial distress, which starts before failure, but it is difficult to identify the point at which a firm becomes distressed. *The starting point* of corporate financial distress is the stage of not meeting certain objectives due to enterprise actions or inactions that impact on profit (because of sales and expenses variations) which is liable to cause financial consequences in terms of solvency and liquidity (because of debt and cash flow variations). Its identification requires in-depth knowledge of the specific company and great attention towards "special signals" that can be of various types (not only financial) as listed and explained in this paragraph. Academic research that underlines non-financial factors as causes of default is very fragmented (e.g. Baum and Mezias 1992; Daily and Dalton 1995; Greening and Johnson 1996; Swaminathan 1996). Despite this fragmentation, most studies relate corporate default to managerial errors. Altman and Hotchkiss (2010) emphasize that firms fail for a multiplicity of reasons, but managerial inadequacies represent the core of corporate problems in most of the cases. Ooghe and De Prijcker (2008) implement a case study research based on companies of different industries, sizes, and ages that, in the end, fall into bankruptcy. They identify four different types of failure processes and, for each process, provide a detailed overview of the direct and indirect effects of non-financial and financial causes. Their work emphasizes that precise identification of causes and initial stages of corporate financial distress require in-depth investigation and the acquisition of knowledge about the specific corporate case through a qualitative method (such as case study research) to explain factors, signals, and symptoms. This approach has been applied for the identification and examination of firms' actions (or inactions) and *the consequent missed objectives*, known as micro-failures (Agostini 2013). If a micro-failure occurs, a set business objective has become unattainable and the firm is experiencing a situation of financial distress. As the name emphasizes, this will have financial consequences in terms of liquidity because of variations in debt and cash flow. Great attention should therefore be paid to different types of micro-failures that are not atypical (Agostini 2013) and can be categorized

according to the traditional clusters considered in the academic literature (Argenti 1976; Altman 1993). Several examples of micro-failures can be related to product/market, financial, managerial/key employee, cultural/social, and accidental problems (Table 2.1). There may then be both financial and non-financial factors as anticipated above.

**Table 2.1** Micro-failure examples categorized according to the traditional clusters

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<i>A. Product/market problems</i>	
A1.	Competition and/or competitors with significantly greater financial resources than the company
A2.	Customers' criticism because of goods quality (either too expensive or too low quality)
A3.	Depressed industry and market downturn
A4.	New and stricter industry regulations
A5.	Seasonal business
<i>B. Financial problems</i>	
B1.	Excessive costs and/or additional and non-essential expenses
B2.	Excessive indebtedness and difficulty in obtaining new financing
B3.	Investors' nervousness, bad relationship with the venture capitalists, and/or creditors' pressure
B4.	Negative economic/financial trends (primarily a decrease in revenues)
B5.	Relationship of strong financial dependence on other player(s) (suppliers, customers, ...)
B6.	Unprofitable ventures (e.g. acquisition of unprofitable divisions)
<i>C. Managerial/key employee problems</i>	
C1.	Conflicts of interest
C2.	Core business abandonment and diversification into other industries
C3.	Excessive anxiety to keep up with increasingly large competitors
C4.	Important decisions made without obtaining board approval
C5.	Legal, apparently correct but improper (e.g. deficit analytical) accountancy
C6.	Poor management and disengaged board
C7.	Principals' legal problems unconnected with the firm
C8.	Private benefits (withdrawals, bonuses, and compensation policy)
C9.	Too aggressive growth and expansion strategy (i.e. rapid growth through mergers or other operations proving unsustainable in the long run)
C10.	Too ambitious objectives and anxiety to hit "must make" figures (i.e. earnings targets)
C11.	Mistaken operations (because of riskiness or other reasons)
<i>D. Cultural/social factors</i>	
D1.	Corruption
D2.	Discrimination problems
D3.	Powerful enemies
<i>E. Accidental factors</i>	
E1.	Calamities

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**Table 2.2** Schematization of six cases of corporate financial distress

		<i>Corporate financial distress</i>	
		<i>Temporary</i>	<i>Severe</i>
<i>Presentation in financial statements</i>	<i>True and fair</i>	Case 1	Case 3
	<i>Disclosed fraud</i>	Case 5 <sup>a</sup>	Case 4
	<i>Undetected fraud</i>	Case 2	Case 6 <sup>a</sup>

<sup>a</sup>*To be empirically verified*

After (at least one) micro-failure, a firm may either recover its financial situation where the distress is *temporary* (Donovan et al. 2015; Zhang 2008) or embark on a failure path because of *severe* financial distress. Therefore, corporate financial distress includes two alternative types of consequences, that is, a successful recovery or a failure path. Either case may correspond to a no tort (when there is a true and fair representation of the corporate situation in financial statements) or to a fraud situation which may be either disclosed or undetected. Thus, six alternative cases (Table 2.2) can be identified and analysed inside the broad concept of corporate financial distress. The differentiation between such cases is based on two criteria, that is, the type of financial distress (either temporary or severe) and its presentation in financial statements (either true and fair or incomplete in case of both detected and undetected fraud). Concerning *the type of corporate financial distress* (i.e. the first criterion), restructuring plays an important role for distressed firms and may be decisive for making a situation of financial distress either temporary or severe. When a firm, after a micro-failure, recognizes that it has entered on a condition of financial distress, it is vital that it respond immediately by taking corrective measures to enhance efficiency and control costs. Denis and Kruse (2000) find that, in such cases, firms' restructuring is associated with positive abnormal returns. However, the ability to engage in a strategy does not necessarily ensure a successful turnaround, which will depend more on the firm's ability to change its strategy, structure, and ideology than on restructuring based on short-term efficiency or cost-cutting tactics (Barker and Duhaime 1997). In particular, Sudarsanam and Lai (2001) provide four classifications of restructuring: managerial, operational, asset, and financial. Another variable that seems to be relevant in the distinction between temporary and severe financial distress is related to corporate governance attributes. So, for instance, the level of financial distress is

reduced in the presence of both greater levels of director and blockholder ownership and the existence of a board audit committee (Migliani et al. 2015); outside directors and ownership by outside directors (Elloumi and Gueyle 2001); non-executive director ownership and the presence of outside blockholders (Nahar Abdullah 2006). Also, in these cases, time represents an essential variable to take into account for restructuring analysis and for preventing temporary financial distress from becoming severe. Academic research has suggested this point about failure: rapid reorganization leads to efficient bankruptcies. Jensen (1991) writes: “It often takes years to resolve individual cases. As a result of such delays, much of the operating value of businesses can be destroyed.” For instance, the Bankruptcy Abuse Prevention and Consumer Protection Act (BAPCPA) of 2005 contains elements specifically designed to expedite bankruptcies (Covitz et al. 2006). The reason may be that the direct costs of restructuring (such as fees for retaining investment bankers, attorneys, and restructuring professionals) increase with time. Consistent with this view, Thorburn (2000) finds that the costs of bankruptcy increase with the time in default. Acharya et al. (2007) likewise find a statistically significant negative relationship between bond recovery rates and the time spent in default. Shorter failing paths also reduce the indirect costs by limiting the bankruptcy’s impact on business reputation, freeing management from drawn-out negotiations, and reducing the extent to which firms forgo investment opportunities. Therefore, if the time variable is not seriously considered as essential for restructuring, and financial distress is prolonged, such situations can become severe (entering a failure path) and ultimately lead to macro-failure (Agostini 2013). This is the last stage of a firm’s life cycle and represents an important type of discontinuance that requires a defensive reaction (i.e. a radical change) in the firm that wants to survive. This occurs after a process which evolves over a period of time, so it does not occur suddenly. There has been a recent increase in empirical studies exploring *entrepreneurial exit* (Wennberg and DeTienne 2014). Balcaen et al. (2012) examine three types of exit, demonstrating that following distress most companies either exit through bankruptcy or are voluntarily liquidated, while only a relatively small number are acquired, merged, or split. This is one of the reasons for which financial distress is often referred to as the likelihood of bankruptcy and related to the availability of liquidity and credit (Hendel 1996). In such cases, corporate financial distress is resolved either inside or outside the bankruptcy court. In the US, bankruptcy resolves impaired contractual claims against the

firm through either liquidation (Chap. 7) or reorganization (Chap. 11). This allows the firm to continue operating while seeking to satisfy creditor claims. Bankruptcy is only one type of macro-failure: merger, absorption, dissolution, or liquidation are all alternatives. Indeed, when a firm begins to experience financial difficulties and there is a real possibility that it will fail, it should evaluate several possible alternatives such as a refinancing package, a restructuring of its assets, a change in the scale or scope of its operations, or a merger with another firm (Balcaen and Ooghe 2006). On the one hand, the type of macro-failure is surely related to the timeliness of the adopted strategy for restructuring as explained above: the financial consequences of corporate financial distress imply the worsening of corporate status and decide the specific distressed path of the company. On the other hand, much depends upon the economic interests and power of the different stakeholders who may continue to support distressed firms. For instance, bankers, creditors, and so on, whose actions may determine firms' paths, may eventually decide that a firm's financial condition and prospects are insufficient to justify continued support. This issue is strictly related to the corporate decision of disclosing (or not) financial distress.

Concerning *presentation in financial statements* (i.e. the second criterion), distressed companies may decide to either disclose their negative status or implement a fraud. Fraudulent financial reporting is defined as "an intentional misstatement of financial statements" (Arens et al. 2003) and it is the opposite of a fair presentation, where the flexibility within accounting is used to give a true and fair picture of the accounts so that they serve the interests of users. There is also another intermediate practice: creative accounting is implemented where the flexibility within accounting practice is exploited to manage the measurement and presentation of the accounts so that they serve the interests of preparers (Jones 2011). Such modes of presentation correlate to possible and different levels of use and misuse of accounting by managers. In the case of fraud there is the deliberate management decision of stepping outside the regulatory framework to give a false picture of the accounts (Jones 2011). Many cases of financial statement fraud may also stay undetectable. If a fraud remains undetected, only the fraudster himself or herself knows that a violation has taken place. The principals, on the other hand, remain unaware of their loss due to the fraud and therefore do not make the necessary adjustments to prevent future losses. This is also related to the type of macro-failure. Academic research has long investigated the relation between corporate financial distress and merger/acquisition. Peel and Wilson (1989) indicate



that a significantly larger minority of merged firms (around 15–17% in their study) exhibits symptoms of financial distress in the year prior to merger than does the general population of firms (less than 5% are defined as distressed). Moreover, Peel (1990) suggests that it is usually the distressed firm which actively seeks a partner. These studies represent the premise for the investigation implemented in this book. Merger and acquisition represent a type of macro-failure for distressed companies that appears preferable to other alternatives. Given the definition of fraud provided above, it is usually kept hidden by companies. The so-called linkage problem identifies fraudsters' fear of being discovered if the fraud ceases, because of a higher probability of uncovering fraud in such a case (Baer 2008). For this reason, the macro-failure category becomes relevant and a sort of rating of managers' preferences about macro-failure can be considered. In particular, managers may prefer to resort to lobbying (Yu and Yu 2011) or to mergers and acquisitions (Erickson et al. 2011) as a means to postpone or avoid fraud disclosure.

The two described criteria (i.e. the varieties of corporate financial distress and its representation in financial statements) allow us to distinguish six firms' paths inside corporate financial distress (Table 2.2). On one hand, case 1 and case 2 regard firms facing a condition of *temporary financial distress*. While the first identifies a path of recovery to a viable financial situation that is fully disclosed in financial statements, the second represents a path of undetected fraud with recovery to a viable financial situation. On the other hand, case 3 and case 4 regard failing paths characterized by *severe financial distress* that can be either truly and fairly represented since its beginning (in case 3) or disclosed only after a fraud period (in case 4). There are two more final cases of corporate financial distress which have not been considered much in the academic debate because they are difficult to verify empirically. Such a lack can also be related to the absence of one or more conditions characterizing the "fraud triangle"<sup>3</sup> (Cressey 1953; Free and Murphy 2015). Case 5 corresponds to disclosed fraud after a temporary financial distress. Corporate fraud is usually disclosed after being perpetrated for a relatively long period of severe financial

<sup>3</sup>Cressey's (1953) fraud risk theory is based on three conditions (opportunity, pressure, and rationalization) that are always present in fraudulent actions: absent or ineffective controls; perceived financial need or pressure providing motivation to commit fraud; the fraudster's ability to rationalize that the fraudulent act is justified and consistent in some way with his or her values.

distress that implies especially bad financial consequences. It can be difficult to discover if perpetrated for short periods because there is not enough time to identify its signals. Such cases can be related to the so-called sudden bankruptcies (Hill et al. 1996) and “accidental bankruptcy” (Davis and Huang 2004). Finally, case 6 represents a situation of undetected fraud in spite of a long period of severe financial distress. Fraud is assumed to remain undetected only when corporate financial distress is temporary. The present book aims to consider also these last two cases in order to put the case for future research, given a lack of academic contributions and empirical evidence about them.

Summarizing, this paragraph provides a definition of financial distress as a path that may characterize corporate life. It may imply both the possibility and ultimately the event of bankruptcy. The time variable is essential in the analysis of such a path. Companies may recover after temporary financial distress. Failure follows a lasting condition of severe financial distress and has a negative epilogue called macro-failure that represents an important type of discontinuance in the corporate life cycle (Agostini 2013). So, both corporate failure and financial distress are extended in time (unlike bankruptcy), but they have different possible outcomes. Such differentiation permits us to identify a first criterion for categorizing corporate financial distress: the type of financial distress (either temporary or severe). A second criterion regards the presentation in financial statements of the consequences of corporate financial distress that may be (truly and fairly) represented in financial statements or hidden through fraud. According to the two criteria, six corporate paths are identified. Two of them (i.e. case 5 that corresponds to disclosed fraud after a temporary financial distress and case 6 that corresponds to undetected fraud in spite of a long period of severe financial distress) are especially worth considering because there appears to be a lack of academic contributions and empirical evidence about them.

### 2.3 PREVENTION AND EXPLANATION OF CORPORATE FINANCIAL DISTRESS

The concepts introduced in the previous paragraphs concerning corporate financial distress and failure are also relevant for understanding the passage of the focus in the academic debate from prediction to explanation. These are both relevant (in different ways, as explained below) for the evaluation and prevention of companies’ financial deterioration. This paragraph is

going to explore both prediction and explanation of corporate financial distress separately; then the move from one to the other will be analysed in order to identify reasons, differences, and benefits.

Since the earliest studies about *prediction*, financial distress has been considered a feature of corporate failure which in turn has been identified as an event characterizing the end of a firm's life cycle. This narrow definition has permitted the development of precise (and quite simple) statistical methods for financial distress prediction starting from the study by FitzPatrick (1932). Various modelling techniques have since been introduced throughout the world to predict the risk of business failure and to classify firms according to their financial health. Progressively, they have been based on different assumptions and specific computational complexities (Balcaen and Ooghe 2006). The most popular methods are still considered the cross-sectional statistical methods, which have resulted in numerous "single-period" static failure prediction models. Among them, univariate discriminant analysis (hereafter called UDA) and multiple discriminant analysis (hereafter called MDA) must be distinguished. Beaver (1966) develops the first (i.e. UDA), using a set of financial ratios and selecting them through a dichotomous classification test. Further developments of UDA (Tamari 1966; Moses and Liao 1987) use risk index models to predict failure: these models are simple and intuitive point systems, which are based on different ratios. Altman (1968) introduces the second (i.e. MDA) that is based on the estimation of a *Z*-score for predicting company failure. MDA is "a statistical technique used to classify an observation into one of several a priori groups dependent upon the observation's individual characteristics. It attempts to derive a linear (or quadratic) combination of these characteristics which best discriminates between the groups" (Altman 1968, p. 592). Over the years, there have been an enormous number of studies based on Altman's *Z*-score model. Altman et al. (1977) adjusted the original *Z*-score model into a different Zeta analysis model. Until the 1980s, the MDA technique dominated the literature on business failure prediction. These methods and contributions are valuable as milestones and are still the most used in failure prediction. They have been modified and applied in a variety of different ways (Taffler 1982) taking into consideration industrial enterprises (Deakin 1972, 1977; Blum 1974; Altman et al. 1977; Ohlson 1980), small firms (Edmister 1972), banks (Sinkey 1979), insurance companies (Trieschmann and Pinches 1973), stockbrokers (Altman and Loris 1976), building societies (Altman 1977), and railroads (Altman 1973). Moreover, they bring benefits for

different users (e.g. creditors concerned with defaults, suppliers focused on repayment, and potential investors) and in a variety of applications, such as portfolio selection (Platt and Platt 1991), credit evaluation (Altman and Haldeman 1995), and turnaround management (Platt and Platt 1999). Beaver's UDA (1966), Altman's (1968) Z-score based on MDA, and their further developments represent, then, tools for differentiating between failed and non-failed firms. Since the introduction of these first predictive models, researchers have increasingly begun to take into account the *time variable* (Laitinen 1991; Ooghe and De Prijcker 2008; Balcaen and Ooghe 2006). This requires the application of more sophisticated methods for financial distress prediction, such as the use of neural networks (Fletcher and Goss 1993; Altman et al. 1994; Leshno and Spector 1996; Yang et al. 1999). These are based on artificial intelligence systems, which can be defined as computer programmes "that simulate the processes by which human learning and intuition take place" (Hawley et al. 1990). One example is the completion of expert systems with inductive learning algorithms. These methods are an attempt to derive rules by analysing a number of representative examples. Messier and Hansen (1988) are among the first to use this methodology in predicting loan default and bankruptcy. Odom and Sharda (1990) applied a neural network model to the case of bankruptcy prediction and compared it to classical discriminant analysis. Their results indicated that the classification ability of the neural network approach outperformed the classical techniques. Since then, numerous academic contributions have championed the study of corporate failure through a neural network approach. Though some of these have suggested that neural network models do not outperform statistical ones (Boritz and Kennedy 1995; Etheridge and Sriram 1997), most maintain that neural network models do offer a superior prediction accuracy to other statistical methods (Fletcher and Goss 1993; Leshno and Spector 1996; Pendharkar 2005; Yang et al. 1999; Zhang et al. 1999). Besides neural network, other artificial intelligence systems have also been applied in failure prediction (Sun and Li 2011). Some examples are decision tree (Frydman et al. 1985), genetic algorithm, rough sets, and case-based reasoning. All these methodologies have a role to play in forecasting financial distress, but they display a common drawback: they all focus on *static modelling for prediction*, being constructed only with sample data covering a certain period of time (Sun and Li 2011). They can, therefore, be properly applied to the prediction of bankruptcy, but that is only one of a large range of possible macro-failures characterizing the end corporate paths

inside financial distress. This fact has long been ignored by prediction models. An arbitrary definition of failure may have serious consequences for the resulting failure prediction model (Balcaen and Ooghe 2006). Moreover, only the consideration of corporate financial distress (instead of the prediction of final bankruptcy) implies early warning of pathological situations and delivers notable benefits to a number of parties with an interest in the firm. For instance, management, shareholders, lenders, and auditors may gain the needed time to take action to reduce the costs which will be incurred if the firm fails without timely warning.

Recent predictive models aim to be more indicators of financial distress than predictors of bankruptcy. Much of prior research focuses on bankrupt versus stable firms, but, as Jones suggests, “accuracy in predicting bankruptcy among marginal companies, rather than quite healthy and quite distressed companies, may be the real test of a model’s usefulness” (Jones 1987, p. 147). Recent research specifically identifies and documents the importance of examining financially distressed firms through prediction models that have evolved over time. The oldest models distinguish between financially distressed firms that survive and financially distressed firms that ultimately go bankrupt in order to offer incremental information to that learned from modelling stable firms and bankrupt firms. In fact, Gilbert et al. (1990) find different statistically significant explanatory financial variables to distinguish two groups of firms: financially distressed versus bankrupt, and stable versus bankrupt. Hopwood et al. (1994) also examine stressed and non-stressed firms, including in each group firms declared bankrupt. They also report that statistically significant variables differ between the two groups. More recent studies focus on reassessing the oldest models to determine whether they remain useful for predicting bankruptcy in more recent and longer periods and, more importantly, for predicting other financial distress conditions besides bankruptcy (Begley et al. 1996; Grice and Dugan 2001; Grice and Ingram 2001). The analysis of corporate financial distress is based on all currently available information relating to the company in order to evaluate if it will fall into the condition of default or financial difficulty (Zhou et al. 2015). For this reason, the traditional models described have been adapted so as to *predict corporate financial distress* instead of final (possible) bankruptcy. Three predictive models have proved to be adaptable and the most used in this sense (Pindado et al. 2008): the linear discriminant analysis introduced by Altman (1968), logistic analysis applied as an estimation method by Ohlson (1980), and the probit analysis implemented by Zmijewski

(1984). Grice and Dugan (2001) and Grice and Ingram (2001) provide empirical evidence in favour of the adaptation of these three predictive models as being still useful for predicting financial distress, but they indicate that the models' accuracy is significantly lower in recent periods. Results tend to improve when the models are re-estimated, but the magnitude and significance of the re-estimated coefficients differ from those reported in their original application. This suggests that there is no stable pattern in the coefficients of the seminal models when applied to more recent and longer periods (Pindado et al. 2008). Thereafter, progressively other more complex statistical and data mining methods have been adapted to predict corporate financial distress, such as neural networks (Zhou et al. 2015; Wilson and Sharda 1994), decision trees (Gepp et al. 2010), and support vector machines (Shin et al. 2005). Fuzzy theory has been also applied in corporate financial distress prediction models (Ko et al. 2013; Chen et al. 2011). In addition, most recent research has developed hybrid models that are a combination of two or more methods (Divsalar et al. 2011; Verikas et al. 2010; Cho et al. 2010). The empirical results obtained by such hybrid models outperform those of single models, but they still present significant drawbacks.

Three main *drawbacks* concerning the described models for the prediction of corporate financial distress are reviewed here. First, the most evolved (recent) models, which provide the most accurate empirical results at the moment, are based on theories and modes of combining other (previous) methods that are not easy to explain clearly: this hinders to some degree their wide application in practice (Zhou et al. 2015). Second, the computations required by the most evolved models consume a lot of effort and time, impeding a widespread application. Even so, they are potentially interesting for users with the appropriate expertise and for certain objectives (e.g. researchers in their studies, creditors concerned with defaults, analysts and professional consultants, suppliers focused on repayments, potential investors). For this reason, the most used models for the prediction of corporate financial distress display a balanced combination of easy statistical application and accuracy of results. This reduces training costs and waste of time. Third, the passage of time prevents such static models from effectively forecasting financial distress in the changing economic environment or the changing enterprise operational environment. In the changing real world, new financially distressed enterprises gradually emerge to provide sample data flow (Sun and Li 2011). For this reason, predictive models are constructed only with sample data from a certain

period of time. The introduction of evolved methods requires a considerable range of samples and fine-tuning, but these cannot then be applied consistently and constantly because they do not take into full account the changing economic environment over time (Sun et al. 2016). This implies the need to continuously monitor the performance of such predictive models for them to be truly predictive in a statistical sense. These doubts related to the described drawbacks can be aptly summarized in the questions put in an academic paper some years ago that are still valid for evaluating the usefulness of the current predictive models: “Are the statistical models capturing the dimensions of financial health which are important to the decision context? Do they work better than other techniques? Do they work consistently over time? Can the models be improved upon?” (Keasey and Watson 1991, p. 90).

A further drawback about the predictive models we have been examining is that they do not take into consideration another relevant feature explored in the previous paragraph about corporate financial distress and failure: their representation in financial statements. Indeed, the information the model draws from the annual accounts may not, in fact, reflect reality. In particular, Van De Velde (1987) classifies two factors that might be responsible for firms’ misclassification. In a first type of error, the annual account does not present a fair and true view of the firm’s financial situation. In a second type of error, the model is ill-adapted to evaluating certain important factors concerning the situation of the firm because not all relevant information is considered by or incorporated in the model. Van De Velde also reports some regional differences in the discovered reasons for misclassification and emphasizes that the representativeness of the examined documents (i.e. the reflection of the fair and true view of the firm’s situation) is inadequate in most cases. This especially happens in firms that are practising fraud and accounts manipulation. Thus the appropriateness of the predictive methods is also crucially dependent upon the assumptions made regarding the costs of misclassification and the structure and availability of the data. Models for predicting corporate financial distress should therefore be considered according to *two alternative uses*. The first concerns the monitoring of current corporate status by different interested parties: this is an *ex ante* approach that requires a trade-off between difficulty of application and accuracy of results in order to reduce professional training costs and time. The specific type of model will be chosen according to the type of firm, user, and purpose of application. In this way, predictive models are used in an operational context as a means

for identifying firms that might experience financial distress in order to decide when to implement further detailed investigation. For instance, credit rating agencies just use their experience and judgement to select the relevant information for evaluating the credit risk of a particular company or individual with a simple scorecard instead of complex statistical models (Mays 2004). They use and select from the available information. The information related to a distressed company is huge, including macroeconomic situation, company characteristics, financial status, and market information. The procedure of selecting corporate features for financial distress prediction models is itself a matter of investigation in accounting and finance academic research (Zhou et al. 2015). Such models aim to provide a warning sign of a potential failure situation since the financial characteristics of the firm under investigation resemble those of firms which have previously gone bankrupt more than those which are a priori healthy. Such an approach would still appear predictive in a statistical sense in that the probability of a firm classified as at risk actually failing is very significantly higher than that for a firm selected at random, and that of a firm not so classified is very significantly lower. According to this first (operational) use, predictive models are intended to be practical instruments mainly for external analysts. For this reason, they focus on visible consequences of financial distress and they are framed to make use of mainly quantitative annual account data as input for the instrument (i.e. information that the external analyst can collect more or less easily). The second alternative use of such methods aims to distinguish on an ex post basis between distressed firms. It is essentially descriptive in nature and emphasizes firms' features in a multivariate context. In this case, the predictive models do not aim to be universally applied because they focus on events characterizing different firms and time periods. They take into account the institutional and regulatory framework within which firms operate, and take into consideration the fact that legal regulations are subject to changes which radically alter the type, incidence, and costs associated with particular forms of financial distress. *The temporal perspective* (either ex ante or ex post) is what differentiates the two alternative uses of predictive models of corporate financial distress. Indeed, the importance of time gives such models a new usefulness in attempting to overcome the recognized limit of subsequent intertemporal validity due to natural changes in the general environment around the company. The prediction accuracy necessitates a consideration of time. This is especially evident in the light of life cycle theory, introduced in paragraph 2.1., which requires



a consideration of the concept drift. This is due to the passage of time and the dynamic evolution of an enterprise: the consequences of financial distress experienced by a concrete enterprise will change as it evolves from one stage of its life cycle to another (Sun and Li 2011). Corporate financial distress generally implies deficiency of liquidity or cash flow difficulty in the starting-up period, excessive risk of financial leverage in the growing period, substantial or consecutive reduction in profitability in the maturing period, insolvency or bankruptcy in the recession period. The listed general consequences of corporate financial distress according to the temporal evolution of firms would require the recalibrating or substitution of prediction models every time the analysed firm moves from one stage to the other because of the financial distress concept drift (Sun and Li 2011). This phenomenon implies high costs, waste of time, difficulty (and possible errors) of application, inaccuracy of results, and so on. It seems preferable to consider the application of predictive models according to the second use described above as a premise for a deeper explanation of corporate financial distress. These considerations illustrate the reasons of the *progressive move from mere prediction to a fuller explanation of corporate financial distress* (Tinoco and Wilson 2013; Givoly et al. 2017) in order to examine closely how companies mutate from surviving (or even successful) into distressed and possibly bankrupt ones (Cybinski 2001; Parker 2012). Traditionally, prediction and explanation have been kept separate in default academic literature. For practical and commercial reasons, predictive models which estimate risk of failure and/or give a warning of imminent bankruptcy have been the “holy grail” of researchers. Such models are based on sophisticated techniques for discriminating failed from prosperous firms (often with an ex post view) producing precise results, but with a limited area of applicability (Cybinski 2001). While the prediction of corporate financial distress is relevant prevalently for external stakeholders, its explanation implies a deep analysis of corporate trajectories and is also relevant for internal parties, not least in order to avoid the same mistakes in the future. Indeed, while the prediction of corporate financial distress focuses on past and present time, the explanation considers all time dimensions (including the future). Moreover, while the prediction of corporate financial distress assumes a negative meaning (it aims at anticipating a pathological situation that firms are not prone to disclose), its explanation does not (it aims at understanding causes and consequences of a corporate status to avoid making the same mistakes in the future). Newer studies focus on understanding corporate failure: its theoretical

exploration is today considered the essential premise for its prediction even though with a greater complexity and a consequent lower reliability of the models. Such understanding is based on a distress continuum to detect signals of a firm's deteriorating condition over time. Corporate paths, such as financial distress and failure, should be investigated because (negative) situations lasting over time are related to several factors. The explanation of such corporate paths requires the analysis of their causes (also non-financial factors) as financial distress is so called because its symptoms (or consequences) are financial, but its causes may also be related to non-financial factors. Such an explanation does not only focus on financial ratios and accounting items: it also considers other measures and events.

Summarizing, this paragraph has focused on the progressive move of academic literature from mere prediction to a fuller explanation of corporate financial distress. Concerning the first, the oldest predictive methods distinguish surviving from bankrupt companies. Their subsequent adjustments have aimed to predict corporate failure and, finally, the preceding financial distress. Such developments imply an increase in sophistication level, effort, time, and training costs of implementation. Moreover, prediction models cannot be indiscriminately applied: their intertemporal validity needs to be controlled, especially because of concept drift. These drawbacks explain why predictive models may be useful in two ways. First, they are used in a specific operational context (e.g. by credit rating agencies) to identify *ex ante* the corporate cases that need further detailed investigation. Second, they are used to distinguish on an *ex post* basis between distressed firms and to emphasize their features in multivariate contexts. The two uses assume a different temporal perspective, but both represent a premise for further explanation of corporate financial distress. This considers corporate events, and is especially based on the analysis of managers' strategies implemented to reduce firms' distress and affecting the likelihood of recovery (Koh et al. 2015), while also examining auditors' work before the issuance of qualified opinions.

## 2.4 WHO EVALUATES CORPORATE FINANCIAL DISTRESS?

The analysis of corporate financial distress is very important for several parties, such as investors, company's partners, lending institutions, management, employees or their unions, auditors, credit insurers, suppliers, or retailers (Zhou et al. 2015), but also government regulators, and other

stakeholders. The (different) interests of so many parties have driven a lot of studies on the issue of corporate financial distress. Its consideration implies early warning of pathological situations and confers large benefits to these various parties who have an interest in the firm and may be able to take action to reduce the costs which would be incurred if the firm fails without advance warning. This potential benefit explains the ongoing research in this area that continues to refine financial distress models as emphasized in the previous paragraph. All the interested parties are especially afraid of the (costly) financial consequences of corporate financial distress for the reasons described above: distressed firms have a tendency to do things that are harmful to debt holders, shareholders, and non-financial stakeholders (i.e. customers, suppliers, and employees), impairing access to credit and raising the cost of stakeholder relationships (Opler and Titman 1994). These tendencies are due to conflicts of interest between borrowers and lenders (Jensen and Meckling 1976; Myers 1977; Stulz 1990), between firms and their non-financial stakeholders (Baxter 1967; Titman 1984; Maksimovic and Titman 1991), and between shareholders and managers (Gilson and Vetsuypens 1993; Novaes and Zingales 1993). Moreover, distressed firms have lower-quality ERM programmes because of resource constraints inhibiting the investment necessary for effective ERM (Baxter et al. 2013). During corporate financial distress, ERM is especially relevant because it has been shown to be associated with better corporate governance (i.e. audit committees charged with direct oversight of risk), less audit-related risk (i.e. stable auditor relationships and effective internal controls), the presence of risk committees, and boards with longer tenure.

Many parties, then, with different interests are involved in a firm's financially distressed status, but they may be broadly differentiated: external and internal stakeholders have different possible available approaches to analysing corporate status. As emphasized in the previous paragraph, an *ex ante* approach can be only predictive for *external parties* seeking to capture relevant warnings of corporate financial distress in time. Indeed, parties external to the firm, such as investors, creditors, auditors, government regulators, and other stakeholders, have traditionally tried to assess the financial strength of companies (Platt and Platt 2002). In particular, investors and credit lenders need to evaluate the status of financial distress before they make any investment or credit granting decisions on the company, in order to avoid suffering losses. The same considerations are valid for stockholders that aim to avoid both

direct costs (legal and administrative costs of restructuring the firm's debt) and indirect ones (the opportunity loss suffered when corporate resources are diverted to the debt restructuring process from more productive uses).

The explanation of corporate financial distress requires deep involvement and the availability of proper information. *Suppliers and customers*, differently from the other external parties recalled above, may gather relevant information and distress signals such as delayed shipments, problems with product quality, warnings from the supplier's bank, or observations made during company visits indicating near-term financial difficulties. From a supply chain management perspective, manufacturers are concerned about the financial health of their suppliers and vice versa (Platt and Platt 2002). A company's suppliers or retailers conduct credit transactions with the company and they therefore need to fully understand the company's financial status and make decisions about such transactions. Especially when there are long-term contracts with selected suppliers, large manufacturers seek out relevant information and are increasingly interested in the financial health of such suppliers in order to avoid disruption to their own production and distribution schedules. It is in both parties' interest to identify and reduce corporate financial distress. In this case, prediction and explanation of such negative status may be profitably combined. This is possible only for some stakeholders, especially managers and auditors.

The evaluation of corporate financial distress is based on knowledge of relevant conditions and events. It can be implemented, in the first instance, by managers and auditors (through the auditing procedures performed during a financial statement audit). From the beginning, default literature has emphasized the "stigma" of default that causes considerable damage to managers' reputations (Stein 1989). This explains *managers'* tendency to reduce the level of corporate financial distress by borrowing less, choosing less risky investment projects, and managing their firms more efficiently. A distinction may be introduced: in the presence of temporary financial distress, managers will rationally favour investment and financing policies that reduce the probability of financial distress (Gilson 1989), but when the negative situation becomes severer other less rational decisions may be considered. This is also related to the negative association between the level of corporate financial distress and the quality of ERM described above. Moreover, several types of corporate policy decisions seem likely to be influenced by the personal costs that managers incur because of such

distress. There is empirical evidence about the turnover of senior managers in financially distressed firms: there is an increasing changeover in the group of individuals who between them hold the titles of CEO, president, and chairman of the board when firms experience financial distress. Auditing research has also noted that auditors' resignations are related to the increase of business risk. Indeed, it suggests three ways of working that appear to be the most used by *auditors* when firms experience financial distress. First, auditors may adjust the audit plan and increase audit fees, fearing an increased possibility of violations committed by a distressed firm (Menon and Williams 2001; Pratt and Stice 1994; Bell et al. 2001; Hay et al. 2006). Second, withdrawing their services confirms auditors' independence from a distressed firm, reducing the risks of both litigation and loss (Krishnan and Krishnan 1996; Simunic and Stein 1990; Bockus and Gigler 1998; Shu 2000). Third, auditors may modify their assessments and issue a going concern opinion in case of corporate financial distress (especially when it is severe). Concerning this third reaction, auditing research analyses the biunivocal relationship between corporate financial distress and auditors' evaluation: financially distressed firms are more likely to receive a qualified audit report (Citron and Taffler 1992; Hudaib and Cooke 2005; Geiger et al. 2005; Mutchler 1985; Chen and Church 1992; Krishnan and Krishnan 1996) and such qualified audit opinion signals that a firm is experiencing financial distress (Cybinski 2001). For this reason, going concern opinions reduce the unexpectedness of firms' Chap. 11 (bankruptcy) filing (Chen and Church 1992). The formation of an auditor's going concern opinion consists of two stages (Krishnan and Krishnan 1996; Asare et al. 2012). In the first stage, auditors form an initial impression of a firm's financial condition based on the available information. This first stage depends on the auditor's competence: even though most auditing research shows that auditors have the ability to identify a distressed company with going concern problems, there is empirical evidence that many companies in the year prior to bankruptcy receive an unqualified audit report without signals of going concern uncertainty (Behn et al. 1997; Citron and Taffler 1992; Lennox 1999; Menon and Schwartz 1987). This is connected to the second stage, where auditors decide the type of audit report to be issued, which is itself related to auditors' independence: acting as rational economic agents, auditors are influenced by the perceived consequences of issuing a going concern report (DeAngelo 1981; Watts and Zimmerman 1983). Risk of litigation, risk of loss of reputation, and risk of client loss (Mutchler 1985) are factors suggested in the

literature as related to the economic trade-offs faced by the auditors (Krishnan and Krishnan 1996), influencing their going concern opinion and final decision. The risk of litigation and risk of loss of reputation may have a positive effect on auditor independence, while the risk of audit loss may compromise auditor independence. The competence and independence of audit firms are also influenced by their sizes. Large audit firms are more likely to issue a qualified audit opinion than smaller ones (Warren 1980). Moreover, they are better funded and more likely to disclose problems because of their greater risk exposure (Dye 1993). Consequently, due to their fear of financial problems being disclosed, financially distressed firms are less likely to use one of the “Big Four” audit firms<sup>4</sup> (Migliani et al. 2015). Major streams of literature recognize that the main causes of audit failures lie in the audit expectation gap (Porter 1993; Salehi 2011) and in the lack of auditors’ independence. For this reason, auditor rotation literature (Stefaniak et al. 2009) suggests setting a limit on auditor tenure in order to increase auditor independence and improve objectivity: auditors are less likely to form relationships with their clients if they have a shorter tenure. Thus, on the one hand, limited auditor tenure improves audit quality; on the other mandatory rotation increases audit costs and wastes the knowledge that the auditor has accumulated over time. In the same way, the choice between external or internal auditing implies a trade-off between auditors’ competency and objectivity (Kofman and Lawarree 1993): internal auditors have more information about the operations of their firm and can produce higher-quality reports, but they are also more prone to collusion with the management. Moreover, assuming that internal auditors rarely change their auditing methods, whereas different external audit firms use different audit technologies, rotation makes external auditing more effective than internal auditing in preventing fraud. In both cases (i.e. internal and external), auditors can limit fraudsters’ “learning their tricks” by randomizing their strategy over different audit technologies and using different individual auditors. When a fraudster is allowed to face the same audit technology many times, he or she can explore its loopholes and use that information to cheat, so the efficacy of an audit technology diminishes over time. In the same way, companies audited by the same firm over time may also learn how to

<sup>4</sup>The “Big Four” audit firms are KPMG, Deloitte Touche Tohmatsu, Pricewaterhouse Coopers, and Ernst & Young.

manipulate their financial statements without being caught. Rotating audit firms reduces such opportunities.

This may represent an effective audit strategy in a principal–agent framework, in order to avoid the undesired action of an agent (i.e. a distressed firm) successfully passing an audit. According to the same agency theory, auditors can also become the agent because of information asymmetry: agents (auditors in this case) enjoy a competitive advantage over principals (external stakeholders of a distressed firm) because of the “privileged” information they have about the company. Information within an organization is critical, and auditors working with the management of a company are likely to be aware of essential information. On the one hand, such collaboration is positive: auditors’ work supplements managers’ evaluations based on the up-to-date and relevant information at their disposal. This is consistent with belief-revision research in auditing (Asare 1992; Bhaskar et al. 2017). On the other hand, there is always the possibility of collusion between auditors and managers (Olsen and Torsvik 1998; Tirole 1986). Information asymmetry can be used in illegal or legal but unethical ways to maximize agents’ interests at the expense of the principals. This results in the principals’ inability to control what they might reasonably expect to be the actions of the agent (Strausz 1997).

In summary, while the previous paragraph emphasized the relevance of both prediction and explanation of corporate financial distress for different parties, this paragraph distinguishes stakeholders according to the relevance of information at their disposal for evaluating corporate financial distress. After considering the distress signals that can be gathered from suppliers and customers, the paragraph focuses on managers’ evaluation and auditors’ opinion. With regard to the first, managers’ actions to reduce corporate financial distress may be different according to its type (either temporary or severe). This is also related to ERM and management turnover. Regarding the second, academic contributions focus on three auditors’ reactions (i.e. adjusting the audit plan and increasing audit fees, withdrawing from their engagement, issuing a modified going concern opinion) and three types of risks (i.e. risk of litigation, risk of loss of reputation and risk of client loss) in order to evaluate auditors’ competence and independence when audited firms are experiencing financial distress. Moreover, the doubled evaluations of managers and auditors may either be positive or increase the risk of collusion. The next chapter will investigate such evaluations in the US context.

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