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STRUCTURAL AND EVOLUTIONARY PATTERNS OF FINANCIALLY DISTRESSED FIRMS. STRATEGIES TO OVERCOME DECLINE.

Arjola Mecaj

Directoras

María Isabel González Bravo

Isabel María García Sánchez

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Prindërve të mi, Veli dhe Mira,
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Table of Contents

List of Tables and Figure by Chapter

INTRODUCTION

Introduction

Every organization is inevitably exposed to ups and downs during its lifecycle (Krueger and Willard, 1991; Burbank, 2005) and failure is not a sudden event (Agarwal and Taffler, 2008). The ecological theory of organizations states that in a continuous process of firms, those who survive are better capable to compete. Kahl (2001) defines "fittest firms" as the ones that have greater chance to survive. In this way, the financial distress process should be understood as a selection mechanism by means of which good performers survive and bad performers do not. In this same line, Sheppard and Chowdhury (2005) consider that failure is a firm's misalignment with its environment.

The research on financial distress has been closely tied to the determination of failure prediction models. Failure is considered to be the result of an evolutionary process, where the underlying idea is the possibility that the crisis can indeed be anticipated (Balcaen and Ooghe, 2006).

Pioneer prediction models such as the one proposed by Altman (1968), built the basics of the research based on prediction. Those researches were mainly centered on minimizing classification errors and maximizing goodness of fit measures using certain variables throughout a wide period of time. In this context, prediction models were evaluated based on their percentage of success in the classification of the control sample companies (Smith and Graves, 2005). The existence of an error in the classification of those companies, which did not fail even though were being described as failed, was considered as a failure of the proposed model. Nevertheless, these results leave an open door to consider the possibility that the companies can indeed survive a difficult situation or even subsist in a permanent crisis situation. This approach would allow considering the possibility that the failure process can sometimes not be an evolutionary-degenerative process, but it can revert so that the companies are able to subsist, even though still indicating certain situations that can determine their survival. In this sense, prediction models not only provide some essential information in order to take actions against the given default probability, but also warn about a future outcome which, in many cases, may not even take place.

This "passive" use of the financial distress prediction models has been highlighted by Altman and Hotchkiss (2006) who affirm that stakeholders should have a more active participation instead of being simple onlookers of a given "probability of default". Basically, this default probability should be considered as vital information by the managers not only to improve business strategies in order to manage a distressed situation and return to a healthy financial situation, but also to develop investment strategies for potential investors or auditors assessing a going-concern qualification (Barniv *et al.*, 2002).

Failure is a reversible process and not necessarily degenerative if the company is able to detect signs of underperformance and to achieve an effort in its economic performance. In this sense, managing a crisis situation is a fundamental issue as it is not a spontaneous process. However, as Barniv *et al.* (2002) affirm, it is more difficult to establish final outcome patterns of a financial distress situation than to discriminate between healthy and distressed firms because firms facing a distressed financial situation usually share a series of common patterns which make it difficult to estimate a possible outcome of this situation. These patterns become obvious in indicators such as sales, equity or profit. Among the distressed firms, there are little divergences in the financial weakness indicators in the different failure processes (Ooghe and Prijcker, 2008). The dissimilarities between the failure stages and the turnaround effectiveness as well, become evident on the how quickly the indicators evolve and on the ability of the management to react when distress signals are detected. Ignoring these alert signals may lead to a continuous decline process which may end up in failure without even trying any recovery strategy (Burbank, 2005).

The reorganizations during a financial distress situation are not a simple matter and the probability of a successful exit is very low. However, the percentage of firms that succeed in getting through decline cannot be disregarded. Barniv *et al.* (2002) found that 50% of the sample firms which filed bankruptcy from the Office of the General Council of SEC resolved their situation as emerged firms. One third of the financially distressed firms in Kahl's (2001) study survived as independent companies. Yet, we should consider that the exit from a difficult condition, as Moulton and Thomas (1993) sustain, is only the beginning of the story.

Moreover, not all the successfully exiting firms manage to keep the new situation stable. For some firms, operating in a crisis situation constitutes their normal state of environment with crisis periods that can attenuate or loose up. Anyway, being able to maintain this kind of condition is also a manner to survive. In this sense, Kahl (2002) states that the financial distress should be considered a long term process that makes firms end up debilitated even after having recovered from decline. This weakness is observed in poor performance that inevitably may again drag the firms to a new financial distress situation. In this sense, Hotchkiss (1995) attested that during the first five years after exiting a bankruptcy, 35% to 40% of firms show negative operating income and up to one third of the firms that manage to ease their distress through debt restructuring re-enter a financial distress situation a few years later.

Several studies have shown that different factors may determine the exit from a crisis situation (Robbins and Pearce, 1992; Pearce and Robbins, 1993, 1994; Barker and Duhaime, 1997; Cascio *et al.*, 1997; Morris *et al.*, 1999). These factors may have a direct influence on the recovery process or on the capacity of the company to develop appropriate redirection strategies. The initial severity degree is considered an important hurdle in implementing successful actions. In this line, Smith and Graves (2005) found that, among all variables of the study, severity and firm size were the only variables significantly important during a turnaround process. Other authors (Robbins and Pearce, 1992; Pearce and Robbins, 1993; Harker and Harker, 1998) state that strategies oriented towards cost reduction and efficiency improvement were safe bets for a favorable outcome. However, Castrogiovani and Bruton (2000), Sudarsanam and Lai (2001) or Smith and Graves (2005) affirm that no positive relation could be found between certain strategies and successful outcome. These results indicate that severity, through its influence on the selected strategy, could be an indirect factor in the turnaround process (Robbins and Pearce, 1992).

More consensual results were obtained when stating that the performance in-distress is fundamental for the outcome of the difficult situation. In particular, it is observed that successful companies show better returns when compared to unsuccessful firms (Routledge and Gadene, 2000; Pearce and Doh, 2002; Kahl, 2001).

On the other hand, the accounting information evidencing certain financial distress situation constitutes a relevant alert signal when the investors assess the

survival status of a firm. When a crisis situation comes about during the lifecycle of a firm, it is fundamental to maintain the support and trust of the shareholders. Prahalad and Hamel (1994) consider that good corporate social behaviors can assure firm's future success enhancing the support and the confidence of the stakeholders. In this line, we can raise the following question: Can responsible behavior act as a mitigation factor of the firms' ongoing concern when certain financial distress situation takes place? If CSR investment creates firm reputation for stakeholders, allowing to contribute on the honesty and reliability of the firm (McWilliams and Siegel, 2001; Schnietz and Epsteinm, 2005), then it can mitigate the image offered by the deteriorated financial statements and add financial value to the firm.

In front of a crisis situation a long recovery process initiates whose outcome is not guaranteed and it implies a wide range of strategies and actions which need to be coherent with the weaknesses the firm presents (Robbins and Pearce, 1992; Pearce and Robbins, 1993; Castrogiovanni and Bruton, 2000; Smith y Graves, 2005; Pretorius, 2008). Maintain the support of shareholders is fundamental to insure the financial situation of a company or to obtain additional funds in order to implement strategies that will lead the entity towards a redirection of the situation with the support of other groups. In the long run, the survival of a company is strictly related to the capacity of the firm to adjust its values to the expectations of stakeholders (Freeman, 1984; Becchetti *et al.*, 2007). Thus, social responsible actions can allow consolidating the support if they guarantee and/or improve the valuations that different groups attribute to the firm. Although investors are prudent towards the presence of the risk a crisis situation implies, authors such as Devinney (2009) defend that responsible behavior can reduce the specific risk of a company, becoming one of the reasons why managers of firms involve in social responsible initiatives. Responsible behavior reduces the risk perception meanwhile it strengthen the image of the company and the latter achieves better discount rates and lower cost of capital charges (Feldman *et al.,* 1997; Miles y Covin, 2000; Heal, 2005; Goss, 2007; Ghoul *et al.* 2011).

The expectations of investors for the future conduct of a firm based on financial information are modified when the extra financial information is considered. It is interesting to know to what extent this modification of expectations occurs in firms that present some kind of financial difficulties resulting in an *a priori* unattractiveness for

the investors. Firms that encounter themselves in a difficult situation can suffer sales and revenue decline because customers start losing their trust on them. In this case, CSR practices may reward this initial distrust of customers so that they still find it attractive and reliable to continue their purchase relationship with the firm. In this sense, Ruf *et al.* (2001) show that there is a continuous positive relationship between CSR and sales increase. Others (Heal, 2005) list a series of CSR practices advantages that make a firm more attractive to investors, such as conflict reduction with the firm, waste reduction, brand value generation, employees' productivity or lower cost of capital.

This is the approach followed by Goss (2009) when showing that, starting by considering CSR as a "proxy" of good corporate governance, there is a negative and robust relationship between CSR and financial distress where this latter one is calculated as the probability of default following Merton's Model. Goss (2007) concluded that there was a relationship between CSR and distress, that is, information about CSR practices complements and brings in additional information to that offered by financial data. However, a clear demonstration on the fact that CSR investment reduces distress risk could not be established.

Starting from this premise, it is interesting to consider the possibility of managers of companies that, in certain moment of time, face difficult situations to invest in CSR actions as a walkway to create favorable expectations that mitigate the results offered by their financial indicators. In this sense, authors such as Ho and Taylor (2007) argument the existence of incentives for companies presenting unfavorable results to emit social and environmental information in order to redirect their route. In a more specific way, studies such as those of Goss (2007) and (2009) conclude that there is a positive relationship between CSR conduct and crisis situations, without obtaining any evidence that responsible behavior reduces the final default risk.

This research has its starting point in the observation of the business reality in the United States of a set of firms that in a certain moment of time show a situation of distress. In particular, it was observed that in the year 1993, a number of 753 firms presented some symptoms proper of an instable situation, more or less severe, classified through the identification of certain symptom-indicators. A part of the analyzed situation would imply, from the point of view of the financial theory, questioning the continuity of the company in that moment of time. However, during the period

analyzed, all the companies, but two, were active in the market after 10 years. This fact provides sufficient evidence of a high survival rate, in spite of having suffered a severe crisis. Yet, the evolution of this set of firms throughout the 10 year period is different. Some firms manage to resolve their situation of crisis while others follow a degenerative pattern, similar to a disease with degenerative effects. It is interesting the fact that a considerable percentage of companies appear to maintain themselves in the limit line between crisis and stability, with periods of health and disease, so that it could be affirmed that there is some "species" of company for which surviving in crisis constitutes their habitual way of existence.

The former arguments incite proposing the following questions:

- What patterns characterize the firms facing a crisis situation in a certain moment of time and which factor could determine the evolutionary process?
- Which strategies do firms in a crisis situation implement in order to resolve or ease this situation?

Following these issues, this study is structured in seven chapters and it mainly consists of two parts. In the first part, we examine whether the evolution of a distress situation depends on the initial features of the same or if it concerns certain firms' characteristics, and the determinant factors of the final outcome. In the second part, we consider the similarities and differences between distressed and healthy firms, considering their attitude and actions on social responsibility, as a way out of decline. However, it is to be highlighted that the purpose of this study is not centered on predicting failure. It rather focuses on analyzing the factors and the patterns determining the recovery process.

Chapter I offers the theoretical framework of the first part of this research exposing the model of recovery and the different factors influencing the final output of the distress process.

Chapter II is dedicated to a descriptive analysis of the sample firms that present a crisis situation and they are represented in a consensus map according to symptom of distress widely accepted in the literature, separating between reaction variables and recovering variables. The purpose is to analyze the similarities and differences between structural features of a sample of distressed firms by means of the changes in their crisis

position given by: i) initial economic and financial situation; ii) reaction path and iii) strength of the final situation.

It is in Chapter III where the existing differences or similarities between the two groups of firms are empirically studied in order to determine the relevant associations between variables and the final outcome. We consider that healing distress (Post-distress Status) should assess not only if a firm manages to solve its critical state but also the quality of the final position by considering the risk to re-enter into distress. We create a Fitness indicator that discriminates between well-performers, which just exit distress, and best-performers, which are located in a new healthy scenario minimizing the likelihood to fall again in distress.

The second part of this study starts in Chapter IV. Although many studies have focused on the relation between financial and economic performance of firms and their actions on corporate social responsibility (CSR), few of them analyze CSR actions of firms facing decline. Managers of companies that in certain moment of time face a distressed situation could be incentivized to invest in social responsible actions among their recovery strategies. These latter could be used to complement efficiency strategies oriented towards obtaining profits associated with investments, to reduce the costs in certain actions in order to develop cost reduction strategies, or to create favorable expectations that could mitigate the weak performance results given by their financial indicators.

Many studies dealing with the CSR matter and firms' financial and economic performance have been proof of the positive association between CSR actions and financial performance, but others found evidence that this relation was negative or neutral. It is in Chapter V where we analyze whether companies facing financial distress situations incorporate investment in responsible behaviors among their strategies as a mechanism to create favorable expectations that mitigate the weakened image given by certain financial indicators.

In Chapter VI we analyze the responsible behavior patterns in order to determine identity marks of the different companies and explore if the profiles of their conduct could be associated to the existence or not of a crisis situation.

Finally, Chapter VII studies if a recognized situation of financial distress has an impact on CSR strategies and modifies the attitude of a set of firms towards responsible behavior. We use CSR information of healthy and distressed firms to evidence feasible changes in CSR attitudes induced by distress position and we determine the relevant variables in the CSR behavior, once the symptoms of distress have been identified, for the overall assessment as well as the valuation in each individual CSR dimension, taking into account the sector where companies develop their normal activity.

References

Agarwal, V. and Taffler, R.J. (2008). Comparing the Performance of Market - Based and Accounting-Based Bankruptcy Prediction Models. *Journal of Banking and Finance*, 32, 8, pp. 1541-1551.

Altman, E. and Hotchkiss, E. (2006), "Corporate Financial Distress and Bankruptcy", Wiley, Hoboken, New Jersey.

Altman, E. I. (1968), "Financial ratios, discriminant analysis and the prediction of corporate failure", *Journal of Finance*, Sept.

Balcaen, S. and Ooghe, H. (2006), "35 years of studies on business failure: an overview of the classic statistical methodologies and their related problems", *British Accounting Review*, 38 (1), 63 -93.

Barker III, V.L. and Duhaime, I.M. (1997): Strategic change in the turnaround process: Theory and empirical evidence, *Strategic Management Journal,* 18 (1), pp. 13-38.

Barniv, R., Agarwal, A. and Leach, R. (2002), "Predicting bankruptcy resolution", *Journal of Business Finance & Accounting*, 29, 3&4, pp. 497-520.

Becchetti, L., Ciciretti, R. and Hasan, I. (2007), "Corporate Social Responsibility and Shareholder's Value: An Event Study Analysis", Federal Reserve Bank of Atlanta. Working Paper Series, Working Paper, 2007-6, April, pp. 2-33.

Burbank, R.K. (2005), "The Classic Five-Step Turnaround Process. Case Study of ProdiGene, Inc", *The Journal of Private Equity***,** 8 (2), pp. 53-58.

Cascio, W., Young, C. and Morris, J. (1997), "Financial consequences of employment-change decisions in major U.S. corporations", *Academy of Management Journal*, 40 (5), pp. 1175-1189.

Castrogiovanni, G. and Bruton, G. (2000), "Business turnaround processes: reconsidering the role of retrenchment", *Journal of Business Research*, 48 (1), pp. 25-34.

Devinney, T.M. (2009) "Is the Socially Responsible Corporation a Myth? The Good, the Bad, and the Ugly of Corporate Social Responsibility", *Academy of Management Perspectives*, May, pp. 44-56.

Feldman, S. J., Soyka, P.A. and Ameer, P.G. (1997), "Does improving a firm's environmental management system and environmental performance result in a higher stock price?", *Journal of Investing*, 6, pp. 87-97.

Freeman, R. E. (1984), "Strategic Management: A Stakeholder Approach". Boston: Pitman. Print.

Ghoul, S., Guedhami, O., Kwok, C. and Mishra, D. (2011), "Does corporate social responsibility affect the cost of capital?", *Journal of Banking and Finance*, 35 (9), pp. 2388-2406.

Goss, A. (2009), "Corporate Social Responsibility and Financial Distress". ASAC.

Goss, A. (2007), "Essays a corporate social responsibility and financial performance", York University. Dissertation, York University, Canada.

Harker, M. and Harker, D. (1998), "The role of strategic selling in the company turnaround process", *The Journal of Personal Selling & Sales Management*, 18 (2), pp. 55-67.

Heal, G. (2005), "Corporate social responsibility: An economic and financial framework", *The Geneva Papers*, 30 (3), pp. 387-409.

Ho, L-C.J. and Taylor, M.E. (2007), "An Empirical Analysis of Triple Bottom-Line Reporting and its Determinants: Evidence from the United States and Japan", *Journal of International Financial Management and Accounting*, 18 (2), pp. 123-150, Available at SSRN: http://ssrn.com/abstract=990124 or doi:10.1111/j.1467-646X.2007.01010.x

Hotchkiss, E. S. (1995), "Post-bankruptcy performance and management turnover", *Journal of Finance*, 50, pp. 3-21.

Kahl, M. (2002), "Economic Distress, Financial Distress, and Dynamic Liquidation", *Journal of Finance*, 57, pp. 135-168.

Kahl, M. (2001), "Financial Distress as a Selection Mechanism: Evidence from the United States", Anderson School, Finance Working Paper No. 16-01, Available at SSRN: http://ssrn.com/abstract=288361 or http://dx.doi.org/10.2139/ssrn.288361

Krueger, D.A., and Willard, G.E. (1991), "Turnarounds: A process, not an event", *Academy of Management* Best Papers Proceedings, pp. 26-30.

McWilliams, A. and Siegel, D. (2001), "Corporate social responsibility: a theory of the firm perspective", *Academy of Management Review*, 26, pp. 117–27.

Miles, M. and Covin, J. (2000), "Environmental Marketing: A Source of Reputational, Competitive and Financial Advantage", *Journal of Business Ethics*, 23, pp. 299-311.

Morris, J, Cascio, W. and Young, C. (1999), "'Downsizing after all these years: Questions and Answers about who did it, how many did it, and who benefited from it", *Organizational Dynamics*, 27, pp. 78-87.

Moulton, W.N. and Thomas, H. (1993), "Bankruptcy as a Deliberate Strategy: Theoretical Considerations and Empirical Evidence", *Strategic Management Journal*, 14 (2), pp. 125-135.

Ooghe, H. and Prijcker, S. (2008), "Failure processes and causes of company bankruptcy: a typology", *Management Decision*, 46 (2), pp. 223 – 242.

Pearce, J.A. and Doh, J.P. (2002), "Improving the Management of Turnaround with Corporate Financial Measures", *Academy of Management Proceedings*, b1-b6.

Pearce, J.A. and Robbins, K. (1994), "Retrenchment remains the foundations of business turnaround", *Strategic Management Journal,* 15, pp. 407-417.

Pearce, J.A. and Robbins, K. (1993), "Toward improved theory and research on business turnarounds", *Journal of Management*, 19, pp. 613-636.

Prahalad, C.K. and Hamel, G. (1994), "Strategy as a field of study: Why search for a new paradigm?", *Strategic Management Journal,* 15, pp. 5–16.

Pretorius, M. (2008), "Critical variables of business failure: A review and classification framework", *Sajems Ns 11*, 4, pp. 408-430.

Robbins, K. and Pearce, J.A. (1992), "Turnaround: retrenchment and recovery", *Strategic Management Journal*, 13 (4), pp. 287-309.

Routledge, J. and Gadenne, D. (2000), "Financial distress, reorganization and corporate performance", *Accounting & Finance*, 40, pp. 233–259.

Ruf, B.M., Muralidhar, K., Brown, R.M., Janney, J.J. and Paul, K. (2001), "An empirical investigation of the relationship between change in corporate social performance and financial performance: a stakeholder theory perspective", *Journal of Business Ethics*, 32, pp. 143–56.

Schnietz, K.E and Epstein, M. (2005), "Exploring the Financial Value of a Reputation for Corporate Social Responsibility During a Crisis", *Corporate Reputation Review*, 7 (4), pp. 327-345.

Sheppard, J.P. and Chowdhury, S.D. (2005), "Riding the wrong wave: Organizational failure as a failed turnaround", *Long Range Planning*, 38, pp. 239-260.

Smith, M. and Graves, C. (2005), "Corporate turnaround and financial distress", *Managerial Auditing Journal*, 20 (3), pp. 304 – 320.

Sudarsanam, S. and Lai, J. (2001), "Corporate financial distress and turnaround strategies: An empirical analysis", *British Journal of Management*, 12, pp. 183-199.

CHAPTER I. EVOLUTIONARY PROCESS OF FINANCIAL DISTRESS

Chapter I. Evolutionary process of financial distress

1.1. Status of decline: facing a financial distress situation

Throughout the years, and also taking as reference the initial works of Beaver (1967) and Altman (1968), the research in financial distress has been oriented towards the determination of the structures that differentiate the failed companies from the not failed ones. The purpose of these studies was to reveal the alert status lying underneath (Balcaen and Ooghe, 2006; Altman *et al.*, 2007; Altman, 1984; Dimitras *et al.*, 1996; Cybinski, 2001; Ravi and Ravi, 2007). These researches differed with respect to the use of different statistical techniques for the creation of models or the use of distinct predictive variables. However, most of them were characterized by using paired samples of healthy and financially distressed companies (Barniv *et al.*, 2002). In addition, they have not been free of critics associated to the used models, the variables or the sample selection (Balcaen and Ooghe, 2006; Cybinski, 2001; Laitinen, 1991). These investigations have reached some interesting conclusions regarding firm distress. Many of these contributions are consequence of the approaches that tried to resolve some of methodological deficiencies of the initial studies, such as the use of deterministic techniques that did not allow to analyze the failure as a continuous process (Luoma and Laitinien, 1991; Catanach and Perry, 2001; Shumway, 2001), the problems to distinguish the outcome of the companies in crisis (Barniv *et al.*, 2002; Gilbert *et al.*, 1990; Poston *et al.*, 1994) or the non-consideration of failure as a situation in any point where a company can have serious problems that introduce some uncertainty and risk in its future (Turetsky and Mcwewn, 2001).

In this sense, in the last years, various researches have introduced a variant on the prediction models by considering that the failure processes are continuous and that they are not identical for all the companies (Bardos, 2001). Articles like those of Laitinen (1991), Luoma and Laitinen (1991), Shumway (2001) or Laitinen (2005) consider some scenes that had already been introduced by other authors like Argenti (1976): failure has different phases and each phase has different features. The failure state is identical for all the companies that fail, but its evolution is different and the explanatory variables commonly associated to the failure process vary according to the phase the company is

in (Laitinen, 1993 and 2005). This approach can be found in other studies that "catalogue" companies based on the process that leads to a certain outcome (Laitinen, 1991; Bardos, 1995; Abad *et al.*, 2007; Ooghe and Prijcker, 2008). As a result, failure is identified as a final state that begins with situations in which a company declares to have difficulties or problems (Luoma and Laitinen, 1991). Nevertheless, the difficult situations are evolutionary. This means that they can degenerate, remain still (which would go against the survival theory) or they can be solved independently of the difficulty degree of the problem. Hence, there exists a state of "safety" where companies which at some time presented some serious problems of continuity have been able to resolve them.

Pretorius (2008) already evidenced that the literature uses a wide variety of terms associated to failure (i.e. bankruptcy, liquidation, insolvency, crisis, decline in performance, crashing, distress, etc.). Although the term financial distress is generally linked to an objective situation as bankruptcy status, receivership, creditors' voluntary liquidation, bond default, filing for Chapter 11 or disappearance of the company (Altman, 1968; Barniv *et al.*, 2002; Beaver, 1967; Agarwal and Taffler, 2008), it should to be considered in a broader sense.

The conditions that produce financial distress do not have to be the same as those of a bankruptcy situation (Turetsky and Mcwewn, 2001; Aragonés and González Sánchez, 1991). Thus, *crisis* should be understood as a situation of threat for the viability of the company where certain financial events reflect a variety of enterprise adversity (Turetsky and Mcwewn, 2001). In general, it could be understood as those situations where survival of a company and the fulfillment of its objectives are threatened (Jiménez Cardoso *et al.*, 2007). Crisis situations are associated to financial instability (financial crisis) and/or economic (profitability crisis). In these cases there exists some "incapacity" to generate resources and/or to fulfill the payment of debts in time. This "incapacity" can be transitory and of a major or minor gravity. It can be seen through a series of symptoms that are independent of the causes and of the consequences. These symptoms constitute the alert that the health and the future of the company is at risk.

The symptoms that detect a company in crisis are common in most of the studies that have investigated on this subject. Certain variables show that the economic and financial information in the annual statements reflects some problems in the health of the company. Some of these variables are Negative Net Income (in some cases Negative Operating Income), Negative Working Capital, Negative Cash Flow (in some cases Operating Cash Flow), Negative Equity or Negative Retained Earnings in previous years (Raghunandan and Rama, 1995; Geiger *et al.*, 1995; Mutchler and Williams, 1990; Mutchler, 1985). Ponemon and Shick (1991) perform an inverse selection. They select those companies that did not have problems, so, these companies had positive Net Income, sufficient Current Assets, positive Operating Cash Flow and positive liability ratios. Negative operating cash flow is considered by many authors as an indicator of the liquidity position of the company, thus, of the decline of the same and of the probability of financial distress (Anandarajan *et al.*, 2001; Bell and Tabor, 1991; John, 1993)

Poston *et al*. (1994) also classified companies in crisis those that had a solvency ratio less than unity. Martin (2000) associates the return on equity with the companies that can be in a difficult situation (and susceptible to receive a qualified audit opinion). This ratio responds to financial characteristics as well as non-financial ones. Another criterion could be when a company shows less Operating Income than its financial expenses (Jostarndt, 2006) or when it has a deficient interest coverage ratio (Kahl, 2001). Smith and Graves (2005) use a Z-score model developed by Taffler (1983) to identify firms in financial distress situation. The use of recognized models is an option chosen by authors such as Chou *et al.* (2010) besides Altman Z-score, KMV index or the Zmijweski Probit index, the latter one also used by Anandarajan *et al.* (2001).

In most of the papers a crisis situation existed when several symptoms of the previous were combined. However, in some works (Raghunandan and Rama, 1995; Mutchler and Williams, 1990; Mutchler, 1985) a company was considered in a difficult situation when fulfilling only some of them. Along with the previous criteria it is frequent to use the auditors' qualified opinion report to list a company in crisis (Raghunandan and Rama, 1995; Ponemon and Shich, 1991) or to better expose the difficult situation it is passing through (Mutchler and Williams, 1990).

The previous variables are simply symptoms that a crisis situation may take place. The differential matter is the latent factors (Catanach and Perry, 2001) that lie beneath, that is, the weaknesses and deficiencies in the management of the company that are transformed in that incapacity from an economic or financial point of view. In this sense, Geiger *et al.* (1995) group the failed companies in three types according to their symptoms: frequent negative Cash Flow, frequent Operating Losses or negative Working Capital. By doing this they assume that different underlying structures can exist in crisis processes. This distinction between symptoms and causes can be easily seen also in the different papers that have studied company crisis. For instance, ratios or variables were used as numerical indicator of the deficiencies and then were introduced as explanatory variables of certain models. Neophytou and Mar Molinero (2005) consider latent variables that describe several aspects of a company and frequently they refer to dimensions like: liquidity, risk, returns, quality of the assets, activity or management.

There is no longer a direct relationship between symptoms and failure. The outcome depends on external variables (economic environment) and internal or structural variables (management decisions). In this sense, some authors suggest that small companies seem to fail because of financial problems while big companies fail due to problems associated to management (Bruno *et al.*, 1987). Gilbert *et al.* (1990) indicated that the resolution of a problem may be influenced by non-financial factors while Poston *et al.* (1994) uphold the identification of variables, other than financial ratios, discriminating distressed firms that will survive against those that will not.

1.2. Overcoming a financial distress situation: The model

Even though some weak crisis situations tend to show a natural evolution throughout the "exit" and may be solved by simply making "routine" decisions, recovery process is not a "spontaneous" event. The distressed firms will face a long term scenario involving a continuous effort of adaptation to the diverse situations through which a firm passes during the upturn. The effort invested in this process will allow the reestablishment of stakeholders' trust, while the variables related to solvency and profitability gain stability (Burbank, 2005). Companies that do not have a long term

orientation and just adopt patch strategies do not usually reach successful exits (Pretorius, 2008). This approach allows us to consider that the financial distress could be "managed" so that they can no longer be considered as evolutionary-degenerative by nature but simply evolutionary.

Pioneer studies, such as that of D'Aveni (1989), affirm that managerial problems can be cause of decline and, at the same time, periods of decline can produce strategic and managerial problems. D'Aveni and Mcmillan (1990) show that the behavior of managers in surviving firms and failing firms is different in periods of crisis. The same idea is defended by Aragonés and González Sánchez (1991) affirming that managerial decisions affect the success or failure derived by a company crisis. Also, Luoma and Laitinnen (1991) established that the causes of the failure are often associated with an inadequate management which can be observed through the deterioration of financial ratios. On their side, Burbank (2005) points out that, together with other factors, the management shortcoming and an ineffective board of directors, are some of the causes of business failure. Ooghe and Prijcker (2008) denote that the management of a firm together with its general and immediate environment can be the causes of bankruptcy. These authors identify four types of failure processes and in three of them the role of management, due to inexperience, incompetence or lack of vision, is a critical factor. Also, Altman and Hotchkiss (2006) assert that highly risky structures can return to a healthy scenario depending on decision management's success. Therefore, disequilibrium in the management could have an influence in the incapacity of the company to encounter the appropriate strategies towards a crisis situation (Pretorius, 2008).

Kahl (2001) considered the processes of company crisis as a selection mechanism so that the best companies have a greater probability to survive. In his work it was demonstrated that the behavior of the companies during a financial crisis is crucial for the process of "exit" from this situation. Nevertheless, variables like size, liabilities or the complexity of the debt do not seem to affect the survival probability. These questions point out that the "management" in difficulty situations can differentiate the final result of the evolution process more than the firm's specific financial characteristics.

In general, many studies consider that there are many variables that may affect the final outcome of a distress process, highlighting the improvement in the efficiency, improvement in economic performance, size, and changes in the directive board or the severity degree of the initial situation (Smith and Graves, 2005). Among these factors, company size or severity of distressed state are important conditions that may affect the reaction capacity as well as the effectiveness of the measures taken by managers.

1.2.1. Distress enhancers

Severity

Similar to a disease process, the gravity of the initial crisis position not only conditions the measures to take but also their success possibilities. Firms that face worse starting situation need to make greater efforts. It is the idea followed by authors such as Pearce and Robbins (1993) or Arogyaswamy *et al.* (1995), when referring to the declining stemming stage as the first step to revolve a crisis process. The objective of this stage is to stop the declining situation, stabilizing the company and provide confidence to the stakeholders. In this sense, the effort and the time of this phase would be directly proportional to the starting severity degree.

Robbins and Pearce (1992) also recognize the contingency of the initial severity situation in the turnaround process. In this sense, affirm that there exists a relationship between retrenchment strategies and performance in firms having a severe starting situation while this relationship is not observed in firms facing a weak crisis state. Although Smith and Graves (2005) indicate that the gravity of the starting situation is strongly associated with the probability of recovery, Kahl (2002) sustains that the *financial distress* diagnosis is an imperfect indicator of the economic feasibility of a firm. Perhaps, following Moulton and Thomas (1993), the initial gravity status has an influence over the process of recovery more than on the final resolution. Thus, severity determines the rate of recuperation, so that the harder the severity, the greater the effort to react and the slower the process of healing the levels of solvency and profitability. This effort during the process, and not the starting situation, may be the main determinant of the final outcome.

In some cases, severity has been linked to the existence of continuity of a decline situation. In this sense, Moulton and Thomas (1993) use what they call the rate of decline of failing firm, which is the number of years with negative net incomes previous to entering financial distress. These authors found significant the relationship between the rate of decline of failing firms and recovery process, such that the higher the rate the slower the process. With a similar approach, Pearce and Doh (2002) make use of the decrease in ROE below the average of industry for a minimum of three four-month periods, considering a criterion consistent with the U.S. Government definition of an economic decline. However, in a general way, the literature associates severity degree to solvency and profitability indicators. In this way, continuous negative results, inability to generate income by means of operating activity, continuous solvency and/or liquidity problems or incapacity to generate cash flow which reflect problems in the health of the company, are widely accepted as measures of severity degree (Mutchler and Williams, 1990; Gilbert *et al.*, 1990; Ponemon and Shick, 1991; Poston *et al.*, 1994; Geiger *et al.*, 1995; Raghunandan and Rama, 1995; Davydenko, 2007).

Reaction capability

The possible effect of severity on the initial state may be mitigated if the firm counts on appropriate resources which increase the probability of a successful recovery. The structural reaction capability may ease the recovery process to a safe position cushioning the possible actions to implement. The capacity to obtain additional funds or generate additional incomes to implement treatment strategies can soothe the prior pressure imposed by a deteriorated financial distress position. In this sense, Barker and Duhaime (1997) associate successful turnaround processes with increases in sales that make companies have more options to undertake change strategies. Similarly, Pearce and Doh (2002) affirm that firms in distress that used debt and supported their sales to improve profitability successfully solved their difficult situation. They also state that changes in activity and in leverage level are associated with different phases of a turnaround process. In turn, Jostarndt (2006) identifies three factors which could be helpful to measure the risk of becoming financially troubled. An excessive leverage level, a poor firm performance, and an industry downturn may inhibit firms from obtaining the right amount of cash flow to operate normally. Firm operating

performance trend dominates as the reason causing financial distress showing that a firm may fail but not only for financial reasons. This allows the author to consider an association between financial distress and economic distress. However, concerning debt structure Kahl (2001) did not find evidence on if the debt level or the debt structure of a firm influences the final outcome of a crisis situation. In the same sense, Smith and Graves (2005) consider that the amount of free assets available (Assets/Liabilities) have an impact on the capacity to stop a decline process. Yet, their study did not find this variable statistically significant in the final outcome.

Size

Severity Status and Reaction Capability, as initial restrictions, could be moderated by firm size when considering the exit from a crisis situation (Moulton and Thomas, 1993; Barniv *et al.*, 2002; Schutjens, 2002). In particular, Moulton and Thomas (1993) found that bigger sized firms have a higher possibility to exit a crisis situation. Altman and Hotchkiss (2006) found that one of the most obvious factor that discriminates between firms that successfully restructure and those that liquidate, after being classified inside Chapter 11, was the firm's size. In the same line, Smith and Graves (2005) also evidence that size is the only variable, together with severity, that determines the probability to heal a financial distress. Nevertheless, other works observe that this variable did not present any clear relation with the survival chance (Kahl, 2001). In the same line, neither did Ooghe and Prijcker (2008) find evidence that there is a clear relationship between size and the different failure processes, identified according to the analyzed patterns. Possibly, firm's size does not determine the final resolution of a distress situation but it influences the reaction capability to confront it, moderating /strengthening the drawbacks when additional support should be guaranteed and restructuring decision must be made.

Performance in-distress

Regardless of the initial state restrictions, the adopted strategies and the behavior of companies during a financial crisis are crucial for the "exit" process (Sun and Li, 2007). A crisis situation usually disguises certain weak points that should be fixed. An

inappropriate diagnosis of the firm's weaknesses in order to act and react quickly may lead to a fast deterioration of the financial indicators (Barker and Duhaime, 1997). Beaver (1966) already stated that if a difficult situation was properly detected, measures that lead to an improved position could be taken, avoiding so a state of ultimate failure.

The underlying weaknesses can be classified as operational, lack of efficiency in the company's performance, or strategic, when a firm shows a weak competitive position (Barker and Duhaime, 1997). Despite the type of weakness, a series of strategies and action plans should be implemented aiming to reduce these detected flaws of the company (Krueger and Willard, 1991, Robbins and Pearce, 1992; Pearce and Robbins, 1993; Arogyaswamy *et al.*, 1995; Castrogiovanni and Bruton, 2000; Smith and Graves, 2005; Pearce and Doh, 2002; Pretorius, 2008).

In this context, some papers focusing in the turnaround process highlight the strategies followed by the managers of firms in difficult situation to return to a healthy scenario, such as retrenchment strategies or downsizing strategies (Robbins and Pearce, 1992; Pearce and Robbins, 1993 and 1994; Barker *et al.*, 1997). As a result, the possibility of improving the economic-financial indicators depends on the type of restructure selected (Cascio *et al.*, 1997; Morris *et al.*, 1999). In this sense, many studies have evidenced that strategies oriented towards efficiency improvement are fundamental for a successful result of the crisis management process (Robbins and Pearce, 1992). Among these strategies, research has specifically focused on the so-called retrenchment, downsizing or cut-backs, as mechanisms for efficiency improvement by means of cost and assets reduction.

Improving efficiency through some actions like cost cutting and/or asset reduction is crucial in recovery process, having a positive impact on firm's performance despite the underlying weaknesses (Robbins and Pearce, 1992; Pearce and Robbins, 1993; Harker and Harker, 1998). The operating performance during the recovery process drives a successful evolutionary route towards a new healthy scenario (Kahl, 2001; Routledge and Gadenne, 2000). Firms facing a distress situation and carrying out a retrenchment strategy are more likely to survive, even though the performance was statistically not greater than that of not retrenched firms (Castrogiovanni and Bruton,

2000). In this sense, Sudarsanam and Lai (2001) showed that the strategies applied by firms successfully recovering were not that different from the strategies applied by firms that did not recover. So, the implementation efficacy was the cause of these differences, even though more intensive restructuration was done by firms that could not redirect their situation.

The effectiveness of efficiency oriented strategies is supported by the results showing that firms resolving a situation of financial distress are statistically more profitable than those who did not settle (Campbell, 1996; Routledge and Gadenne, 2000; Pearce and Doh, 2002). These authors found that operating efficiency was the only variable used in distinguishing successful turnarounds from unsuccessful ones that significantly persisted during the recovery process. Kahl (2001) also stated that, *in-distress*, operating performance has a strong positive relation with the survival prospect. In particular, the author shows that an improvement in the standard deviation of ROA during a crisis period can increase the survival probability up to 0.62. However, other authors such as Barniv *et al.* (2002) or Laitinen (1993) found that the ROA coefficients were statistically not significant in predicting the outcome of a crisis situation.

The post-distress status

The main objective of a firm facing a distress situation is to heal the crisis state. Some researches, oriented to modeling the variables that influence a recovery process, identify the final stage of this process when a firm objectively exits a failure situation emerging as an independent firm, leaving Chapter 11 classification or keeping a defined period of positive income (Smith and Graves, 2006; Barniv *et al.,* 2002; Altman and Hotchkiss, 2006; Kahl 2001). However, the accomplishment of this objective should have one necessary *quality condition*. The new *post-failure* position should be achieved in suitable conditions that would permit an appropriate and continuous growth and performance rate. In this sense, Pearce and Doh (2002) consider that a decline phase is over when the company presents, during a minimum of three four-month periods, an increase in ROE above the average of the industry. In this way, the existence of a continuous exit situation is required.

A financial distress process could place a firm in a weak position, even if it had managed to solve its difficulties, inciting a poor performance that inevitably makes it enter again in an emergency situation (Kahl 2002). If a firm does not emerge profitably in the restructuring phase, in order to achieve a long term success, the probability of a successful exit process is very low (Burbank 2005). In this sense, Hotchkiss (1995) showed that up to one third of the firms that relieve their conditions by means of debt restructuring tend to go into a financial distress situation few years afterwards. With regard to post-distress position, Robbins and Pearce (1992) affirm that industry indicator variations should be considered in order to better identify the good performers or the exceptional good performers during turnaround. Despite of the assessment of Altman and Hotchkiss (2006) stating that the firms overcoming a Chapter 11 situation perform below firms of the same industry that did not pass through that same situation, Kahl (2001) found that the post-distress operating performance of firms getting through a crisis situation is similar to the industry performance.

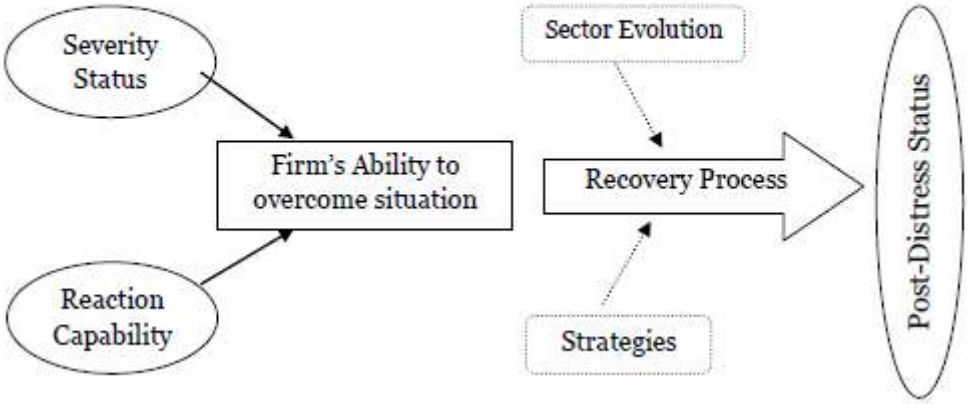
1.2.2. The model of recovery

When a firm is facing a distress situation and considering all the above analyzed dimensions, severity and reaction capability should be understood as initial conditions that will impose restrictions in selecting the strategies which will drive the performance during recovery, thus, determining the final resolution of long term financial distress process as shown in Figure 1.1.

The left side of the diagram gathers the initial determining factors to initiate the recovery process, outlining the firm's ability to improve its future and overcome the difficult situation. *Severity Status* offers valuable information about the initial degree of gravity of a firm's situation. This degree will condition the actions to be taken in a deteriorated situation and the possible outcome as well. *Reaction Capability* measures the firm's capacity to apply such actions through: i) the possibility to obtain further resources without worsening its position, ii) the capacity of debt negotiation or iii) the ability to generate additional incomes which may facilitate the application of strategy changes.

The right side of the Figure 1.1 defines the final subsequent status of firms, once specific actions have been taken. *Post-distress Status* shows the effectiveness of the management effort in a crisis situation, not only because the firm solves the initial state, but also since the new position is reached evidencing a well performance to set a suitable continuity in the new balanced situation.

Figure 1.1. The model of Recovery Process



Accordingly, Post-distress status assesses the quality of firms' welfare accounting for the risk to re-entry into distress discriminating well performers and best performers in a crisis management process. In a distress context, a well-performer just achieves the objective (i.e. exiting the crisis situation) while best-performers are located in a new healthy scenario minimizing the likelihood to reenter in distress.

The approach of Figure 1.1 encloses one main question: When a firm is facing a crisis situation, can the evolutionary deterioration always be reverted by means of certain strategic actions or the success may be affected by given structural strong/weak points of the company? Using a metaphoric reasoning, whenever a company is facing a disease such as financial distress, could it return to a healthy state only by means of therapeutic actions or does the cure depend on the absence of certain structural features?

References

Abad, C., Arquero, J.L and Jiménez, S.M. (2007), "El fracaso empresarial: características y tipos", Asociación Española de Contabilidad y Administración de Empresas, Madrid, *Accounting Review*, 38, pp. 63-93.

Agarwal, V. and Taffler, R. J. (2008), "Comparing the Performance of Market-Based and Accounting-Based Bankruptcy Prediction Models", *Journal of Banking and Finance*, 32 (8), pp. 1541-1551.

Altman, E. and Hotchkiss, E. (2006), "*Corporate Financial Distress and Bankruptcy",* Wiley, Hoboken: New Jersey.

Altman, E. I. (1984), "The success of business failure prediction models", *Journal of Banking and Finance*, 8, pp. 171-198.

Altman, E.I., Haldeman, R.G. and Narayanan, P., (1977), "Zeta Analysis: A new model to identify bankruptcy risk of corporations", *Journal of Banking and Finance*, 1, pp. 29-54.

Altman, E. I. (1968), "Financial ratios, discriminant analysis and the prediction of corporate failure", *Journal of Finance*, Sept.

Anandarajan, M., Lee, P. and Anandarajan, A. (2001), "Bankruptcy prediction of financially stressed firms: An examination of the predictive accuracy of Artificial Neural Networks", *International Journal of Intelligent Systems in Accounting, Finance & Management*, 10, pp. 69-81.

Aragonés, J.R. and González Sánchez, J. (1991), "Gestión continuada versus crisis financiera empresarial. Algunos criterios de previsión", *Revista Técnica ICJCE*, 23, pp. 37-45.

Argenti, J. (1976), "Corporate Collapse. The causes and Symptoms", MacGraw-Hill, London.

Arogyaswamy, K., Barker, V.L.III and Yasai-Ardekani, M. (1995), "Firm turnarounds: an integrative two-stage model", *Journal of Management Studies*, 32 (4), pp. 493-525.

Balcaen, S. and Ooghe, H. (2006), "35 years of studies on business failure: an overview of the classic statistical methodologies and their related problems", *British Accounting Review*, 38 (1), pp. 63 -93.

Bardos, M. (2001), "Développements récents de la méthode des scores de la Banque de France", Bulletin de la Banque de France, 90.

Bardos, M. (1995), "Détection Précoce des défaillances d'entreprises à partir des documents comptables", Bulletin de la Banque de France, Etudes 3, pp. 57-75.

Barker, V.L.III and Duhaime, I.M. (1997), "Strategic change in the turnaround process: Theory and empirical evidence" *Strategic Management Journal,* 18 (1), pp. 13-38.

Barniv, R., Agarwal, A. and Leach, R. (2002), "Predicting bankruptcy resolution", *Journal of Business Finance & Accounting*, 29, 3&4, pp. 497-520.

Beaver, W. (1967), "Financial ratios predictors of failure. Empirical research in accounting: selected studies 1966", *Journal of Accounting Research*, 4, pp. 71-111.

Beaver, W. (1966), "Financial ratios predictors of failure. Empirical research in accounting: selected studies 1966", *Journal of Accounting Research*, 4, pp. 71-111.

Bell T.B. and Tabor R.H. (1991), "Empirical analysis of audit uncertainty qualifications", *Journal of Accounting, Finance and Management*, 29 (2), pp. 350-371.

Bruno, A.V., Leidecker, J.K. and Harder, J.W. (1987), "Why Firms fail", *Business Horizons*, March-April, pp. 50-58.

Burbank, R.K. (2005), "The Classic Five-Step Turnaround Process. Case Study of ProdiGene, Inc.", *The Journal of Private Equity***,** 8 (2), pp. 53-58.

Campbell, S.V. (1996), "Predicting bankruptcy reorganization for closely held firms", *Accounting Horizons*, 10 (3), pp. 12-25.

Cascio, W., Young, C. and Morris, J. (1997), "Financial consequences of employment-change decisions in major U.S. corporations", *Academy of Management Journal*, 40 (5), pp. 1175-1189.

Castrogiovanni, G. and Bruton, G. (2000), "Business turnaround processes: reconsidering the role of retrenchment", *Journal of Business Research*, 48 (1), pp. 25-34.

Catanach, A.H. and Perry, S.E. (2001), "An evaluation of the survival Model`s contribution to Thrift Institution Distress Prediction", *Journal of Managerial Issues*, 12 (4), pp. 401-417.

Cybinski, P. (2001), "Description, Explanation, Prediction the Evolution of Bankruptcy Studies?", *Managerial Finance*, 27 (4), pp. 29-44.

D'Aveni, R.A. and MacMillan, I.C. (1990), "Crisis and the content of managerial communications: a study of the focus of attention of top managers in surviving and failing firms", *Administrative Science Quarterly*, 35, pp. 634-57.

D'Aveni, R.A. (1989), "The aftermath of organizational decline: a longitudinal study of the strategic and managerial characteristics of declining firms", *Academy of Management Journal*, 32 (3), pp. 577-608.

Davydenko, S.A. (2007), "When do firms default? A study of the default boundary", AFA 2009 San Francisco Meetings Paper; EFA 2005 Moscow Meeting Paper; WFA 2006 Keystone Meetings Paper, August. Available at SSRN: http://papers.ssrn.com/sol3/papers.cfm?abstract_id=672343

Dimitras, A.I., Zanakis, S.H. and Zopounidis, C. (1996), "A survey of business failures with an emphasis on prediction methods and industrial applications", *European Journal of Operational Research*, 90, pp. 487-513.

Geiger, M.A., Raghunandan, K. and Rama, D.V. (1995), "Reporting on going concern before and alter SAS n 59", *The CPA Journal online*, 53.

Gilbert, L.R., Menon, K.I. and Schwarz, K.B. (1990), "Predicting Bankruptcy for firms in Financial distress", *Journal of Business Finance and Accounting*, 17 (1), pp. 161-171.

Harker, M. and Harker, D. (1998), "The role of strategic selling in the company turnaround process", *The Journal of Personal Selling & Sales Management*, 18 (2), pp. 55-67.

Hotchkiss, E. S. (1995), "Post-bankruptcy performance and management turnover", *Journal of Finance*, 50, pp. 3-21.

Jiménez Cardoso, S.M., García-Ayuso Covarsí M., and Sierra Molina, G.J. (2000), "*Análisis financiero*", Ed. Pirámide Madrid.

John, K. (1993), "Managing financial distress and valuing distressed securities: A survey and a research agenda", *Financial Management*, 22 (3), pp. 60-76.

Jostarndt P., (2006), "Financial Distress, Corporate Restructuring and Firm Survival: An Empirical Analysis of German Panel Data", Dissertation Universität München.

Kahl, M. (2002), "Economic Distress, Financial Distress, and Dynamic Liquidation", *Journal of Finance*, 57, pp. 135-168.

Khal, M. (2001), "Financial Distress as a Selection Mechanism: Evidence from the United States", Paper 16, UC Los Angeles, Anderson School of Management.

Krueger, D.A., and Willard, G.E. (1991), "Turnarounds: A process, not an event", *Academy of Management* Best Papers Proceedings, pp. 26-30.

Laitinen, E.K. (2005), "Survival Analysis and Financial Distress Prediction: Finnish Evidence", *Review of Accounting & Finance*, 4, pp. 75-90.

Laitinen, E.K. (1993), "Financial Predictors for different Phases of the failure process", Omega, 21 (2), pp. 215-228.

Laitinen, E.K. (1991), "Financial ratios and different failure processes", *Journal of Business Finance and Accounting*, 18 (3), pp. 649-673.

Luoma, M. and Laitinen, E.K. (1991), "Survivan Analysis as a Tool for Company Failure Prediction", *Omega*, 19 (6), pp. 673-678.

Martin, R.D. (2000), "Going-concern uncertainty disclosures and conditions: a comparison of French, German and U.S practices", *Journal of International Accounting Auditing & Taxation*, 9 (2), pp. 137-159.

Morris, J, Cascio, W. and Young, C. (1999), "'Downsizing after all these years: Questions and Answers about who did it, how many did it, and who benefited from it", Organizational Dynamics, 27, pp. 78-87.

Moulton, W.N. and Thomas, H. (1993), "Bankruptcy as a Deliberate Strategy: Theoretical Considerations and Empirical Evidence", *Strategic Management Journal*, 14 (2), pp. 125-135.

Mutchler, J.F. and Williams, D.D. (1990), "The relationship between audit technology, client risk profiles, and the going-concern opinion decision", *Auditing*, 9 (3), pp. 39-45.

Mutchler,J.F. (1985), "A Multivariate analysis of the auditor's going-concern opinion decision", *Journal of Accounting Research*, 23 (2), pp. 668-682.

Neophytou, E. and Mar Molinero, C. (2005), "Financial ratios, Size, Industry and Interest Rate Issues in Company Failure: An Extended Multidimensional Scaling Approach", Working Paper 100, Kent Business School.

Ooghe, H. and Prijcker, S. (2008), "Failure processes and causes of company bankruptcy: a typology", *Management Decision*, 46 (2), pp. 223 – 242.

Pearce, J.A. and Doh, J.P. (2002) "Improving the Management of Turnaround with Corporate Financial Measures", *Academy of Management Proceedings*, b1-b6.

Pearce, J.A. and Robbins, K. (1994), "Retrenchment remains the foundations of business turnaround". *Strategic Management Journal*, 15, pp. 407-417.

Pearce, J.A. and Robbins, K. (1993), "Toward improved theory and research on business turnarounds", *Journal of Management*, 19, pp. 613-636.

Ponemon, A. and Shich, A.G. (1991), "Financially distressed companies and auditor perceptions of the twelve characteristics of decline", *Auditing*, 10 (2), pp. 70-84.

Poston, K.M., Harmon, W.K. and Gramlich, J.D. (1994), "A test of financial ratios as predictors of turnaround versus failure among financially distressed firms", *Journal of Applied Business Research*, 10 (1), pp. 41-57.

Pretorius, M. (2008), "Critical variables of business failure: A review and classification framework", *South African Journal of Economic and Management Sciences*, 11 (4), pp. 408-430.

Raghunandan, K. and Rama, D.V. (1995), "Audit reports for companies in financial distress: Before and after SAS Nº 59", *Auditing*, 14 (1), pp. 50 -16.

Ravi Kumar, P. and Ravi, V. (2007), "Bankruptcy prediction in banks and firms via statistical and intelligent techniques – A review", *European Journal of Operational Research*, 180, pp. 1-28.

Robbins, K. and Pearce, J.A. (1992), "Turnaround: retrenchment and recovery", *Strategic Management Journal*, 13 (4), pp. 287-309.

Routledge, J. and Gadenne, D. (2000), "Financial distress, reorganization and corporate performance", *Accounting & Finance*, 40, pp. 233–259.

Schutjens, V. (2002), "Firm closure and exit strategies in a life course perspective: from explorative analysis to a research agenda", Paper presented at ERSA Conference, Dortmund, Germany.

Smith, M. and Graves, C. (2005), "Corporate turnaround and financial distress", *Managerial Auditing Journal*, 20 (3), pp. 304 – 320.

Shumway, T. (2001), "Forecasting Bankruptcy More accurately: A simple hazard Model", *Journal of Business*, 74 (1), pp.101-124.

Sudarsanam, S. and Lai, J. (2001), "Corporate financial distress and turnaround strategies: An empirical analysis", *British Journal of Management*, 12, pp. 183-199.

Sun, J. and Li, H. (2007), "Financial distress early warning based on group decision making", *Computers&Operations Research*, 36, pp. 885-906.

Taffler, R.J., (1983), "The Assessment of Company Solvency and Performance Using a Statistical Model", *Accounting and Business Research*, 15, pp. 295-307.

Turetsky, H. and Mcwewn, R.A. (2001), "An Empirical Investigation of Firm Longevity: A model of the Ex Ante Predictors of Financial Distress", *Review of Quantitative Finance and Accounting*, 16, pp. 323-343.

CHAPTER II. STRUCTURAL AND EVOLUTIONARY PATTERNS OF COMPANIES IN A FINANCIAL DISTRESS SITUATION

Chapter II: Structural and evolutionary patterns of companies in a financial distress situation

2.1. Introduction

Different researches in the traditional line of failure have shown that the economic and financial structure of the companies that fail seems to be different from the ones that do not (Neophytou and Mar Molinero, 2005). In this sense, Gilberts *et al*. (1990) affirm that the financial variables that distinguish between the failed and not failed companies are not the same as those that distinguish between failed companies and firms with difficulties. Nevertheless, Poston *et al*. (1994) found that the financial ratios are questionable regarding their capacity to differentiate between the companies in crisis which are able to resolve the situation and those that are not. As a result, it is necessary to find out if there exist some patterns that determine the recovery possibility when a firm faces a hard financial situation. In particular, it is interesting to analyze the structural differences between the companies that, in spite of being in a state of crisis of a different degree, end up resolving the situation and those that do not.

In this chapter we analyze the similarities and differences between structural features of a dataset of 526 companies facing some degree of financial distress situation due to the existence of certain group of widely accepted symptoms. This analysis can be seen through the changes in firms' positions 10 years later, according to certain indicators of the process of "management" of that situation of crisis. We evaluate the process of "management of the crisis" considering three dimensions of analysis: a) economical and financial situation in the first year of the analysis, b) reaction path and c) strength of the situation. For the purpose of the analysis, we chose to use Multidimensional Scaling (MDS), which provides a visual representation of the pattern of proximities (i.e., similarities or distances) among a set of objects. This technique has also been used in other papers that have studied company failure (Mar Molinero and Ezzamel, 1991; Mar Molinero and Cerrano-Cinca, 2001; Neophytou and Mar Molinero, 2004 and 2005). The MDS methodology allows us to analyze the profiles of firms in a specific financial distress situation without any *a priori* assumptions on causal relations that could be used as predictors of the status at the end of the analyzed period. The final

objective is to explore the possible existence of this bond through the analysis of map placement of the companies in difficulties and the changes in these positions, according to their economic and financial structure and their initial starting situation.

2.2. The hypotheses

Considering some of the ideas exposed in Chapter I with respect to the evolutionary processes related to the company crisis we expect that:

1 There exist structural differences between the companies that show different symptoms of a crisis. If failure is a continuous process and, sometimes degenerative, we can expect that the companies with serious symptoms of crisis are positioned clearly separated from those presenting a weak crisis, according to their variables structures.

2 The outcome, or the position reached by a company after overtaking surpassing a period of crisis, is independent from the condition it began with. At the end of the period of analysis, the companies will be in a new position of "crisis" or "safety" depending on:

   a. Their structural characteristics, despite of the symptoms they showed at the beginning of the analysis. Authors like Ooghe and Prijcker (2008) assert that the difference between the failure processes depends on the distinctive initial lacks.

   b. The effort of the "management" of the crisis. The companies with greater effort in operating activity will improve their situation in spite of the initial symptoms they had. In this sense, Kahl (2001) and Routledge and Gadenne (2000) affirm that "operating performance" reflects the effort made during a distress situation and determines a successful evolutionary process towards the exit from that situation.

2.3. The sample

In the first place, we selected a wide 10 years scenario - 1993 until 2002 - to analyze the evolution process of companies that, according to the criteria exposed in the first section of this paper, presented some kind of financial distressed situation. A ten years scenario is a wide and sufficient period of time in order to evidence the patterns of firms which started off a distressed situation. Moreover, as Smith and Graves (2005) affirm, in an economic expansion context distressed firms could easily perform a successful turnaround.

In our case, given that the year 2002 was marked by events like the Stock Market Crash, the loss of investor's confidence in the Stock Market or the emergence of corporate fraud and corporate governance, it is considered as an important "transit" year for the financial information and the US Stock Market. We consider this year as the final year of our analysis period so that the economic and financial data would not be influenced by external factors. Thus, the analyzed scenario covers the years 1993 until 2002.

The data used in this study were derived from Compustat Database. For their particular structure and function, firms operating in financial service industry were eliminated. We also excluded the companies that presented incomplete or inconsistent information in the analyzed years. Companies that did not have data starting from a certain year were studied separately in order to identify if they were inactive in the market and the reason of their inactivity, by means of Compustat item "Inactive Issue Status Market". A total of 1721 companies were considered valid for the sample because they neither presented any incomplete data in their financial statements in one or various years nor disappeared from the Compustat Database during that period for reason not linked to liquidation or bankruptcy according to the Compustat Inactive Item.

To identify the firms that in the beginning (year 1993) presented a financial distress situation, we consider a *crisis status,* based on the arguments discussed in Chapter I, as a variety of enterprise adversity situations that threaten the future viability of the company (Turetsky and Mcwewn, 2001; Graveline and Kokalari, 2008).

To select financial accounting symptoms we chose variables widely used in the previously discussed studies (Raghunandan and Rama, 1995; Geiger *et al.*, 1995; Mutchler and Williams, 1990; Mutchler, 1985). For this study we selected the following criteria to classify a firm as being in a financial distress situation in the first year of analysis: Negative Net Income, Negative Operating Income, Negative Retained Earnings, Negative Working Capital, Negative Cash Flow, Negative Operating Cash Flow and Negative Shareholder's Equity. (For detailed definition of these variables, see Table 2.3). Whenever a firm presented one or more of the above indicators in the first year (1993) it entered in the sample. However, if the company presented a Negative net Income as the only problematic symptom the fulfillment of at least one of the other 6 criteria was required in order to classify that firm as facing a distressed situation. In agreement with Gilbert *et al.* (1990), to prevent the selection of firms that only had a poor performance in the starting year firms presenting merely a Negative Net Income for the year 1993 were not selected. This criterion made possible that poor performers were selected only when they also showed a continued instable situation such as losses in previous years or solvency problems.

As a result, 753 US companies showed a situation of instability in 1993. However, in 2002, except two companies, the remaining 751 companies were still active in the market. This number is reduced to 526 companies because some of them did not present some of the necessary information for the further analyses such as interest expenses. The distribution of the firms by sector and by number of symptoms fulfilled can be found in Table 2.1.

The number of observed symptoms permits an objective a priori classification based on the gravity of the starting situation. A firm would experience a *weak crisis* if it presents three or less criteria and, on the contrary, a *strong crisis* if it shows 4 or more. Following this further, in the first year of the analysis 77.38% of the firms encounter a weak crisis while 22.62% are facing a situation of strong crisis. Moreover, the number of criteria allows us to classify the companies *a priori* according to the gravity of the crisis situation and to analyze their evolution throughout the 10 years.

Table 2.1. Number of firms by distress criteria fulfilled.

Industry	Nr. Of Criteria Fulfilled							
	1	2	3	4	5	6	Total	Total (%)
Consumer Discretionary	59	16	7	8	10	0	100	19,01%
Consumer Staples	11	5	4	3	0	0	23	4,37%
Energy	16	10	4	0	4	0	34	6,46%
Health Care	17	6	1	3	38	1	66	12,55%
Industrials	52	22	19	7	12	4	116	22,05%
Information Technology	25	7	13	9	8	0	62	11,79%
Materials	18	14	7	4	3	2	48	9,13%
Telecommunication Service	5	3	2	2	1	0	13	2,47%
Utilities	60	2	2	0	0	0	64	12,17%
Total	263	85	59	36	76	7	526	**100,00%**
Total (%)	50,00%	16,16%	11,22%	6,84%	14,45%	1,33%	**100,00%**	

To complement the previous classification, companies were further classified according to their risk, using a widely accepted model in the literature. There exist many failure prediction models that could be used to assess default probability of distressed companies. Some of these techniques are the Z-Score models, KMV's EDF model, CreditSights' BondScore model etc. (Altman and Hotchkiss, 2006). We chose to apply the Z –score (Altman, 1968) and see how the firms of our sample were classified on an indicative basis only. The distribution of the Probability of Default is presented in Table 2.2. As a result, although 84% of the companies have a very high probability of default they are still active in the market throughout the 10 year period. Do these distressed firms achieve this goal because their economic and financial structure shares similar patterns with healthy companies? Or else, do they perform an effective effort in the management of the situation and accomplish an improvement/recovery?

Table 2.2. Distribution of Probability of Default

Probability of Default	Classification levels	Nr. of companies
Very High (VH)	$Z < 1.81$	441 (84,17%)
High (H)	$1.81 < Z < 2.75$	61 (11,64%)
Low (L)	$2.76 < Z < 2.99$	5 (0,95%)
Very Low (VL)	$Z > 3$	17 (3,24%)

2.4. The variables

A total of 12 variables (see definitions in Table 2.3) were selected in order to explain the structure of the underlying data in the analysis of the differences or similarities between the companies that presented certain level of crisis in the first year (1993) and their evolution undergone in the final year (2002).The descriptive statistics of the variables and their correlation are presented in Appendix A, B, C and D respectively. These variables are grouped in three categories as shown in Table 2.3:

1. *Reaction Path*. This factor defines the initial capacity of a company to make decisions that can improve its future situation. We selected a series of variables that indicate some kind of "alternatives" on which a company can count on to improve. These variables would show the different evolution of companies that had the same symptoms in the beginning of the crisis situation. This group is measured by 3 variables:

    a. Debt power (V1), or the possibility to obtain additional funds without deteriorating the financial situation

    b. Short term reaction power (V2), or short term obligations accomplishment

    c. Resource generation power (V3).

2. *Economic and financial structure*. This category reveals information about the initial economic and financial situation of the companies. It is measured by seven variables (V4 to V10) that point out the economic and/or financial weaknesses of the companies following previously cited papers. These variables reflect deficiencies in returns, financial autonomy, solvency etc. The consideration of this dimension is consistent with previous researches (Pearce and Robbins, 1993; Arogyaswamy *et al.*, 1995) that show how severity of the distressed state influences the *return process*. The use of the 7 original variables applied to classify the firms in financial distress situation is in agreement with the approach proposed by Smith and Graves (2005) to test the role of severity of a distressed state in the turnaround process.

3. *Strength of the situation in the period n+1* measured by two variables (V11 and V12) which imply strength or improvement of the situation after the initial crisis period. Mutchler (1985) already introduced the possibility of including a possible improvement of the company. It could be measured by the variation in the Net Income/Total Assets ratio, indicating a possible beginning of an improvement phase although the company maintained a difficult situation. In this sense, Kahl (2001) proved that the "operating performance" could be used to measure the viability of the company and it also reflected the effort made during a crisis situation. In this way, Routledge and Gadenne (2000) assert that firms in distressed situation with high levels of ROA (Return on Assets) have higher probability of success in the turnaround process.

On the other side, the level of interest coverage of a firm is considered to be an indicator of the financial distress risk (Jostarndt, 2006; Asquith *et al.*, 1994). In this paper, V11 is not presented as a ratio. This means it should be interpreted only as a measure of the existence of a possible distress situation (when the values of V11 are less than 0) or the non-existence of a prior distress situation (when the values of V11 are greater than or equal to zero). Thus, we are not evaluating the level of a risky situation of a firm, according to its degree of interest expense coverage. We want to detect its risk status due to its lack in the fulfillment of external capital obligations.

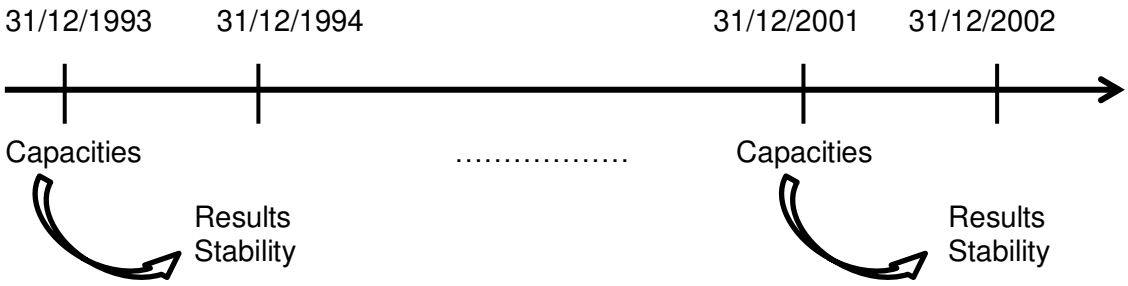
The first two groups mark a starting situation of making certain decisions while the third group characterizes a final situation of "viability" after those decisions have been made. By combining the three categories we would be able to identify if the movements throughout the analyzed period are due to the structure of the company or if, on the contrary, they can be attributed to management factors. The latter may have influenced in the improvement, worsening or standing still of the company situation. Since our analysis begins with the data available in the financial statements of December 31, 1993, the set of variables is developed according to Figure 2.1. The capacities or abilities of a firm in year *n* will be reflected in the results obtained in year *n+1* as well as the stability/instability of the situation.

Table 2.3. Financial Ratios

Category	Variable Name	Variable definition*
Reaction Path	V1	Shareholders' Equity/Total Liabilities
	V2	Current Assets/Current Liabilities
	V3	Sales/Total Assets
Economic	V4	Net Income/Total Assets
and financial	V5	EBIT/Total Assets
structure	V6	Retained Earnings/Total Assets
	V7	Working Capital/ Total Assets
	V8	Cash Flow/Total Assets
	V9	Operating Cash Flow/Total Assets
	V10	Shareholders' Equity/Total Assets
Strength	V11	EBIT - Interests ($Year_{n+1}$)
	V12	EBIT / Total Assets ($Year_{n+1}$)

* Variables defined according to Compustat (Global) Data Guide. In order of appearance:

Figure 2.1. Scheme of the analysis



2.5. The methodology

In order to evidence the underlying structural characteristics of the companies facing a financial distress situation, we chose to use Multidimensional Scaling (MDS). Briefly, Multidimensional Scaling (MDS) (Kruskal and Wish, 1984) is a multivariate statistical analysis tool that produces graphical representations of the main characteristics of a data matrix (Neophytou and Mar Molinero, 2004). This technique is based on the generalization of the principal component analysis that allows representing the similarities or differences between various elements according to the distances between certain variables (Peña, 2002). MDS produces a consensus map when the observed individuals are represented according to the underlying variable's structure. The similarities between the structures of the individuals can be observed through the proximity of the represented points, so that if two individuals appear close to each other it is because they share similar information. On the contrary they will be positioned far from each other if their information is not similar.

This technique has been used before in the analysis of company failure (Mar Molinero and Ezzamel, 1991; Mar Molinero and Serrano-Cinca, 2001; Neophytou and Mar Molinero, 2004 and 2005) although its use was focused on differentiating between failed and not failed companies.

For this study we chose the ordinal scaling which works with orderings and does not require the data to be measured on a ratio or interval scale (Neophytou and Mar Molinero, 2004). MDS algorithm does not make any assumptions about the distribution of the financial ratios applied in the analysis and no prior data reduction is necessary. For a list of advantages of this technique see Neophytou and Mar Molinero (2004).

The variables of the original data matrix can also be projected onto the consensus map by the Co-Plot methodology. The coordinates of the variables' positions will be estimates by a multi-regression process using each variable as dependent variable and the coordinates that locate companies in the space as explanatory variables so that:

$$ZV_{in} = \beta_0 + \beta_1 dim1_n + \beta_2 dim2_n + \ldots + \beta_J dimJ_n + e_i$$

where ZV_{in} is the standardized value of variable *n* (n=1,2,…,n) for company *i* (i= 1,2,…,i).

2.6. Empirical results and discussion

The presence of discordant observations was identified when standardized values of one or more variable exceeded two and a half (Mar Molinero and Serrano-Cinca, 2001). These discordant observations do not affect our analysis since the MDS algorithm uses relations of order so the results are robust to their presence. For the projection of the points in the map we chose not to omit these cases although the graphical representation is visually less attractive than when the outliers were omitted. Euclidean distance was selected as dissimilarity measure to calculate the proximity between two given companies. When the measure of dissimilarity among two companies is small the points in the space will have a short distance in between. In the same way, in the presence of large values of dissimilarity the companies will be placed far from each other. Thus, companies that in the representation of the initial year of analysis (1993) and in the final year of analysis (2002) are located close to each other share similar economic and financial structure according to the selected explicative variables.

One of the most important decisions for the interpretability of the data is the number of dimensions in which MDS map is to be drawn. Determining the dimensionality of the MDS maps is equivalent to determining the number of components in Principal Component Analysis (PCA) (Mar Molinero and Ezzamel, 1991). A prior PCA procedure would help in determining the accurate number of dimensions for the MDS analysis. The results of this PCA analysis are shown in the Appendix (E and F for the year 1993 data, G and H for the year 2002 data). These results only present information on how the initial data can be reduced in a less number of factors.

In this study we determined the dimensionality of the MDS maps by means of the "elbow test", which is, examining how the goodness-of-fit measure changes as the number of dimensions increases (Neophytou and Mar Molinero, 2004). The goodness-

of-fit measure chosen for this study is the Kruskals' $Stress_1$ which measures the level of agreement between distances calculated from the map and the dissimilarities from which the map was derived. The stress measure turns out to be a "residual sum of squares", it is positive and the smaller the better (Kruskal, 1964) (see Table 2.4). Table 4 shows how the values of $Stress_1$ change as the number of dimensions increases in the first year of the analysis, 1993. This relationship can be seen graphically in Figure 2.2. The same procedure was performed for the year 2002 data and the results can be seen in Appendix I and Appendix J.

Table 2.4. Kruskal's $Stress_1$ Evaluation

Stress	Goodness of fit
20%	poor
10%	fair
5%	good
2,50%	excellent
0%	"perfect"

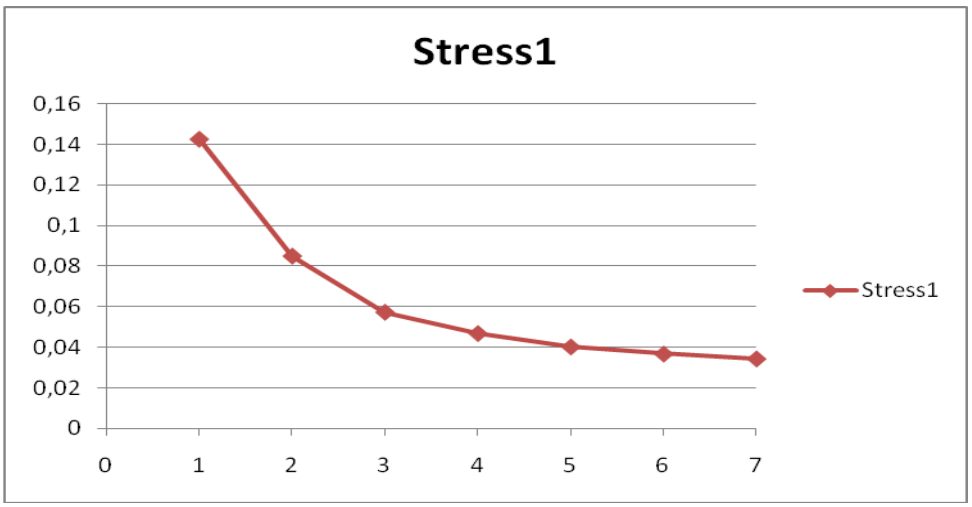
Based on these results, a 5-dimensional space would give a good representation for both years (1993 and 2002) and these results are in agreement with the prior-PCA analysis. In analyzing financial ratios, researchers identify up to seven factors so that a representation in seven dimensions would be adequate (Mar Molinero and Ezzamel, 1991). For this paper, the first five principal components in 1993 were associated with eigenvalues larger than 0.78 and accounted for 84% of the total variance (see Appendix E). Thus, a five dimension analysis would be accurate, treating the remaining two dimensions as "residual variation" (Mar Molinero and Ezzamel, 1991). Nonetheless, for the visual representation it would be very difficult to interpret the distances between points in a 5-dimensional space. As a consequence, only the first 3 dimensions which better represent the differences and similarities between companies are exposed. This conclusion is in agreement with the stress1 level (0.057) which indicates that a solution

in three dimensions gives a good representation for the year 1993 (0.058 for the year 2002).

Table 2.5. Changes in Stress1 values when dimensionality increases (year 1993)

Dimensions	$Stress_1$
1	0,142412
2	0,085011
3	0,057454
4	0,046997
5	0,040424
6	0,036882
7	0,034510

Figure 2.2. Stress1 Elbow Diagram for the year 1993



2.6.1. Structure analysis and underlying patterns

In order to observe the evolution and the movements that took place during the periods of analysis, we are going to represent the companies in two ways. Firstly, we will consider the number of symptoms the companies met at the beginning of the period (year1993) and secondly we will consider the Z-score classification for that same period on indicative basis only. The possible existence of divergences in the positions based on these criteria would allow detecting to what extent the failure risk can be disguised

under a slight group of symptoms. In the same way, the positions of the companies based on financial statement data for the year 2002 will also be represented in two ways. Firstly, we will consider the number of symptoms each company met in the year 2002 and secondly, we will consider the final situation focusing on number of symptoms the companies had in the first year of analysis (year 1993). The possible existence of similarities between companies in each analyzed period allows us to detect those structures conditioning the evolution of the companies. If those similarities exist we may be able to affirm that the failure process is a degenerative form of a certain risky situation.

Running the twelve linear regressions, one for each variable, and by means of the Co-Plot methodology, we obtained the coordinates of the variables representing the structural characteristics of the companies. The regression coefficient results for the year 1993 and 2002 are reported in Table 2.6 and Table 2.7, respectively. In this way we try to explain up to what point the value that a particular variable takes for a given company is associated with the position in the space of the point that represents that company (Neophytou and Mar Molinero, 2004). In general, the results are powerful enough to interpret the maps. Note that the goodness of fit, R Square, of the variables for the year 1993 exceeds 65% except for the variable V11 which had the worst goodness of fit with a level of 54,5%. In the same way, the worst result for the goodness of fit for the year 2002 (Table 2.7) was a level of 68,7% corresponding to variable V11. For the rest of variables the goodness of fit exceeded 70%.

The coordinate point that marks the position of each variable can be connected with the origin of the axes by a vector that helps interpreting the importance of each variable in the plotted dimensions. The vectors length indicates the variables that are better represented by the chosen factorial planes. If the feature of the data associated with the vector is not associated with the projection, the vector will have a short length. The angle between the vector and the plotted dimension demonstrates the importance of the features of a variable in the projection, so that an acute angle between variable vector and dimension indicates that that dimension is strongly related to that variable. If two vector endpoints are located next to each other it means that their associated variables convey similar information.

Table 2.6. Regression coefficient results for the year 1993

Year 1993	Independent Variables								R Square
Dependent Variable	Constant	DIM1 Beta	DIM2 Beta	DIM3 Beta	DIM4 Beta	DIM5 Beta	DIM6 Beta	DIM7 Beta	
ZV1	1,34E-17	-0,762	1,724	-0,404	-2,713	0,076	0,865	0,523	74,4%
ZV2	-1E-16	-0,989	2,008	-0,906	1,492	0,071	0,010	0,106	78,0%
ZV3	1,09E-15	0,455	-1,113	-2,796	-0,604	1,910	-1,183	-0,056	84,6%
ZV4	2,56E-16	1,703	1,406	-0,319	0,162	-1,156	-0,282	0,130	89,9%
ZV5	1,15E-17	1,840	0,988	-0,596	0,116	-0,805	0,006	-0,545	89,6%
ZV6	1,02E-16	1,343	1,357	0,356	0,038	0,979	-1,578	-0,372	69,4%
ZV7	-2,39E-16	-1,122	1,581	-0,597	1,220	1,450	-0,447	-0,105	69,1%
ZV8	3,86E-17	1,737	1,285	-0,280	0,071	-1,298	-0,241	0,413	90,0%
ZV9	2,28E-17	1,736	0,488	-0,873	-0,681	-1,335	-0,845	-0,453	82,8%
ZV10	-1,71E-16	-0,971	1,856	0,676	-0,964	0,398	-0,450	-0,197	64,9%
ZV11	3,66E-16	0,789	0,151	1,959	-0,042	2,211	-0,443	-0,085	54,5%
ZV12	4,88E-17	1,607	0,144	-1,044	-0,185	0,518	2,941	-0,721	86,9%

Table 2.7. Regression coefficient results for the year 2002

Year 2002	Independent Variables								R Square
Dependent Variable	Constant	DIM1 Beta	DIM2 Beta	DIM3 Beta	DIM4 Beta	DIM5 Beta	DIM6 Beta	DIM7 Beta	
ZV1	-1,54E-16	0,199	-2,071	-0,571	-0,635	1,697	-2,260	0,836	83,8%
ZV2	9,34E-17	0,141	-2,217	-0,025	-0,453	-0,615	1,578	0,188	71,2%
ZV3	-5,96E-16	-0,286	0,716	3,044	1,434	0,535	-0,318	0,960	72,9%
ZV4	2,61E-16	-2,059	-0,388	0,497	-0,515	0,143	-0,409	-1,780	92,1%
ZV5	-7,91E-17	-2,107	0,073	0,506	-0,872	-0,778	-0,576	0,073	92,0%
ZV6	5,33E-17	-1,706	-0,485	-0,584	0,789	0,108	0,392	1,764	69,9%
ZV7	5,68E-16	0,162	-2,219	0,458	0,927	-1,599	1,021	-0,506	78,8%
ZV8	1,16E-17	-2,075	-0,276	0,564	-0,560	0,106	-0,565	-1,495	91,5%
ZV9	1,58E-16	-1,939	0,160	0,537	-0,846	-0,748	-0,128	1,774	84,9%
ZV10	-3,28E-16	-0,408	-1,857	0,370	2,098	-0,613	-1,923	-0,458	79,8%
ZV11	-3,89E-17	-0,636	0,571	-2,476	1,934	-1,217	-0,112	-0,361	68,7%
ZV12	2,85E-17	-1,894	0,243	0,363	-0,962	-1,539	-0,952	0,047	84,0%

Bivariate correlation matrix between the variables for year 1993 and 2002 can be found in Appendix C and D, respectively.

It can be noticed that in 1993 (Figure 2.3 for dimension 1 and 2; Figure 2.4 for dimension 1 and 3) there is a clear differentiation between the companies being in a *weak crisis,* which are located on the right of dimension 1 (x-axis), and those being in a *harsh crisis*, located on the left side of dimension 1. This differentiation is much more remarkable if we focus on companies that fulfill 1 symptom located in a safety zone of profitability (the upper-right quadrant) and those who present problems in the generation of income and cash-flow (located in the bottom-left quadrant). Thus, dimension 1 could be associated to the crisis status. In the same way, and according to the positions of variables V1, V2, V7 and V10, dimension 2 would be related to solvency and reaction ability in the financial structure. This fact would allow affirming that each quadrant assembles companies with a similar underlying structure in 1993, the starting year of the analysis.

In order to determine to what extent the companies are represented by the factorial planes, according to their symptoms, we performed a logistic regression where the dependent variable corresponds to the probability of the number of fulfilled criteria and the independent variables are the coordinates of the companies in each dimension. The results here not exposed, showed that, except for the companies with 5 symptoms, the rest of the group-symptom was not well represented. This fact allows affirming that the group of symptoms is not representative of a common underlying structure for the companies that belong to the same group. However, the results of the logistic regression improve when we consider the separation between companies in weak crisis (1, 2 or 3 criteria) and those in harsh crisis (4, 5 or 6 criteria), confirming the results visually obtained in Figure 2.3 and Figure 2.4.

The consensus map obtained by the MDS methodology provides us a picture of the structural features underlying in the analyzed data set of firms. In this sense, Table 2.8 gathers the profiles of firms according to their placement on the map by combining the dimensions 1 and 2, and each of the representative variables for these dimensions.

Figure 2.3. Factorial plane 1-2 for the year 1993

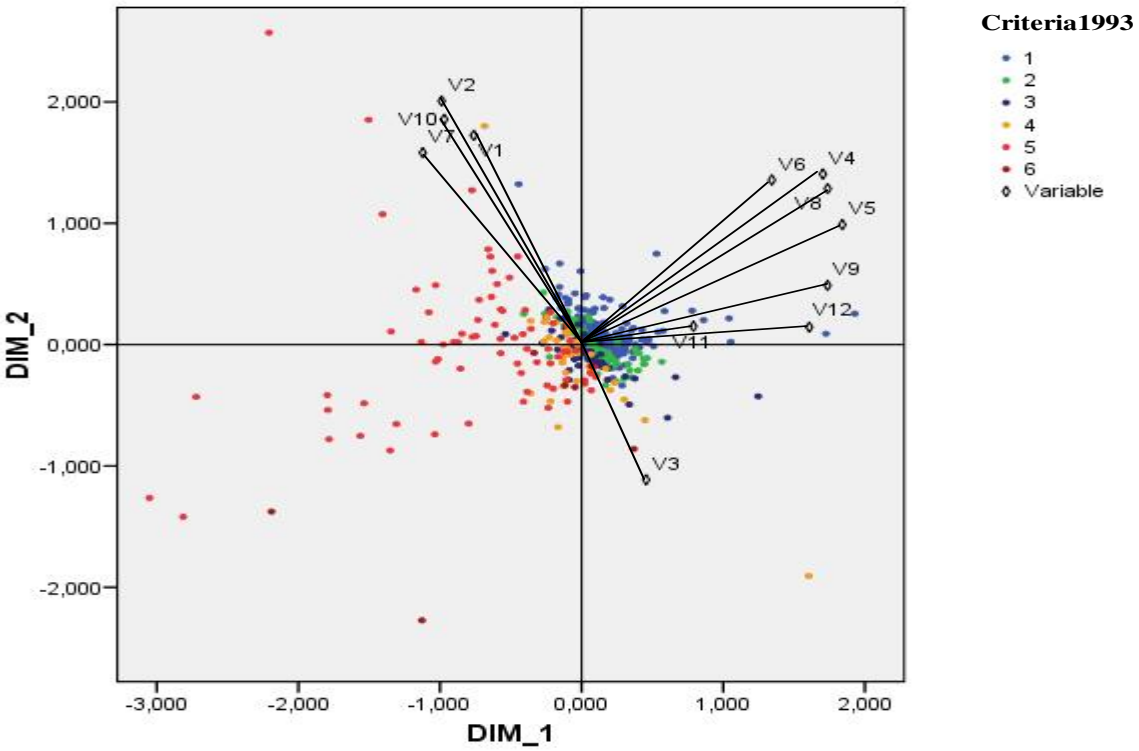


Figure 2.4. Factorial plane 1-3 for the year 1993

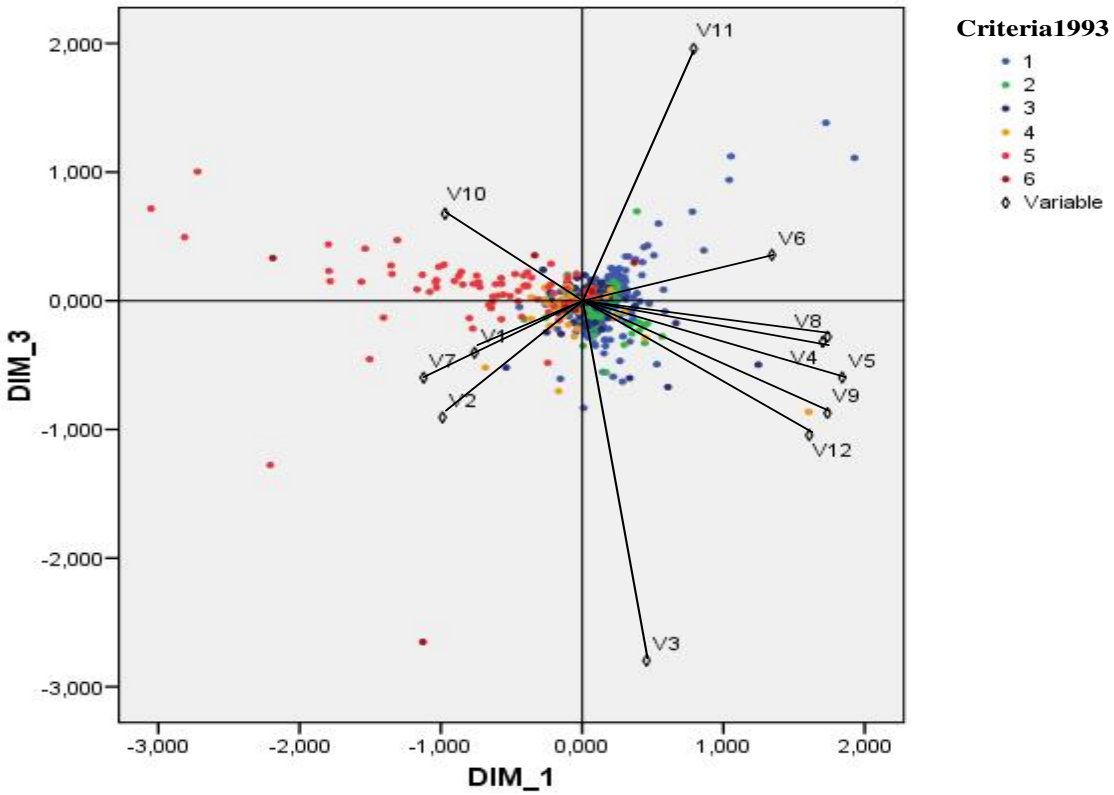
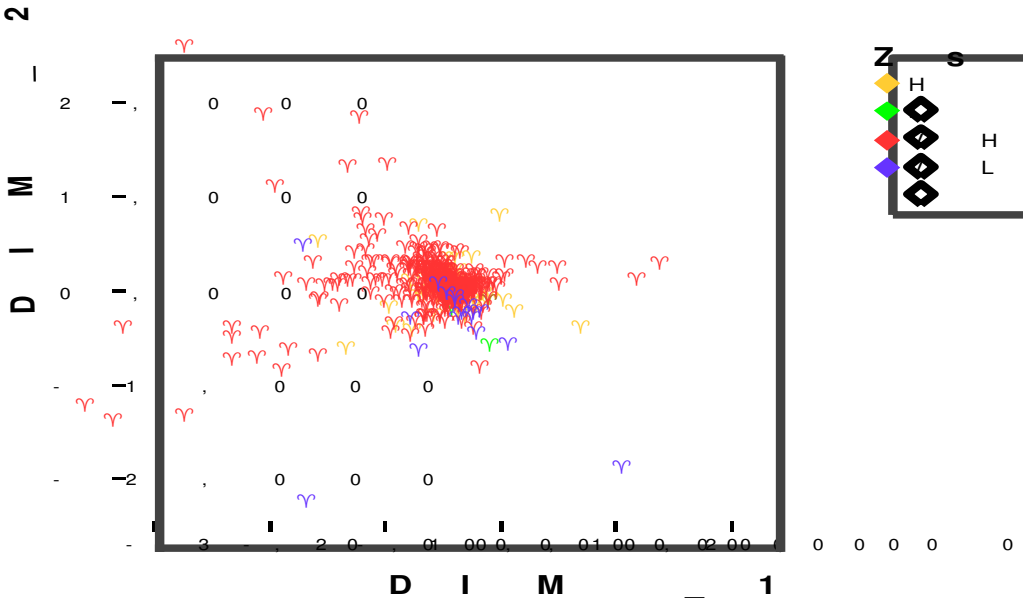


Table 2.8.Firms' profile according to map zones.

Reaction Path zone	Safety zone
Financial reaction ability Solid economic and financial structure	Solid economic and financial structure Income generation Cash flow generation
Danger zone	**Resource Generation zone**
Economic issues Financial issues Income generation issues	Resource generation potential by operating level

Figure 2.5 reflects, only on an informative basis, the positions of the companies using the failure risk, measured through Z-score93, to differentiate them. The companies with low risk appear clearly differentiated but we cannot affirm that their data structure is different from the companies with very high risk, which are located indistinctly in the four quadrants. There exists a difference between failure Z-risk and the number of crisis symptoms, except for the group of companies that show 5 criteria and very high risk.

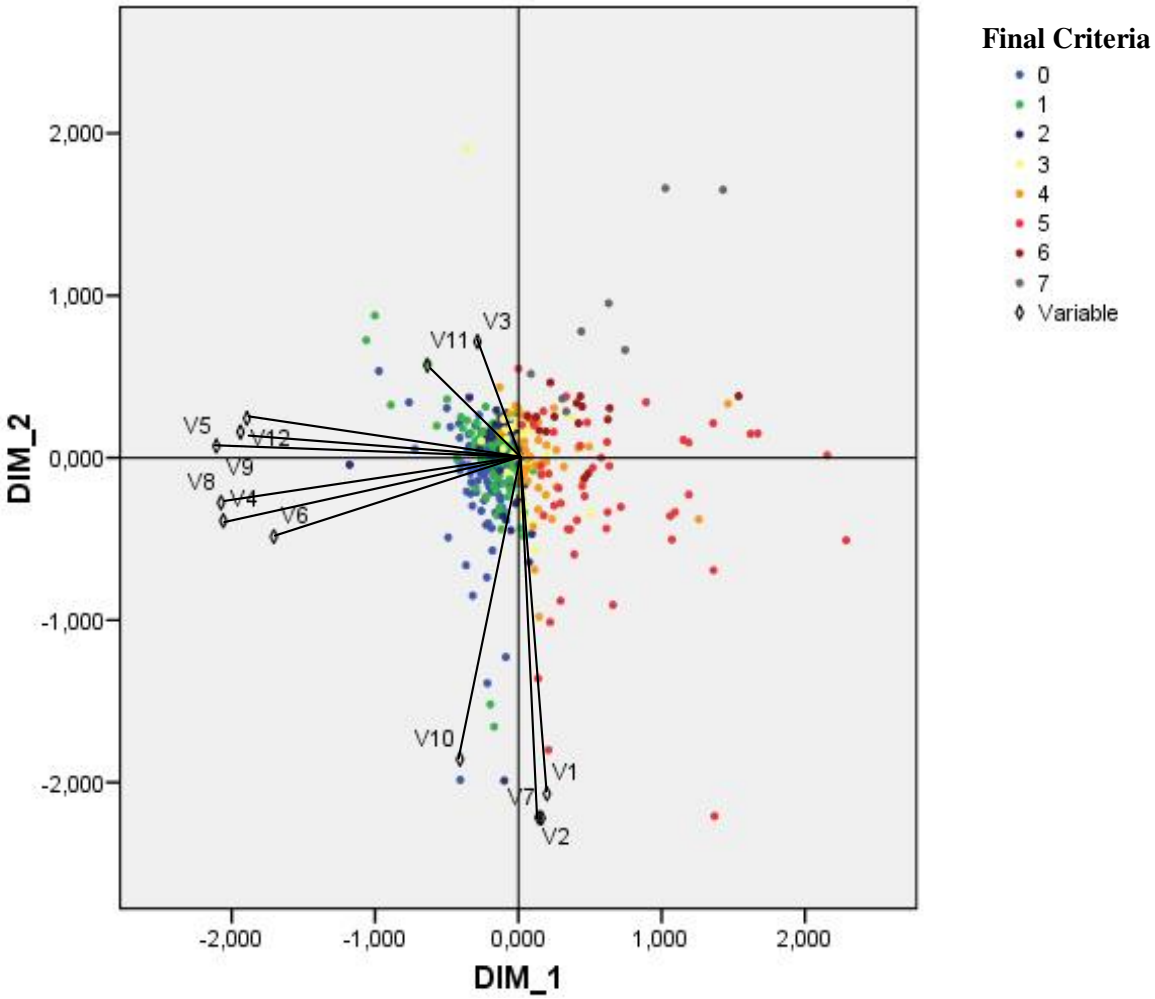
Figure 2.5. Factorial plane 1-2 for the year 1993 labeled by Zscore level



A similar representation is reached by the MDS analysis in the year 2002 (Figure 2.6). Dimension 1 separates the companies with more than four criteria to the right of the axis and companies in a weak crisis situation or that have solved this situation to the left part of the axis. The same results could be seen when we represented the companies

in dimensions 1 and 3 (Figure 2.7). It can also be noticed that dimension 2 distinguishes between the positions of the companies that have a different degree of strong crisis situation.

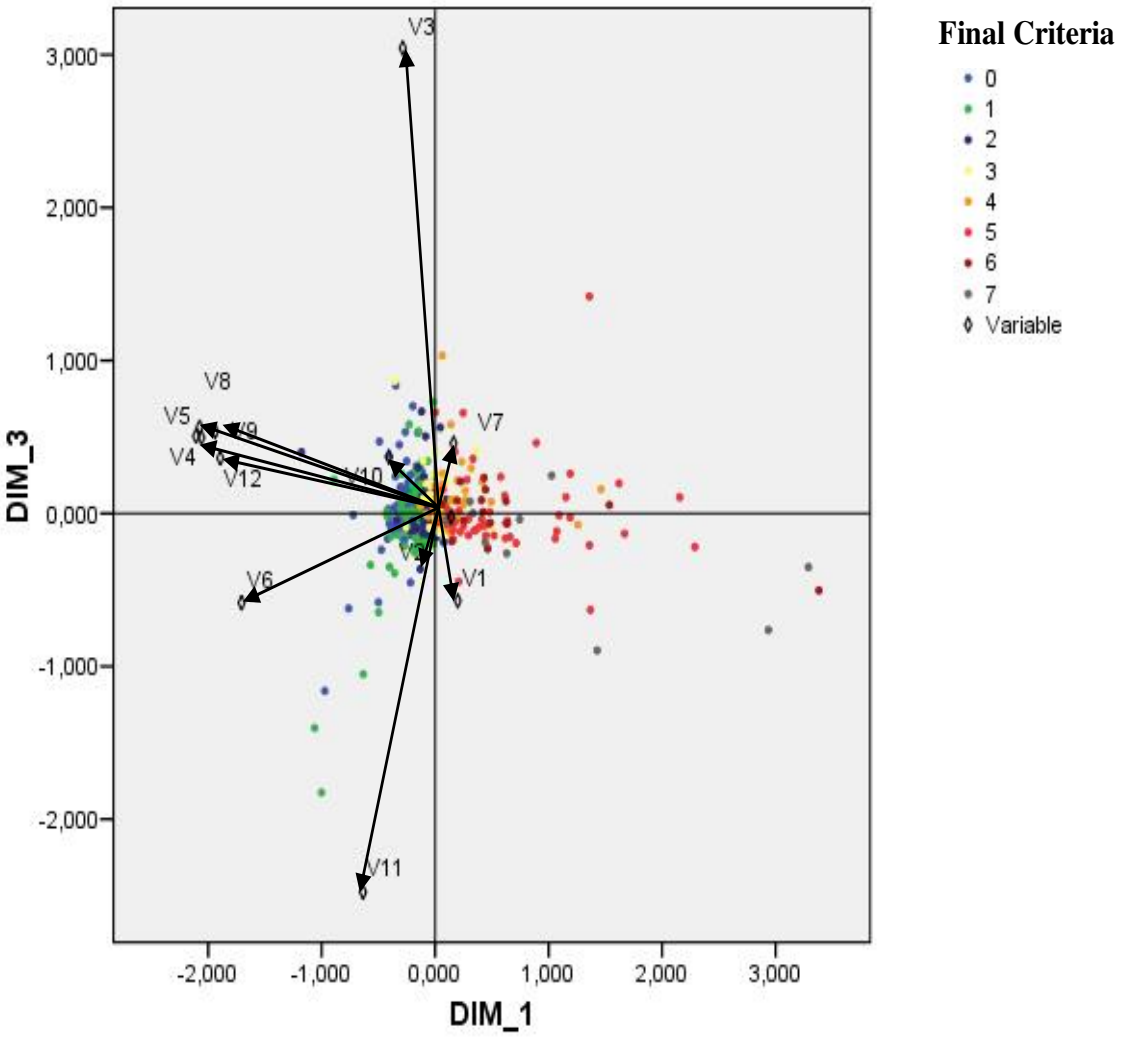
Figure 2.6. Factorial plane 1-2 for the year 2002



Those companies that fulfill 5 criteria are located in the bottom-right part of the axis 2 and those that fulfill 6 or 7 symptoms are positioned in the upper-right part of the same axis.

For the year 2002 (Figure 2.6), the companies that satisfy certain conditions seem to share a common data structure. As dimension 1 is mainly related with V4, V5 and V12, it represents the achievement and performance of the company.

Figure 2.7. Factorial plane 1-3 for the year 2002



The companies located in the left of dimension 1 are characterized by their strengths in the performance and they are in their way to recovery. It is to emphasize that the variable Operating Income/Total Assets, which measures the *strength or stability* of the way out, is an important variable when the companies are positioned on the left side of dimension one. In this sense, the idea that companies which survive crisis periods are characterized by a strong managerial action is reaffirmed (Kahl, 2001; Routledge and Gadenne, 2000). This managerial action is measured by Operating Income/Total Assets. On the other hand, these companies are also distinguished because they achieve higher Cash flow as well as Operating Cash flow.

Dimension 2 gathers information related to variables describing the financial structure. So, those companies located in the lower part of the dimension 2 indicate solidity with respect to their working capital or to their financial autonomy (V2, V7 and V10). It can be noticed that the companies that fulfill 6 or 7 symptoms have important financial deficiencies and they are grouped separately from the rest of the companies. Among the companies that fulfill 4 and 5 criteria we can detect two groups: the first one is made of companies that have economic and financial deficiencies and lie on the right of dimension 1. The second one is made of companies with financial deficiencies and lie on the upper part of dimension 2.

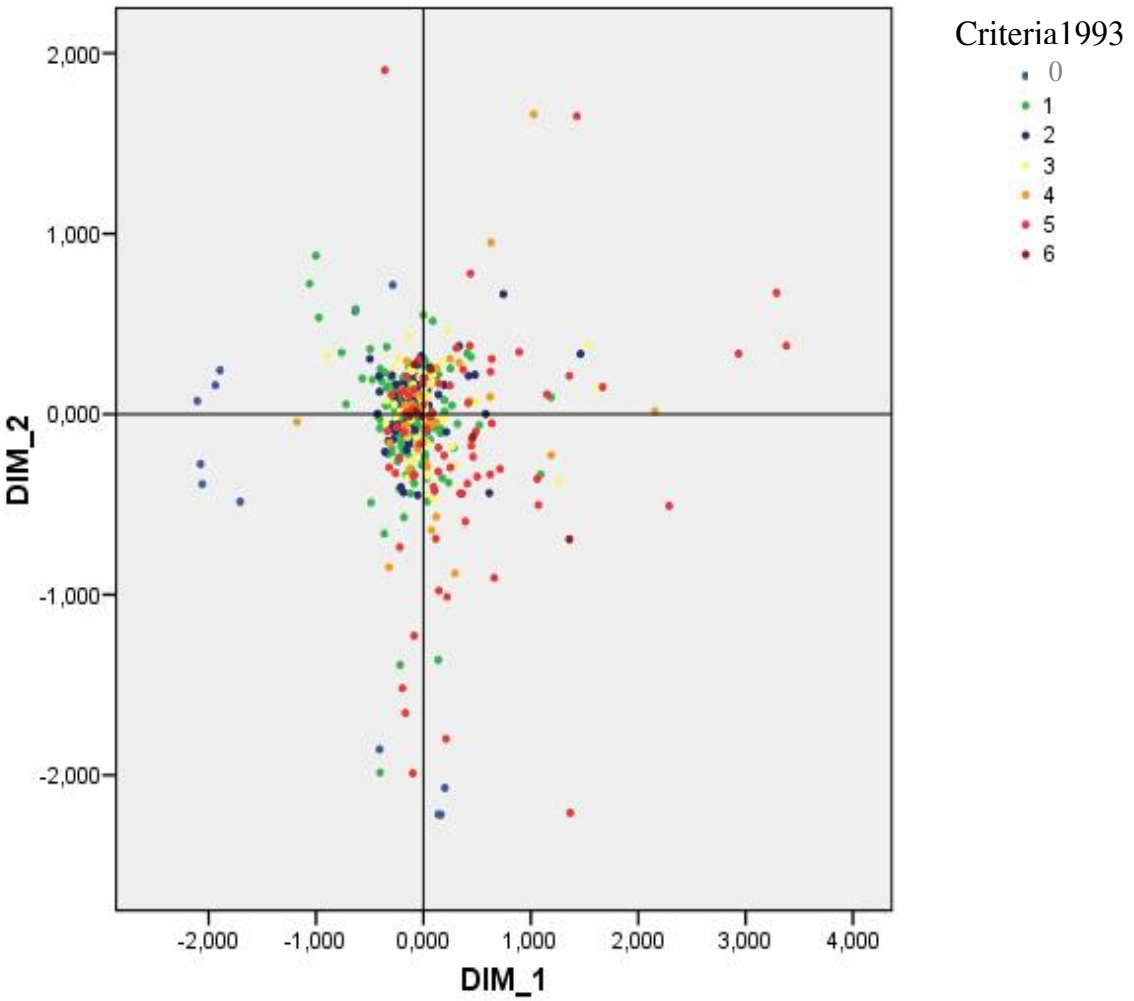
The V11 should be interpreted very carefully in both years. As previously exposed, it is only an indicative variable of a status: to be able to cover the financial costs of external debt by means of operating income achieved. It does not measure the degree of this coverage ability. It is used only to determine the existence of a risky situation or not.

2.6.2. Position displacements of companies with respect to their initial situation.

It is of our interest to analyze the starting point of the companies that have survived or are in a phase of overcoming the crisis situation. For this purpose, Figure 2.8 is a duplicate of Figure 2.6 but here the companies are represented using their positional markers of severity in the year 1993. Through this representation, we can observe the initial and final economic-financial structure profiles of the firms.

Notice that, although the companies that are in a weak crisis situation in 2002 started from that same situation in 1993, there is an outstanding group of companies that come from situations of strong crisis (5 and 6 fulfilled criteria). It is possible to affirm that there are groups of companies that share similar economic and financial structures at the beginning but they also share the same evolution patterns to walk out of the crisis.

Figure 2.8. Factorial plane 1-2 for the year 2002 with criteria fulfilled in 1993



This fact can come motivated by two reasons:

1. The crisis in its origin was weak and its development does not cause major problems.

2. Certain structural deficiencies can be faced by the companies without any difficulties and can be solved by making "routine" decisions.

There is a group of companies that started with 5 or 6 criteria in 1993 and were able to overcome the situation in 2002 by either resolving all the problems or improving their situation presenting only one criterion. In this way, the analysis detected that these companies shared of common underlying data structures in spite of indicating different

crisis symptoms. This fact would allow affirming that there are some identity signs in the companies that make them more propitious to solve a crisis situation in spite of showing certain symptoms. These companies did not have an economic achievement deficiency (so presenting a light crisis) or it was not their most important deficiency (so presenting a strong crisis).

Table 2.9 assembles the number of companies in each crisis-zone for the year 1993 and 2002. Each zone defines the characteristics of the economic and financial of the companies located inside. These characteristics are the result of the interpretation of the variable representativeness in each dimensional space.

Table 2.9. Firm distribution in each crisis-zone

		year 1993							
		Safety zone		Resource generation zone		Reaction Path zone		Danger zone	
		Weak crisis	Strong crisis	Weak crisis	Strong crisis	Weak crisis	Strong crisis	Weak crisis	Strong crisis
year 2002	Safety zone	124	-	156	13	29	12	9	25
	Danger zone	24	-	37	4	23	37	4	27
	Total	148	-	193	17	52	49	13	52

82% of the companies that in 1993 were positioned in the healthy zone (right part of dimension 1) are placed in the same healthy zone in the 2002 chart. 42% of these companies derive from the so-called safety zone and 58% from the Resource generation zone. Many of them could resolve the crisis situation in spite of starting from a complicated group of symptoms (4% of them showed a severe crisis based on the selection criteria). These companies did not present deficiencies of economic performance and they are ability to generate resources. This fact may have allowed them to be placed in a better position and to improve their position. A total of 100% of the companies that in 1993 were located in the safety zone, presented a weak crisis (1, 2 or 3 criteria). 84% of them maintain their placement in this safety zone in the year 2002, confirming the idea that a weak crisis is easier to resolve or it can be "self-healed". 76% of the companies that in 1993 were located in the healthy zone (specifically in the Resource Generation zone) and presenting a severe crisis (4 or more criteria) are also

located in the safety zone of the 2002 chart. This movement confirms the fact that retaining certain symptoms of difficulties does not condition the underlying structure. These companies shared similar profiles with the ones that had fewer criterions and have evolved in a similar way, mainly improving their situation.

More than half of the companies that in 1993 presented damaged economic and financial structures, together with income generation issues, are mainly positioned on the right of dimension 1 in 2002. For these companies the crisis process seems to be "not reversible". The displacement of companies that in 1993 presented the same damaged structure but moved towards the "safety zone" (left part of the 2002 chart), was mainly achieved through the effort made during the crisis period. This effort can be measured by the ratio Net Income/Total Assets which reflects the economic action and the adjustments measures taken from the directive board of the company facing a crisis situation.

The Reaction Path zone has a similar number of firms in weak crisis and severe crisis in 1993. Nevertheless, the evolution towards the danger zone in 2002 is more notable (60% of the companies). This fact allows us affirming that the financial viability is not sufficient if it is not done together with an accurate economic performance in order to generate income and Cash flow for the debt payments.

Finally, we cannot notice any remarkable movements for the companies that in 1993 were positioned in the danger zone. This fact implies very similar results for the companies that resolved their situation and those that worsened their position. 52% of them have shifted towards the healthy zone in the year 2002, even when presenting a severe crisis in 73% of these cases. This is certainly a group of interest for future research as they are companies with similar deficit situation and symptoms but with a very different evolution. The evolution process followed by these firms proves that the crisis situation can be efficiently managed, despite of the starting severity degree.

Regarding the initial and final positions, Table 2.9 indicates:

- Firms that present a stable economic and financial situation are mainly grouped as in weak crisis based on the criteria widely accepted.
- The number of criteria initially used to classify a firm as being in crisis (weak or strong) does not seem to determine the evolution process.

- An accurate economic performance (profitability and the ability to generate resources) is a fundamental factor in fighting a crisis situation.

2.7. Conclusions

Some weak crisis situations tend to show a natural evolution throughout the "exit" and may be solved by simply making "routine" decisions. In our study, an important group of companies that did resolve the situation started from a weak crisis in the year 1993 with deficiencies mainly related to the financial structure in the short term. The "momentary" character of these situations may be one of the reasons that these companies end up in a similar situation at the end of the period of analysis.

The interesting part is when companies that start off a critical situation are been able to resolve it. This allows considering that failure is a reversible process and it is not necessarily degenerative if the company is able to achieve an effort in its economic performance. However, the situations of harsh or severe crises tend to generate those same situations throughout the years. Most of the companies with similar "degenerated" economic and financial structures are more exposed to an evolutionary-degenerative process although they maintain themselves in the market throughout the years.

The evidence shows that the companies that have resolved the crisis situation:

1. Have achieved an important effort in their *economic* performance during the crisis and this effort has allowed them to reinforce their situation.

2. Shared common structure characteristics with companies that had less problems and slighter symptoms of crisis.

This fact allows affirming that the symptoms are only manifestations of an underlying situation. The deficiencies and gravities of this situation are the factors that determine the changes in the crisis situation. Severity of the initial situation does not have to be a crucial factor in the outcome of the crisis and distressed firms with remarkable financial reaction capability and/or a solid financial structure evolve mainly toward a healthy zone.

It is to consider that, none of the firms identified as in a financial distress situation in 1993, and in conformity with the selected sample, incurred in a bankruptcy process during the period analyzed.

It would be interesting to analyze the differences in profiles between firms that faced some financial distress situation and managed to recover and those that being in the same situation did not recover. The next step of this research could be to identify the relationship between some control variables such as size, industry, macroeconomic factor, etc. and the possibility of revolving the situation. In addition, the fact that the efforts in performance and behavior during a crisis situation are important features of a positive outcome would make it interesting to analyze to what extent the "management" of the crisis process determines this outcome.

References

Altman, E. and Hotchkiss, E. (2006), "Corporate Financial Distress and Bankcrupty", Wiley, Hoboken, New Jersey.

Altman, E. I. (1968), "Financial ratios, discriminant analysis and the prediction of corporate failure", *Journal of Finance*, Sept.

Arogyaswamy, K., Barker, V.L. III and Yasai-Ardekani, M. (1995), "Firm turnarounds: an integrative two-stage model", *Journal of Management Studies*, 32 (4), pp. 493-525.

Asquith, P., Gertner, R. and Scharfstein, D. (1994), "Anatomy of Financial Distress: An Examination of Junk-Bond Issuers", *The Quarterly Journal of Economics*, 109, pp. 625–658.

Geiger, M.A., Raghunandan, K. and Rama, D.V. (1995), "Reporting on going concern before and alter SAS n 59", *The CPA Journal online*, 53.

Gilbert, L.R., Menon, K.I. and Schwarz, K.B. (1990), "Predicting Bankruptcy for firms in Financial distress", *Journal of Business Finance and Accounting*, 17 (1), pp. 161-171.

Graveline, J. and Kokalari, M. (2008), "Credit Risk", Working paper, *The Research Foundation of CFA Institute*.

Jostarndt P., (2006), "Financial Distress, Corporate Restructuring and Firm Survival: An Empirical Analysis of German Panel Data", Dissertation Universität München.

Kahl, M. (2001), "Financial Distress as a Selection Mechanism: Evidence from the United States", Paper 16, UC Los Angeles, Anderson School of Management.

Kruskal, J.B. and Wish, M. (1984), "Multidimensional Scaling", Sage, London.

Kruskal, J. B. (1964), "Nonmetric multidimensional scaling: a numerical method" *Psychometrika,* 29, pp. 115–129.

Mar Molinero, C. and Serrano-Cinca, C. (2001), "Bank failure: a multidimensional scaling approach", *The European Journal of Finance*, 7, pp. 165-183.

Mar Molinero, C. and Ezzamel, M. (1991), "Multidimensional Scaling Applied to Corporate Failure", *Omega*, 19 (4), pp. 259-274.

Mutchler, J.F. and Williams, D.D. (1990), "The relationship between audit technology, client risk profiles, and the going-concern opinion decision", *Auditing*, 9 (3), pp. 39-45.

Mutchler,J.F. (1985), "A Multivariate analysis of the auditor's going-concern opinion decision", *Journal of Accounting Research*, 23 (2), pp. 668-682.

Neophytou, E. and Mar Molinero, C. (2005), "Financial ratios, Size, Industry and Interest Rate Issues in Company Failure: An Extended Multidimensional Scaling Approach", Working Paper 100, Kent Business School.

Neophytou, E. and Mar Molinero, C., (2004), "Predicting Corporate Failure in the UK: A multidimensional Scaling Approach", *Journal of Business Finance & Accounting*, 31 (5), pp. 677-709.

Ooghe, H. and Prijcker, S. (2008) "Failure processes and causes of company bankruptcy: a typology", *Management Decision*, 46 (2), pp. 223 – 242.

Pearce, J.A. and Robbins, K. (1993), "Toward improved theory and research on business turnarounds", *Journal of Management*, 19, pp. 613-636.

Peña, D. (2002), "Análisis de Datos Multivariantes", MacGraw Hill.

Poston, K.M., Harmon, W.K. and Gramlich, J.D. (1994), "A test of financial ratios as predictors of turnaround versus failure among financially distressed firms", *Journal of Applied Business Research*, 10 (1), pp. 41-57.

Raghunandan, K. and Rama, D.V. (1995), "Audit reports for companies in financial distress: Before and after SAS Nº 59", *Auditing*, 14 (1), pp. 50 -16.

Routledge, J. and Gadenne, D. (2000), "Financial distress, reorganization and corporate performance", *Accounting & Finance*, 40, pp. 233–259.

Smith, M. and Graves, C. (2005), "Corporate turnaround and financial distress", *Managerial Auditing Journal*, 20 (3), pp. 304 – 320.

Turetsky, H. and Mcwewn, R.A. (2001), "An Empirical Investigation of Firm Longevity: A model of the Ex Ante Predictors of Financial Distress", *Review of Quantitative Finance and Accounting*, 16, pp. 323-343.

APPENDIX I

A. Descriptive Statistics for the variables (year 1993)

Variable	*N*	*Minimum*	*Maximum*	*Mean*	*Std. Deviation*
V1	524	-0,757	115,780	2,192	7,094
V2	524	0,112	70,667	3,031	5,832
V3	524	0,000	7,088	1,073	0,859
V4	524	-2,008	0,405	-0,044	0,210
V5	524	-1,903	0,632	0,009	0,197
V6	524	-13,096	0,796	-0,285	1,113
V7	524	-1,126	0,986	0,214	0,294
V8	524	-1,954	0,418	0,004	0,207
V9	524	-1,589	0,444	0,013	0,183
V10	524	-3,123	0,986	0,416	0,323
V11	524	-520,890	8.161,000	179,229	750,448
V12	524	-2,954	0,589	0,014	0,229

B. Descriptive Statistics for the variables (year 2002)

Variable	*N*	*Minimum*	*Maximum*	*Mean*	*Std. Deviation*
V1	524	-0,855	33,560	1,537	3,245
V2	524	0,077	52,094	2,759	4,862
V3	524	0,000	5,677	1,059	0,879
V4	524	-2,280	1,171	-0,043	0,257
V5	524	-2,217	0,588	0,014	0,199
V6	524	-19,453	1,048	-0,405	1,933
V7	524	-1,752	0,950	0,175	0,298
V8	524	-2,231	1,206	0,009	0,246
V9	524	-1,789	0,384	0,043	0,179
V10	524	-5,912	0,971	0,382	0,412
V11	524	-3.307,000	18.204,000	317,030	1.617,447
V12	524	-2,498	0,567	0,003	0,223

C. Bivariate Correlations of the Variables (year 1993)

		V1	V2	V3	V4	V5	V6	V7	V8	V9	V10	V11	V12
V1	Pearson Correlation	1											
	Sig. (2-tailed)												
V2	Pearson Correlation	,555(**)	1										
	Sig. (2-tailed)	,000											
V3	Pearson Correlation	-,194(**)	-,196(**)	1									
	Sig. (2-tailed)	,000	,000										
V4	Pearson Correlation	-,087(*)	-,134(**)	,027	1								
	Sig. (2-tailed)	,047	,002	,540									
V5	Pearson Correlation	-,147(**)	-,203(**)	,142(**)	,928(**)	1							
	Sig. (2-tailed)	,001	,000	,001	,000								
V6	Pearson Correlation	-,052	-,081	-,039	,690(**)	,696(**)	1						
	Sig. (2-tailed)	,231	,064	,377	,000	,000							
V7	Pearson Correlation	,296(**)	,552(**)	-,086(*)	-,150(**)	-,255(**)	-,069	1					
	Sig. (2-tailed)	,000	,000	,048	,001	,000	,116						
V8	Pearson Correlation	-,110(*)	-,172(**)	,036	,987(**)	,916(**)	,668(**)	-,200(**)	1				
	Sig. (2-tailed)	,012	,000	,415	,000	,000	,000	,000					
V9	Pearson Correlation	-,149(**)	-,230(**)	,180(**)	,709(**)	,779(**)	,580(**)	-,432(**)	,734(**)	1			
	Sig. (2-tailed)	,001	,000	,000	,000	,000	,000	,000	,000				
V10	Pearson Correlation	,315(**)	,365(**)	-,331(**)	-,079	-,228(**)	,046	,599(**)	-,102(*)	-,286(**)	1		
	Sig. (2-tailed)	,000	,000	,000	,070	,000	,292	,000	,019	,000			
V11	Pearson Correlation	-,041	-,091(*)	-,081	,109(*)	,120(**)	,113(**)	-,197(**)	,106(*)	,130(**)	-,091(*)	1	
	Sig. (2-tailed)	,351	,036	,065	,013	,006	,009	,000	,015	,003	,037		
V12	Pearson Correlation	-,241(**)	-,322(**)	,268(**)	,608(**)	,709(**)	,441(**)	-,307(**)	,608(**)	,641(**)	-,268(**)	,113(**)	1
	Sig. (2-tailed)	,000	,000	,000	,000	,000	,000	,000	,000	,000	,000	,010	

** Correlation is significant at the 0.01 level (2-tailed).

* Correlation is significant at the 0.05 level (2-tailed).

D. Bivariate Correlations of the Variables (year 2002)

		V1	V2	V3	V4	V5	V6	V7	V8	V9	V10	V11	V12
V1	Pearson Correlation	1											
	Sig. (2-tailed)												
V2	Pearson Correlation	,496(**)	1										
	Sig. (2-tailed)	,000											
V3	Pearson Correlation	-,153(**)	-,181(**)	1									
	Sig. (2-tailed)	,000	,000										
V4	Pearson Correlation	-,008	-,003	,064	1								
	Sig. (2-tailed)	,856	,938	,144									
V5	Pearson Correlation	-,087(*)	-,088(*)	,113(**)	,861(**)	1							
	Sig. (2-tailed)	,045	,044	,010	,000								
V6	Pearson Correlation	-,032	,002	,010	,592(**)	,607(**)	1						
	Sig. (2-tailed)	,459	,959	,827	,000	,000							
V7	Pearson Correlation	,385(**)	,535(**)	-,068	,044	-,090(*)	,101(*)	1					
	Sig. (2-tailed)	,000	,000	,122	,309	,039	,021						
V8	Pearson Correlation	-,029	-,039	,084	,985(**)	,868(**)	,584(**)	-,001	1				
	Sig. (2-tailed)	,501	,375	,056	,000	,000	,000	,984					
V9	Pearson Correlation	-,117(**)	-,102(*)	,137(**)	,708(**)	,858(**)	,591(**)	-,103(*)	,752(**)	1			
	Sig. (2-tailed)	,008	,019	,002	,000	,000	,000	,018	,000				
V10	Pearson Correlation	,391(**)	,268(**)	-,092(*)	,275(**)	,139(**)	,278(**)	,574(**)	,269(**)	,123(**)	1		
	Sig. (2-tailed)	,000	,000	,034	,000	,001	,000	,000	,000	,005			
V11	Pearson Correlation	-,047	-,073	-,070	,106(*)	,136(**)	,082	-,115(**)	,106(*)	,110(*)	-,013	1	
	Sig. (2-tailed)	,282	,094	,107	,015	,002	,062	,009	,015	,012	,769		
V12	Pearson Correlation	-,130(**)	-,113(**)	,063	,698(**)	,872(**)	,521(**)	-,122(**)	,714(**)	,763(**)	,089(*)	,129(**)	1
	Sig. (2-tailed)	,003	,010	,151	,000	,000	,000	,005	,000	,000	,042	,003	

** Correlation is significant at the 0.01 level (2-tailed).

* Correlation is significant at the 0.05 level (2-tailed).

E. Total Variance Explained for the year 1993

	Initial Eigenvalues			Extraction Sums of Squared Loadings		
Component	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	4,973	41,441	41,441	4,973	41,441	41,441
2	2,269	18,910	60,351	2,269	18,910	60,351
3	1,134	9,447	69,798	1,134	9,447	69,798
4	,924	7,702	77,500			
5	,788	6,567	84,067			
6	,490	4,083	88,150			
7	,438	3,650	91,800			
8	,383	3,192	94,992			
9	,326	2,720	97,712			
10	,198	1,650	99,362			
11	,067	,554	99,917			
12	,010	,083	100,000			

Extraction Method: Principal Component Analysis.

F. Component Matrix* for the year 1993

	Component		
	1	2	3
ZV1**	-,296	,590	-,049
ZV2	-,395	,669	,096
ZV3	,202	-,392	,661
ZV4	,888	,360	,014
ZV5	,940	,214	,062
ZV6	,702	,399	-,065
ZV7	-,449	,638	,318
ZV8	,898	,315	,006
ZV9	,861	,035	,011
ZV10	-,350	,683	-,032
ZV11	,185	-,080	-,743
ZV12	,785	-,071	,151

Extraction Method: Principal Component Analysis.
* 3 components extracted.
** ZV indicates the standardized variables

G. Total Variance Explained for the year 2002

	Initial Eigenvalues			Extraction Sums of Squared Loadings		
Component	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	4,790	39,916	39,916	4,790	39,916	39,916
2	2,433	20,274	60,190	2,433	20,274	60,190
3	1,085	9,042	69,232	1,085	9,042	69,232
4	,864	7,203	76,435			
5	,752	6,269	82,704			
6	,598	4,984	87,688			
7	,497	4,145	91,833			
8	,395	3,291	95,124			
9	,284	2,370	97,494			
10	,225	1,872	99,366			
11	,065	,544	99,910			
12	,011	,090	100,000			

Extraction Method: Principal Component Analysis.

H. Component Matrix* for the year 2002

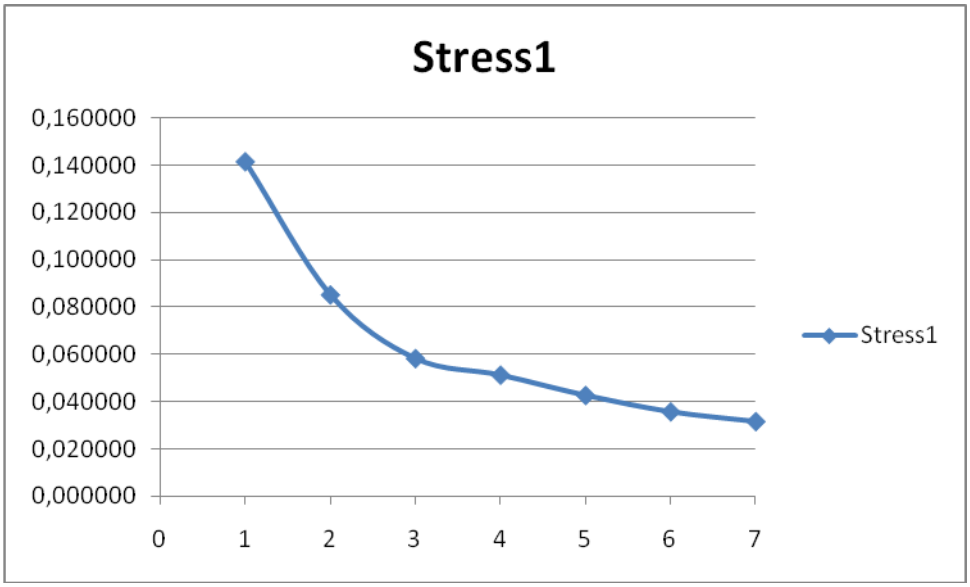
	Component		
	1	2	3
ZV1**	-,091	,725	-,081
ZV2	-,090	,749	-,052
ZV3	,112	-,260	,707
ZV4	,920	,110	,012
ZV5	,959	-,059	-,002
ZV6	,719	,144	-,007
ZV7	-,037	,821	,173
ZV8	,933	,070	,021
ZV9	,882	-,090	,037
ZV10	,245	,726	,061
ZV11	,158	-,123	-,733
ZV12	,862	-,116	-,047

Extraction Method: Principal Component Analysis.
* 3 components extracted.
** ZV indicates the standardized variables

I. Changes in Stress1 level when dimensionality increases (year 2002)

Dimensions	$Stress_1$
1	0,141454
2	0,085077
3	0,058112
4	0,051121
5	0,042491
6	0,035536
7	0,031408

J. Stress1 Elbow Diagram for the year 2002



CHAPTER III. OVERCOMING DECLINE IN FIRMS FACING FINANCIAL DISTRESS: DETERMINANT FACTORS OF RECOVERY PROCESS

Chapter III. Overcoming decline in firms facing financial distress: Determinant factors of recovery process

3.1. Introduction

The results of the previous chapter have shown that the initial crisis situation of firms may influence the evolution process. Certain situations of weak crisis appear to follow a natural evolution in a positive sense, such that firms manage to save their circumstances without major effort, subsequently placing themselves in a healthy scenario. In the same line, certain strong crisis situations seem to follow a degenerative process, maintaining their deficient initial position or even worsen it. However, the results also evidence that, in many cases, firms with different crisis symptoms shared structural characteristics which made them evolve in the same direction.

The model exposed in Chapter I proposed that the Post-distress status is a consequence of the initial severity degree of the crisis, as well as of certain characteristics that allow acting as enhancer or reducers of the final resolution of a crisis process. Nevertheless, the model also included other series of factors such as the different strategies that may successfully guide a company through the exit of the crisis situation, or issues associated with the behavior during the in-distress period.

The evidence gathered in the studies exposed in Chapter I, regarding the fact that firms resolving their crisis situation show high profitability during recovery process is also observed in the results obtained in Chapter II. The return to a healthy scenario was associated with performance ratios. This matter appears to be a warranty in order to maintain the new status.

Post-distress Status assesses not only if a firm resolves the initial crisis situation, but also the quality of firms' welfare accounting for the risk of re-entry into distress. This line permits to consider a Fitness indicator discriminating between well-performers, which just exit the crisis situation, and best-performers, which are located in a new healthy scenario minimizing the likelihood to re-enter in distress

This approach allows us to test the model of recuperation of companies facing a financial distress situation when the Fitness in a post-distress status could be influenced

by specific variables related to initial structural characteristics of a firm as well as by strategies employed during a distress process.

3.2. The hypotheses

Continuing with the exploratory results of the evolutionary patterns analysis in a financial distress situation, and in accordance with the recovery model exposed in Chapter I, the following hypotheses will be tested:

- *H1: Severity degree of financially distressed firms is likely associated with the post distress status.*

- *H2: Reaction Capability of distressed firms is positively related to a fit final position after recovery process.*

- *H3: Performance in-distress is positively related with the welfare of the post distress status.*

- *H4: Retrenchment strategies have a positive influence on the outcome of a distressed situation.*

- *H5: Size of financially distressed companies is associated with the final position after recovery process.*

3.3. The sample

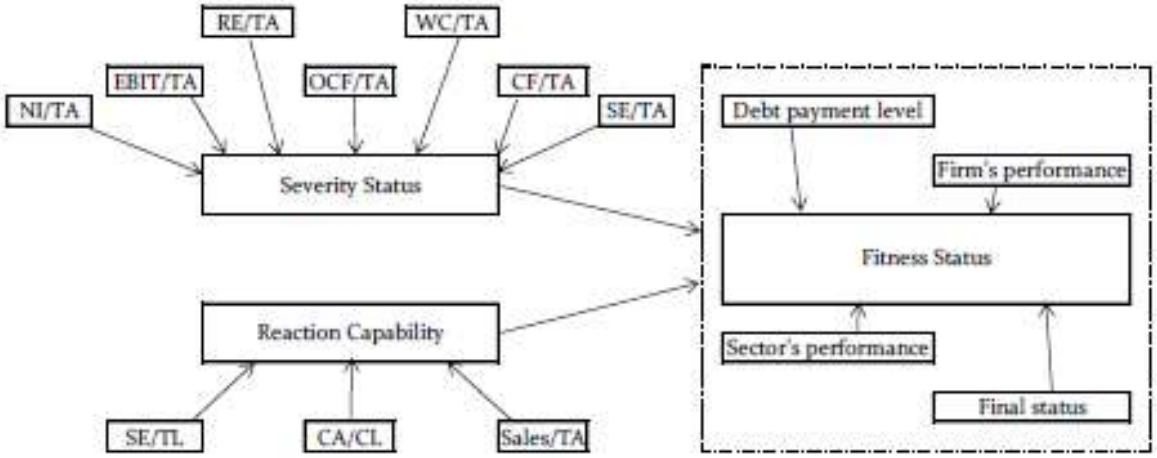
To test the proposed hypotheses, we use the same sample of 526 US firms identified as being in a distressed situation. Considering the wider scenario of Poston *et al.* (1994), our analysis will be performed during the years 1993 until 2000. The US economy experienced an economic expansion during the analyzed period. According to the National Bureau of Economic Research (2001), a peak in business activity occurred in the U.S. economy in March 2001. A peak marks the end of an expansion and the

beginning of a recession[1]. So, the year 2001 was marked by events like the Dot-Com Bubble, Stock Market Crash, the loss of investor's confidence in the Stock Market or the emergence of corporate fraud and corporate governance. The September 11, 2001 attacks also, may have been an important factor in turning this decline in the economy into a recession. The financial data for the years after 2000 would be, to a greater or lesser extent, influenced by all these external factors. Stopping the analysis in the year 2000 could be more appropriate for the stability of the same.

3.4. The variables

Severity Status, Reaction Capability and *Fitness Status*, as representative indicators of post-distress position, in the model proposed recovery model in Figure 1.1 (Chapter I), are built by gathering information given by some individual variable-indicators according to the features evaluated. The complete picture integrating the model and variables is showed in Figure 3.1.

Figure 3.1. Variables of influence in a recovery process



[1] The NBER does not define a recession in terms of two consecutive quarters of decline in real GDP. Rather, a recession is a significant decline in economic activity spread across the economy, lasting more than a few months, normally visible in real GDP, real income, employment, industrial production, and wholesale-retail sales. http://www.nber.org/cycles.html

Severity status (SEV_STAT) should be understood as an index assessing the degree of severity distress by seven financial ratios. These ratios correspond to the 7 symptom-indicators used to classify a firm as being in financial distress previously described, all divided by Total Assets in order to eliminate the size effect. Ratios such as: Net Income/Total Assets, EBIT/Total Assets and Retained Earnings/Total assets, representatives of the economic performance, are also commonly used to determine the existence of a decline phase in turnaround and recovery research (Pearce and Robins 1993, Arogyaswamy *et al.* 1995, Smith and Graves 2005). Negative Operating Cash Flow is also an indicator of liquidity deterioration and of financial distress probability (Anandarajan *et al.* 2001, Bell and Tabor 1991, John 1993). These seven indicators should be considered in a negative direction with respect to financial distress. That is, the lower value of the indicators, the worse the starting situation of the firm. In the same way, the more the number of negative indicators in a firm, the higher the crisis severity degree will be.

Reaction capability is evaluated through three indicators: Sales/Total Assets (TURNOV), Shareholders Equity/Total Liabilities (FIN_AUT) and Current Assets/Current Liabilities (SOLV). The first one reflects the capacity of the company to enhance profitability while the other two indicators are linked to the financial structure of a firm and enable us to value its self-sufficiency and solvency. Together, these three variables measure the capacity of a firm to obtain external and additional funds or to reorganize its debts, the short term response capacity and the ability to generate resources.

Fitness status (FIT_STAT) is defined as an index measuring the final health position on an objective and on a quality base as well, by means of 4 variables. Final Position is a categorical variable which indicates the existence or not of a crisis situation, when the firm still presents any symptom of distress. This variable takes value 0 if the firm exits successfully and doesn't present distress signals or value 1 otherwise. Additionally, to measure the health quality of this position, we follow the approach of Jostarndt (2006) when he identifies three factors that could cause financial distress: excessive leverage, a poor firm-specific operating performance and an industry downturn. These factors could be interpreted as indicators of the incapacity of a firm to

generate cash flow which may influence a continuous economic and financial deterioration. The variables are defined as follows:

- *Debt payment level:* it permits the evaluation of the effects that a higher debt level of a firm has on cash flow generation, with respect to the industry where it operates. It indicates the level of interest payment the firm is paying compared to the median of the sector. If the level is above the median, the firm is paying more than other firms, so it should reduce it.

- *Firm Performance:* It measures the effects that a poor performance, lower than the median of the industry, has on cash flow generation. It measures the operating income of a firm compared to the median of the sector. It indicates if the firm is performing above or below the median of the sector.

- *Sector performance:* it allows analyzing to what extent the trend of the performance of the sector where the firm operates influences its capacity to generate cash flow if it behaved as the industry average. This item measures the improvement or the deterioration of a sector's performance, compared to its performance the year before.

(For further details on all variables correlations and calculation refer to Appendix II A and II B, respectively).

These three variables measure the risk of distress which could be the consequence of leverage problems or economic issues, including the downturn of the industry. The former three defined ratio-indicators should be understood in a negative sense, thus, the higher the three ratios are, the worse the quality position of the firm and the greater the probability of financial distress. Therefore, Fitness Status variable measures the position of a firm *t* years after the financial distress has been detected, allowing to evaluate the performance in managing a difficult situation.

Severity Status and *Fitness Status* indexes could be interpreted as two composite indicators gathering the information of 7 and 3 individual ratios, respectively. To overcome some of the drawbacks of aggregated indexes, such as the degree of

subjectivity in attribution of weights to each individual component (Munda 2005, Messer *et al.* 2006, Munda and Nardo 2009, Ramzan *et al.* 2008), we decided to use Data Envelopment analysis to summarize the complex information in just one index (Nardo *et al.* 2005a, Cherchye *et al.* 2008, Dyckhoff and Allen 2001). DEA is a non-parametric performance measurement technique, based on a productivity approach, widely used to evaluate the relative efficiency of *Decision Making Units* (Cooper *et al.* 1999, Seiford 1997, Gattoufi *et al.* 2004, Sherman and Zhu 2006). However, this methodology has also been used to create indexes combining different components by means of an optimization process, when the structure of weights of these components is not known, and without making any assumption concerning the internal operations of a DMU (Cherchye *et al.* 2006, Zhu 2000 and 2001, Puig-Junoy 1998, Sexton and Lewis 2003). Thus, both Severity Status and Fitness Status scores are obtained applying a DEA model without explicit inputs, called DEA-WEI models by Liu *et al.* (2011). This formulation, discussed by Lovell and Pastor (1999), considering a model with only outputs and a single constant input, has been used by Chen (2002) and Cooper *et al.* (2009), and it is similar to other approaches as DEA-R (Despic *et al.* 2007) or DEA-Index composite (Cherchye *et al.* 2008).

Fitness Status use as DEA variables a series of indicators that measure negative features of a firm and they are also linked to the possibility of presenting a marked financial distress situation. This consideration is in agreement with the called pessimistic DEA approach, where the efficiency frontier contains, using Azizi and Ajirlu (2011) terminology, the worst-practisers as efficient in being poor-performers. In this way, DMUs scoring unity or close to unity levels will be the ones with higher degree of severity in their financial distressed situation. Furthermore, Fitness Score DEA manages a categorical variable - Final Status - indicating the existence or not of distress symptoms. In this sense we follow the approach of Banker and Morey (1986) concerning the treatment of exogenously fixed data.

To measure the strategies and the behavior of firms during *distress,* profitability and downsizing actions have been included in the analysis. With regard to profitability, we use ROA in the last year of the analysis (ROA) and the average of its variations in the previous years (ROA_AVG) to measure the impact of efficiency oriented strategies

to the final post-distress position. Concerning downsizing actions, variations in total assets during previous year are included to measure the impact of retrenchment strategies (RET_STG).

Finally, to control the size effect (SIZE), natural logarithm of sales [ln(sales)] is included in the analysis in order to assess the influence of size on the possibility to return on a healthy scenario.

3.5. The methodology

The DEA score Fitness Status will be treated as a dependent variable in order to analyze to what extent post-failure position could be explained by issues such as severity, reaction capability or certain strategies implemented by the firms. Many different approaches can be found in the literature when a DEA score is used as a dependent variable of a regression to relate "efficiency" to the factors and study their influence on the former. The consideration of the DEA score as a censored variable (showing values between zero and unity) has been the argument for using regression censored models such as Tobit. On the other hand, Mancebón and Molinero (2000) do not share this opinion and affirm that efficiency takes natural limits of zero and one and they estimate a model of the log type to explain inefficiency. In the same line, Puig-Junoy (1998) considers that DEA scores do not fit the theory of sampling censoring for Tobit models explaining inefficiency by a multiplicative function of the explanatory variables according to Banker and Johnston (1994). In spite of recent proposals by Simar and Wilson (2007) or the two-stage analyses proposed by Banker and Natarajan (2008), McDonald (2009) affirms that when efficiency scores are treated as descriptive assess of relative performance, OLS is an unbiased and consistent estimator to easily evaluate the influence of factors to this non-parametric performance measure. Hence, in line with McDonald (2009), the following functional form is exposed:

$$\text{Post-distress Status} = f(SEV\_STAT, FIN\_AUT, SOLV, TURNOV, ROA, ROA\_AVG, RET\_STG, SIZE)$$

Poston *et al.* (1994) consider that a 7-8 years period is appropriate for a company to get ahead of a crisis situation. On the contrary, Kahl (2001) or Smith and Graves (2005) contemplate that a four-year period should be sufficient to detect if a firm in a distressed situation can successfully return to a healthy scenario. Considering these arguments, the above regression model to explain the post-distress position will be applied in both in a 3 and 8 year scenario, performing the analysis considering the outcome in a short and long term. Indeed, equation [1] reflects the final regression model applied for both 3 year and 8 year analysis. The regression has also been performed for each sector separately, in order to detect if there are differences in recovery models associated to industry. The analyzed sectors are: Consumer Discretionary, Consumer Staples, Energy, Industrials, Information Technology, Materials and Telecommunication Services.

$$[1]\ \text{Fitness Status} = \beta_1 SEV\_STAT + \beta_2 FIN\_AUT + \beta_3 SOLV + \beta_4 TURNOV + \beta_5 ROA + \beta_6 ROA\_AVG + \beta_7 RET\_STG + \beta_8 SIZE + \varepsilon$$

3.6. Empirical results and discussion

The initial results of post-distress position (see Table 3.1) show that 8 years after a financial distress has been identified, a small number of firms (3 in concrete) are considered to be the worst performers and with a high distress risk according to the variable Fitness Status. In all the three cases, the firms started from a weak crisis situation in 1993, first year of analysis, presenting only one of the 7 symptoms used to classify this initial position. However, a considerable number of firms (37% of the total) obtain satisfactory results in the final year of the analysis, showing a Fitness Status close to zero (score < 0.0009). It is to remind that the variable Fitness Status, obtained by using a DEA methodology, is raised on a pessimistic sense. Hence, the scores near or equal to unity identify poor performers and, on the contrary, the scores near to 0 identify good performers. Approximately, 3 out of 4 of these firms presented a weak crisis situation in the first year. Clearly, it could be a positive insight in arguing that this weak crisis is a favorable condition for the evolution of the situation. In the same line, of 190 firms classified as "good performers", 45% present a weak crisis in the last year of the analysis and a 40% was positioned in a healthy zone, showing no symptoms of distress.

Considering the assessment of various authors, stating that a 3-4 year period would be sufficient to display the recovery signals, we calculated the Fitness Status variable for an intermediate period, a three year scenario. In this case, the firms listed as poor performers increase to 5 firms, a number not that different from the 8 year scenario. Yet, the percentage of firms that three years after the classification of the distress situation obtained favorable Fitness Status Scores (<0.0001) reached 23%, compared to a 12% in the last year of analysis. Considering these results, we could actually contemplate that a 3-4 year period would be appropriate to recover a financially distressed situation. However, regarding the comparative results of the score frequency distribution exposed in Table 3.1, better results are obtained in the 8 year scenario so that we can affirm that the stabilization of the entire sample occurs in the long run**.** This situation could be explained by the fact that the firms detecting certain symptoms of adversity react by using "bump" measures which produce satisfactory results in the short run but they also reduce the possibility of the firm to maintain this stable situation. We could figuratively denominate this phenomenon as "*spring recovery process*".

Table 3.1. Score Frequency Distribution

	3-year window	8-year window
Firms scoring unity (Poor performers)	5	3
Firms scoring near 0 (< 0.0001)	124	72
Average	,053654	,025980
Standard Deviation	,1434524	,1045733
25 percentile	,000200	,000375
50 percentile	,003290	,001959
75 percentile	,031421	,010866

In spite of the fact that almost 50% of the companies do not present any distress symptoms three years after starting the analysis, the Fitness Status of the firms is better when considering the 8-year scenario. In particular, the average of the 8-year period is almost half the value of the 3 year period. Also, in 2000, 50% of the firms do not show

any crisis signal. However, these are not firms that have abandoned the critical situation in previous years. During the analyzed period, only 94 firms (18%) exit distress and do not enter again. This is the highest rate of abandon until 1997. The rest of the companies appear to survive in a continuous more or less severe crisis situation (42%) or living a nonstop enter/exit situation (40%), confirming the spring effect statement.

The results of the Wilcoxon-test between two related paired samples allow affirming that the values of the Fitness Status variable, measuring the quality of a healthy/distressed new position are distinct between scores of the 3-year scenario and of the 8-year scenario and lower in the latter case with a significance level of 0.000. According to these results and the statements on the evolution of distress symptoms of firms during the analyzed period, it could be considered that a long term, as Kahl (2001) affirms, actually permits an effective outcome of a crisis situation.

The regression results for the long term scenario (Table 3.2) offer satisfactory levels of goodness of fit for the global model (R^2 = 66,4%) and for the individual sectors as well (between 61,1% for Consumer Discretionary and 91,2 % for the Materials industry). In the case of the three year scenario (Table 3.3), the global model reaches a R^2 = 62,3% while the individual sectors obtain values between 89,5% for Information Technology and 65,4% for Consumer Staples, which is the worst represented. In both tables, D.V. refers to the Dependent variable and the sectors analyzed are: CD (Consumer Discretionary), CS (Consumer Staples), EN (Energy), IND (Industrials), IT (Information Technology), MA (Materials) and TS (Telecommunication Service)

3.6.1. Determinants of the post-distress position

Severity appears to be significant in the general model (p = 0.000) in explaining the performance of firms 8 years after the distress symptoms have been identified. However, the negative sign of its coefficient indicates that firms starting from a worse situation present a lower distress risk and a more solid position at the end of the analysis. These results permit affirming the hypothesis that the severity degree does not determine a negative outcome of the situation or a negative survival capacity in

Table 3.2. Regression coefficients and level of significance for the 8 year scenario

		CD		CS		EN		IND		IT		MA		TS		Global	
8-year scenario R^2		61,10%		78,70%		72,60%		82,20%		88,20%		74,90%		91,20%		66,40%	
D.V: Fitness Status		Beta	Sig.	Beta	Sig.	Beta	Sig.	Beta	Sig.	Beta	Sig.	Beta	Sig.	Beta	Sig.	Beta	Sig.
Independent variables	SEV_STAT	-0,026	0,483	0,043	0,696	-0,047	0,714	-0,076	0,226	-0,107	**0,065**	-0,139	0,182	-0,078	0,755	-0,134	**0,000**
	FIN_AUT	-0,259	**0,000**	-0,111	0,384	-0,207	0,259	-0,067	0,299	-0,331	**0,000**	-0,341	**0,011**	-0,273	0,153	-0,029	0,318
	SOLV	-0,118	**0,002**	-0,224	0,292	-0,128	0,462	-0,295	**0,000**	-0,122	0,131	-0,204	0,175	0,496	0,326	-0,207	**0,000**
	TURNOV	-0,532	**0,000**	0,028	0,868	0,161	0,482	-0,417	**0,000**	-0,528	**0,000**	-0,190	0,135	0,354	0,300	-0,233	**0,000**
	RET_STG	0,028	0,395	0,180	0,244	0,280	0,106	-0,001	0,984	0,112	**0,027**	0,000	0,998	-0,289	0,440	0,003	0,903
	ROA	-0,139	**0,000**	-0,586	**0,006**	-0,572	**0,010**	0,020	0,702	-0,072	0,148	-0,437	**0,000**	-0,495	0,122	-0,093	**0,001**
	ROA_AVG	0,021	0,491	-0,121	0,333	0,015	0,879	0,012	0,763	0,077	0,107	0,070	0,486	0,335	0,136	0,024	0,338
	SIZE	-0,111	**0,074**	-0,300	0,168	-0,389	0,193	-0,242	**0,000**	-0,051	0,578	-0,089	0,579	-0,713	0,204	-0,422	**0,000**

Table 3.3. Regression coefficients and level of significance for the 3 year scenario

		CD		CS		EN		IND		IT		MA		TS		Global	
3-year scenario R^2		73,50%		65,40%		84,00%		73,30%		89,50%		68,90%		78,70%		62,30%	
D.V: Fitness Status		Beta	Sig.	Beta	Sig.	Beta	Sig.	Beta	Sig.	Beta	Sig.	Beta	Sig.	Beta	Sig.	Beta	Sig.
Independent variables	SEV_STAT	0,061	0,373	0,259	0,144	-0,180	**0,080**	-0,126	**0,053**	-0,054	0,319	0,068	0,545	-0,489	0,300	-0,062	**0,056**
	FIN_AUT	-0,256	**0,001**	-0,052	0,740	-0,061	0,545	-0,142	**0,072**	-0,395	**0,000**	-0,179	0,105	-0,379	0,200	-0,020	0,510
	SOLV	-0,016	0,813	-0,408	**0,073**	-0,467	**0,002**	-0,186	**0,054**	-0,125	**0,097**	-0,097	0,493	0,139	0,626	-0,210	**0,000**
	TURNOV	-0,312	**0,002**	0,102	0,639	-0,351	**0,041**	-0,148	0,139	-0,618	**0,000**	-0,239	0,101	-0,267	0,440	-0,362	**0,000**
	RET_STG	-0,079	0,229	0,297	**0,069**	-0,187	**0,038**	-0,101	**0,081**	-0,032	0,511	-0,164	0,106	0,135	0,489	-0,062	**0,029**
	ROA	-0,266	0,142	-0,509	0,252	0,049	0,817	-0,035	0,774	-0,326	**0,002**	-0,391	0,156	-0,439	0,728	-0,082	0,143
	ROA_AVG	0,162	0,368	0,068	0,905	-0,415	**0,044**	-0,333	**0,020**	0,306	**0,001**	0,172	0,542	0,087	0,952	0,025	0,667
	SIZE	-0,319	**0,004**	-0,447	0,282	0,455	**0,032**	-0,134	0,141	0,127	0,150	-0,235	0,215	0,121	0,853	-0,287	**0,000**

appropriate conditions. Thus, in both scenarios, the results show that our first hypothesis is supported as the association exists, yet, it is not in the same direction as in many studies. In this line, the outcomes could be coherent with two types of approach:

i) According to Moulton and Thomas (1993), the starting situation will determine the outcome of the actions to be taken more than the final result of the recovery process. In the presence of a situation strongly shortcoming, the efficiency of the actions taken will produce remarkably satisfactory results in relation to the starting position.

ii) According to Kahl (2002), the diagnosis of distress using financial indicators results in an imperfect measure of firm's feasibility to recovery. In this sense, as spotted in the results of Chapter II, companies solving their distress situation share structural patterns more than just indicative symptoms of disorder.

With regard to *Reaction Capability*, measured through financial autonomy, turnover and solvency ratios, there is lack of evidence in order to support our H2 hypothesis. In this way, a suitable level of activity that generates resources (turnover ratio) and an appropriate management of the maturity period (solvency ratio) are crucial factors for the survival in distress situations. The results of these two variables, with a significance level of p=0.000, confirms the assessment of authors such as Barker and Duhaime (1997). On the contrary, financial autonomy does not seem to be of any significance on the Fitness Status after recovery. However, the results show that the interpretation is different if we consider the global model or whether the individual industries are analyzed.

Profitability, which represents the performance during the analyzed period, was significant only when concerning the variable that measures the returns in terms of ROA and not when considering the average overall performance. This means that profitability is an important factor in representing a low risk situation. However, these results are not sufficient to conclude that continuous profitable performance is a necessary condition to overcome a difficult situation, as affirmed by Robbins and Pearce (1992) and Kahl (2001) and as a consequence we cannot support our H3 hypothesis.

Regarding the influence of retrenchment strategies, measured by means of asset variation as downsizing actions, the H4 hypothesis is not supported. In this sense, the reduction of asset level possibly depends on the capacity of the industry to maintain a required and appropriate level of activity, or maybe it depends on the fact that this variable is not a characteristic of the sector where the firm operates. In this way, similar conclusions to Sudarsanam and Lai (2001), stating that intensive restructure does not imply a greater success in a recovery process, are obtained.

As expected, company size influences the evolution of the distress process. Big firms tend to present a better situation and a lower risk after the initial distress situation, thus, the results allow supporting the H5 of this study.

3.6.2. Differences between the periods of recovery

*Variables associated wit*h *Severity, Reaction Capability* and *Size,* behave in the same way despite considering a 3-year or an 8-year scenario. Although severity reduces its level of significance (p=0.05), it is surprising that in such a short time after the financial distress classification, the financial deterioration, measured by the 7 symptoms, still shows a negative relationship with firms' risk 3 years after. This can only be explained by the fact that firms starting in worse conditions initiate stronger actions to redirect the situation. Nevertheless, and on the contrary to what occurred in the case of ROA in the 8-year scenario, the variables related to effort that measure the profitable behavior do not explain the final Fitness Status. On the other hand, retrenchment strategies, which were not selected as explicative variables in the previous model, appear with non-zero coefficients and with a p=0.029 level of significance, but with negative sign. In contrast with the starting hypothesis, downsizing actions do not seem to be associated with the decrease of financial distress risk. These results are in line with Smith and Graves (2005) suggesting that asset expansion, and not their reduction, is more likely to affect recovery. Additionally, the fact that retrenchment strategies result significant but in a negative direction for the short run analysis suggests that drastic actions taken when a distress situation is identified may imply more deterioration for the firm in the short term. Clearly, then searching efficiency through profitability oriented actions may result more effective in resolving a distress situation.

The results allow us thinking that strong cuts in a short period of time may weaken the capacity of the firm to maintain the necessary level of activity to generate resources and redirect the difficult situation. However, these results could be explained in another direction. It could be that the variable used to measure retrenchment actions is not the most suitable due to the inclusion of total assets of the firm in the calculation. In this way, if a firm increases its current assets through cash by selling their operational assets, its total assets does not change but its short term financial position will increase. This would permit understanding the negative relationship with the variable that measures the final risk position. Thus, maybe it would be appropriate to use the variation of non-current assets to measure retrenchment actions.

3.6.3. Differences between industries

The proposed model presents a satisfactory goodness of fit in explaining recovery processes when referring to activity industries, both in short and long term. However, despite the levels of the regression coefficients (approximately a 90% of explanatory capacity: 91.20% in Telecommunication Service and 89.50% in Information Technology), the results show that the model variables have higher explanatory capacity in the 3 year window analysis. In the 8 year scenario, except for Consumer Discretionary, in the rest of industries the variables have a specific influence on the post-distress position but without presenting any common pattern. In particular for Consumer Discretionary industry, all model dimensions conditioning a recovery process exposed in this paper result significant except for retrenchment strategies which remains with the trend analysis of the general model and severity status, which for this sector is not significant.

It is to be noticed that none of the variables used to measure the *Reaction Capability* determines the recovery process for the set of industries composed by: Consumer Staples, Energy, Telecommunication Service and Materials (the latter in the short run). Moreover, the recovery process in the Telecommunication Service sector does not seem to be explained by any of the variables proposed in spite of the regression coefficients obtained. On a sector level, the suggested variables have a higher explanatory power in the short run, as it can be observed in Table 4, according to the

number of significant variables and in particular in industries such as Energy, Industrials or Information Technology.

Some specific issues have to be considered in some sectors when a different behavior pattern of the significant variables is observed compared with the general model. In the Energy sector, size variable constitutes a short term handicap in the recovery process, given the positive sign of its coefficient and p= 0.032. The asset structure management is fundamental in Information Technology and Consumer Staples sectors in the long run and short run respectively given that the variable associated with retrenchment actions shows a positive sign in both cases. These results are opposite to the ones obtained in the general model as well as in the rest of the sectors where this variable resulted significant. However, in the short run, in the Energy and Industrial sector, disinvestment actions increase a post distress status more risky, given the negative sign of the coefficient. In this way, selling assets exposes to danger the recovery process in those sectors where asset investment is fundamental for their operational activity.

3.7. Conclusions

Understanding what factors affect the probability to overcome a crisis situation is crucial in order to improve the decision making process of managers. Several researches have shown that issues such as severity of the initial situation or size condition the recovery process. Moreover, implementing strategies oriented towards efficiency has also resulted to be fundamental in encountering a better and improved path.

The results obtained suggest that the final post-distress position can be explained by certain variables and under certain circumstances. First of all, the hypothesis that *Reaction Capability* of distressed firms is positively related to a fit final state after recovery was not supported. However, the results show that the interpretation is different if we consider the global model or whether the individual industries are analyzed.

Second, and in contrast with other researches, the *Severity* degree does not determine a negative outcome of the situation or a negative survival capacity in appropriate conditions. In agreement with Reaction Capability results, it is the underlying structural capacities, and not the distress symptoms, that determine the way by which a firm faces its critical situation.

When considering the difference between recovery periods (3 year and 8 year scenarios), it can be considered that a long term actually permits an effective outcome of a crisis situation. Regarding profitability, although it is an important factor in representing a low risk situation the results were not sufficient to affirm that continuous profitable performance is a necessary condition to overcome a difficult situation.

As expected, company size influences the evolution of the distress process. Big firms tend to present a better situation and a lower risk after the initial distress situation. However, regarding the influence of retrenchment strategies, there is not sufficient evidence to conclude that it has a positive influence on the outcome of a distressed situation. Finally, the industry where a firm is developing its activity has an influence on the outcome of a difficult situation. Certain sector specific characteristics may contribute or inhibit the evolution of the turnaround process and as a consequence on the outcome of the strategies implied by the firms to solve the distress.

References

Anandarajan, M., Lee, P. and Anandarajan, A. (2001), "Bankruptcy prediction of financially stressed firms: An examination of the predictive accuracy of Artificial Neural Networks", *International Journal of Intelligent Systems in Accounting, Finance & Management*, 10, pp. 69-81.

Arogyaswamy, K., Barker, V.L.III and Yasai-Ardekani, M. (1995), "Firm turnarounds: an integrative two-stage model", *Journal of Management Studies*, 32 (4), pp. 493-525.

Azizi, H. and Ajirlu, H.G. (2011), "Measurement of the worst practice of decision-making units in the presence of non-discretionary factors and imprecise data", *Applied Mathematical Modelling*, 35 (9), pp. 4149-4156.

Banker, R.D. and Natarajan, R. (2008), "Evaluating contextual variables affecting productivity using data envelopment analysis", *Operations Research*, 56 (1), pp. 48-58.

Banker, R.D. and Johnston, H.H. (1994), "Evaluating the impacts of operating strategies on efficiency in the US airline industry", In Charnes, A., Cooper, W.W., Levin, A.Y., Seiford, L.M. (Eds), *Data Envelopment Analysis: Theory Methodology and Application*. Kluwer Academic Publishers, Inc., Boston, pp. 97–128.

Banker, R.D. and Morey, R.C. (1986), "Efficiency analysis for exogenously fixed Inputs and Outputs", *Operations Research*, 34, pp. 513-521.

Barker, V.L.III and Duhaime, I.M. (1997), "Strategic change in the turnaround process: Theory and empirical evidence", *Strategic Management Journal,* 18 (1), pp. 13-38.

Bell T.B. and Tabor R.H. (1991), "Empirical analysis of audit uncertainty qualifications", *Journal of Accounting, Finance and Management*, 29 (2), pp. 350-371.

Chen, T.Y. (2002), "Measuring firm performance with DEA and prior information in Taiwan´s banks", *Applied Economics Letters*, 9, pp. 201-20.

Cherchye, L., Moesen, W., Rogge, N. and Puyenbroeck, T. (2006), "Creating Composite Indicators with DEA and Robustness Analysis: The Case of the Technology Achievement Index", Joint Research Centre. European Commission, Italy.

Cherchye, L., Moesen, W., Rogge, N., Puyenbroeck T., Saisana, M., Saltelli, A., Liska R. and Tarantola, S. (2008), "Creating composite indicators with DEA and robustness analysis: The case of the Technology Achievement Index", *Journal of the Operational Research Society*, 59, pp. 239-252.

Cooper, W.W., Ruiz, J.L. and Sirvent, I. (2009), "Selecting non-zero weights to evaluate effectiveness of basketball players with DEA", *European Journal of Operational Research*, 159, pp. 563-574.

Despic, O., Despic M. and Paradi, J.C. (2007), "DEA-R: ratio-based comparative efficiency model, its mathematical relation to DEA and its use in applications", *Journal of Productivity Analysis*, 28 (1), pp. 33-44.

Gattoufi, S., Oral, M. and Reisman, A. (2004), "Data Envelopment Analysis Literature: A Bibliography Update (1951-2001)", *Socio-Economic Planning Sciences*, 38, pp. 159-229.John, K. (1993), "Managing financial distress and valuing distressed securities: A survey and a research agenda", *Financial Management*, 22 (3), pp. 60-76.

Jostarndt, P. (2006), "*Financial Distress, Corporate Restructuring and Firm Survival: An Empirical Analysis of German Panel Data*", Dissertation Universität München.

Kahl, M. (2002), "Economic Distress, Financial Distress, and Dynamic Liquidation", *Journal of Finance*, 57, pp. 135-168.

Kahl, M. (2001), "Financial Distress as a Selection Mechanism: Evidence from the United States", Anderson School, Finance Working Paper No. 16-01. Available at SSRN: http://ssrn.com/abstract=288361 or http://dx.doi.org/10.2139/ssrn.288361

Liu, W.B., Zhang, D.Q., Meng, W., Li, X.X. and Xu, F. (2011), "A study of DEA models without explicit inputs", *Omega*, 39, pp: 472-480.

Lovell K.C.A. and Pastor, J.T. (1999), "Radial DEA models without inputs or without outputs", *European Journal of Operational Research*, 118, pp. 46-51.

Mancebón, M.J. y Mar Molinero, C. (2000), "Performance in Primary Schools" *Journal of the Operational Research Society*, 51, pp. 131-152.

McDonald, J. (2009), "Using least squares and tobit in second stage DEA efficiency analyses", *European Journal of Operational Research*, 197 (2), pp. 792-798.

Messer, L., Laraira, B., Kaufman, J., Eyster, J., Holzman, C., Culhane, J., Elo, I., Burke, J. and O´Campo, P. (2006), "The Development of a Standardized Neighborhood Deprivation Index", *Journal of Urban Health: Bulletin of the New York Academy of Medicine*, 83, pp. 1041-1062.

Moulton, W.N. and Thomas, H. (1993), "Bankruptcy as a Deliberate Strategy: Theoretical Considerations and Empirical Evidence", *Strategic Management Journal*, 14 (2), pp. 125-135.

Munda, G. (2005), "Measuring Sustainability: A Multi-Criterion Framework", *Environment, Development and Sustainability*, 7, pp. 117-134.

Munda, G. and Nardo, M. (2009), "Noncompensatory/ Nonlinear Composite Indicators for Ranking Countries: A Defensible Setting", *Applied Economics*, 41, pp. 1513-1523.

Nardo, M., Saisana, M., Saltelli, A., Tarantola, S., Hoffman, A. and Giovannini, E. (2005), "*Handbook on Constructing Composite Indicators: Methodology and User Guide*" OECD Statistics Working Papers.

National Bureau of Economic Research US Business Cycle Expansions and Contractions (2010). Public Information Office, available at http://www.nber.org/cycles/US_Business_Cycle_Expansions_and_Contractions_20100920.pdf

Pearce, J.A. and Robbins, K. (1993), "Toward improved theory and research on business turnarounds", *Journal of Management*, 19, pp. 613-636.

Poston, K.M. Harmon, W.K. and Gramlich, J.D. (1994), "A test of financial ratios as predictors of turnaround versus failure among financially distressed firms", *Journal of Applied Business Research*, 10 (1), pp. 41–57.

Puig-Junoy, J. and Rué, M. (1998), "Technical Inefficiency in the Production of Intensive Care Units", *International Journal of Operations and Quantitative Management*, 4 (1), pp. 23-41.

Ramzan, N., Degenkolbe, S. and Witt, W. (2008), "Evaluating and Improving Environmental Performance of HC´s Recovery System: A Case Study of Distillation Unit", *Chemical Engineering Journal*, 140, pp. 201-213.

Robbins, K. and Pearce, J.A. (1992), "Turnaround: retrenchment and recovery", *Strategic Management Journal*, 13 (4), pp. 287-309.

Seiford, L.M. (1997), "A bibliography for Data Envelopment Analysis (1978-1996)", *Annals of Operations Research*, 73, pp. 393-438.

Sexton, T.R. and Lewis, H.F. (2003), "Two-Stage DEA: An application to major league baseball", *Journal of Productivity Analysis*, 19, pp. 227-249.

Sherman, H.D. and Zhu, J. (2006), "*Service productivity management: improving service performance using Data Envelopment Analysis (DEA)",* Springer, Boston.

Simar, L. and Wilson. P.W. (2007), "Estimation and inference in two-sage semi-parametric models of production processes", *Journal of Econometrics*, 136, pp. 31-64.

Smith, M. and Graves, C. (2005), "Corporate turnaround and financial distress", *Managerial Auditing Journal*, 20 (3), pp. 304-320.

Sudarsanam, S. and Lai, J. (2001), "Corporate financial distress and turnaround strategies: An empirical analysis", *British Journal of Management*, 12, pp. 183-199.

Zhu, J. (2001), "Multidimensional quality-of-life measure with an application to *Fortune´*s best cities", *Socio-Economic Planning Sciences*, 35, pp. 263-284.

Zhu, J. (2000), "Multi-factor performance measure model with application to Fortune 500 companies", *European Journal of Operational Research*, 123 (1), pp. 105-124.

APPENDIX II.

A. Correlations between the variables of influence in the Fitness Status

		Fitness Status	SEV_STAT	FIN_AUT	SOLV	TURNOV	RET_STG	ROA	ROA_AVG	SIZE
Fitness Status	Pearson Correlation	1								
	Sig. (2-tailed)									
	N	526								
SEV_STAT	Pearson Correlation	-,240**	1							
	Sig. (2-tailed)	,000								
	N	526	526							
FIN_AUT	Pearson Correlation	-,086*	-,004	1						
	Sig. (2-tailed)	,049	,936							
	N	526	526	526						
SOLV	Pearson Correlation	-,172**	,011	,467**	1					
	Sig. (2-tailed)	,000	,801	,000						
	N	526	526	526	526					
TURNOV	Pearson Correlation	-,075	,060	-,147**	-,179**	1				
	Sig. (2-tailed)	,088	,170	,001	,000					
	N	526	526	526	526	526				
RET_STG	Pearson Correlation	,110*	,143**	,034	,083	-,100*	1			
	Sig. (2-tailed)	,011	,001	,432	,056	,021				
	N	526	526	526	526	526	526			
ROA	Pearson Correlation	,216**	-,396**	-,093*	-,190**	,160**	-,037	1		
	Sig. (2-tailed)	,000	,000	,033	,000	,000	,399			
	N	526	526	526	526	526	526	526		
ROA_AVG	Pearson Correlation	,070	,003	,007	,021	-,018	,012	-,005	1	
	Sig. (2-tailed)	,111	,941	,878	,627	,681	,783	,913		
	N	525	525	525	525	525	525	525	525	
SIZE	Pearson Correlation	,510**	-,339**	-,181**	-,417**	,099*	-,260**	,307**	,020	1
	Sig. (2-tailed)	,000	,000	,000	,000	,024	,000	,000	,657	
	N	520	520	520	520	520	520	520	519	520

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

B. Category and Definition of the Variables

Category	*Variables*	*Definition*
Severity Status	NI/TA	Net Income/ Total Assets
	EBIT/TA	Earnings before Interest and Taxes/ Total Assets
	RE/TA	Retained Earnings/ Total Assets
	OCF/TA	Operating Cash Flow/ Total Assets
	WC/TA	Working Capital/ Total Assets
	CF/TA	Cash Flow/ Total Assets
	SE/TA	Shareholders' Equity/ Total Assets
Reaction Capability	SE/TL	Shareholders' Equity/ Total Liabilities
	CA/CL	Current Assets/ Current Liabilities
	Sales/TA	Sales/ Total Assets
Fitness Status	Debt payment level	[(Interests/Total Assets)$_n$ - Median of Sector] x Total Assets
	Firm's performance	[(Operational Income/Total Assets)$_n$ - Median of Sector] x Total Assets
	Sector's performance	[Median of (Operational Income/Total Assets)$_{n-1}$ - Median of (Operational Income/Total Assets)$_n$] x Total Assets
	Final Status	this item indicates if a firm manages to exit the crisis situation at the end of each year during the analyzed period. It takes value 1 if it does exit and value 0 if it does not.

CHAPTER IV. CSR STRATEGIES IN FIRMS FACING A DECLINING SITUATION

Chapter IV: CSR strategies in firms facing a declining situation.

4.1. Introduction

In recent years, "revolving" a crisis situation has been of much interest in many research papers the aim of which is to identify those patterns that distinguish companies in crisis situation that are able to resolve their issues against those that are not. These studies show that there exist different strategies that may successfully guide a company through the exit of the crisis situation (Robbins and Pearce, 1992; Pearce and Robbins, 1993, 1994; Barker and Duhaime, 1997; Cascio *et al.*, 1997; Morris *et al.*, 1999).

Furthermore, there have also been many studies dealing with the CSR matter and firms' financial and economic performance. Some of them have been proof of the positive association between CSR actions and financial performance, but others found evidence that this relation was negative or neutral (Aupperle *et al.* 1985; Davidson and Worrell, 1992; Brown and Perry, 1994; Waddock and Graves, 1997; Griffin and Mahon, 1997; Dowell *et al.* 2000; Hillman and Keim, 2001; Orlizky *et al.* 2003; Brammer and Millington, 2008; Nelling and Webb, 2009; Jong-Seo *et al.* 2010; Peters and Mullen, 2009; Mishra and Suar, 2010; Byus *et al.* 2010). Murphy (2002) performs an exhaustive review of studies that have analyzed the relationship between responsible behavior and financial performance, concluding that there exists a solid base demonstrating a positive relationship between *responsible environmental behavior* and a strong financial performance. Concerning the *social behavior*, Margolis and Walsh (2001) assert that the positive relationship with the financial performance can be presumed neither for all companies nor for all kind of social activities.

The different results of research studying CSR and CSP make possible affirm that responsible behavior does not negatively affect the performance of a firm but there is no explicit evidence about the achievement of abnormal earnings. As a consequence, although there is wide evidence proving that the responsibility generates positive results for the companies, there is not an irrefutable proof of a cause and effect relationship (Schadewitz and Niskala, 2010). Moreover, the relationship does not have to be necessarily from CSR to performance, it is also plausible that performance drives CSR or that both situations can occur (Devinney, 2009). In this sense, some research affirm

that firm's historical financial performance contributes to the current CSR investments, according to the reverse-causality relationship between both terms (Hillman and Keim, 2001; Xueming and Bhattacharya, 2006). This approach has been supported by considering that good financial results allow redirecting excessive resources towards social activities. This means that good financial performance derives in social responsible practices, thus, influencing CSR profiles.

However, if investing in responsible behavior causes positive effects on future financial performance the market should appraise this behavior so that investors reward the value attributed to socially responsible companies. In this way, firms that satisfy stakeholders will receive their support in return. This view has opened an investigation line which tries to connect CSR actions with market value of firms. Although these researches are not conclusive, Statman *et al.* (2006) affirm that even if there is no higher valuation for being social responsible, there is no penalty associated with these behaviors. However, a wide range of studies have shown that social responsible companies are well valued by the market (Cormier and Magnan, 1997; Graves and Waddock, 2000; Konar and Cohen, 2001; Orlizky *et al.,* 2003; Schadewitz and Niskala, 2010; Semenova *et al.,* 2010; Lo and Sheu, 2007). Investment in responsible behaviors can be understood as a "product" offered to investors, some of which are willing to buy although it may imply a reduction in the present value of cash flow or obtain less profit compared to non-responsible firms (Mackey *et al.,* 2007).

These results allow considering the hypothesis that investors evaluate a firm's value based on their expectation generated by financial data and also by the returns or detriments derived from socially responsible actions. In this sense, Semenova *et al.* (2010) concluded that environmental and social performance complete financial information and that these are relevant in explaining the variation in stock prices. In the same line, Hassel *et al.* (2005) propose that market value of a firm is a combination of financial variables and firm's environmental information. Thus, CSR practices complement, and also modify, the expectations marked by financial data, revealing crucial aspects that affect a firm's future in terms of reaching a competitive advantage. Recalling Heal (2005), this *extra-financial information* can be considered as an intangible asset valued by the market in the assessment of the future of the firm in terms

of competitiveness, efficiency and even survival, making the companies more attractive to investors.

If the expectations of investors for the survival chance of a firm based on financial information are modified when the extra financial information is considered, it is interesting to know to what extent this modification of expectations occurs in firms that present some kind of financial difficulties resulting in an *a priori* unattractiveness for the investors. This is the approach followed by Goss (2009) when showing that, starting by considering CSR as a "proxy" of good corporate governance, there is a negative and robust relationship between CSR and financial distress where this latter one is calculated as the probability of default following Merton's Model. Goss (2007) concluded that there was a relationship between CSR and distress, which means information about CSR practices complements and brings in additional information to that offered by financial data, however, a clear demonstration on the fact that CSR investment reduces the distress risk, could not be established.

CSR investments transmit confidence to the management. The *good management theory* (Miles and Covin, 2000) considers socially responsible practices as an indicator of "good managers" who adopt strategies that permit the improvement of competitive power of a firm. Schadewitz and Niskala (2010) also affirm that the management of CSR practices is fundamental for investors to distinguish between efficient firms and those in conditions to defend their competitive advantage in the marketplace. In this line, it can be questioned to what extent poor financial performance could incentivize the managers towards these practices as a way to add confidence to the value of the firm. In this sense, Ho and Taylor (2007) argue that those firms experiencing unfavorable profit performance have incentives to issue more information on activities that add social value, helping to put the company back to a positive path. The authors found a significant negative relationship between social and environmental information issued by companies and the profit variable, which shows that firms with lower profitability tend to report more about their responsible behavior. This improves the perception of shareholders on the company and mitigates the weaknesses that can occur in a given time on its financial performance. This approach supports the line followed by Lee *et al.* (2009), when considering that

firms make use of CSR as a legitimate instrument to influence the perceptions of stakeholders.

Thus, investing in CSR in times of "crisis" may encourage the support of shareholders and other stakeholders on a possible reorganization. Managers of financially distressed firms with a high or low level of severity can use investment in CSR strategies in order to "redirect" the weak image offered by financial variables of the company, so that investors (and other stakeholders) do not lose their trust and support to the firm. These last factors are vital for future survival of every company. In this sense, Goss (2009) affirms that CSR investments are like good managers practices, which imply an investment in the future results of financially distressed firms. Altman and Hotchkiss (2006), as well, state that if the company's economic value is greater than its present liquidation value, the company should be encouraged in order to further continue in the market. The going-concern value, using authors' word, would be understood as the value associated with a firm's ability to continue in the market and with future expectations, and these expectations may depend on the company's emphasis on CSR. Using an "adverse selection" argument, the market could understand that a company not "investing" in CSR does not consider any kind of future. This fact will be interpreted as bad news and as a consequence it will be discounted by investors.

4.2. Incorporating CSR actions in turnaround process

A company facing a financial distress situation needs to adopt a series of specific strategies in order to return to a healthy scenario (Robbins and Pearce, 1992; Pearce and Robbins, 1993 and 1994; Barker and Duhaime, 1997; Castrogiovanni and Bruton, 2000; Smith and Graves, 2005; Pretorius, 2008). In a declining phase, and under the vision of a turnaround process, three issues are fundamental: i) preserve the confidence and support of the shareholders; ii) improve the profitability by acting over profits; and iii) attract funds for the short and medium term needs in cases when the firm presents weaknesses in cash or financial dimension. It is in this area, where CSR may play a key role as strategies in order to positively support a turnaround process. In this sense, Hernández-Murillo and Martinek (2009) state that certain actions framed in responsible behavior can be interesting for companies because they can create opportunities to

generate additional economic benefits by means of which a bad economic performance can be restored. Among these benefits, the authors enumerate a reputation improvement, a profit generation by product diversity or the possibility to extract a premium for the products so that they can be converted to additional future returns. Heal (2005) states that social and environmental actions can increase long-term profit by reducing the cost of interest conflicts with the company, cost reduction, employees' productivity, and brand value generation making the firm more attractive to investors. Other possible advantages can be a better way to obtain resources, an increase in product demand or a reduction in production process costs (Waddock and Graves, 1997; Sen and Bhattacharya, 2001; Konar and Cohen, 2001).

Firms facing some kind of financial distress situation transmit risks to investors, who will be cautious in the moment they contribute funds to the company. CSR actions could help mitigate the perceived financial risk by modifying the future expectations and image of the firm. Managers of firms facing a crisis situation in a certain moment of time, may have the incentive to invest in social responsible actions among their recovery strategies in order to: i) complement efficiency strategies oriented towards returns on investment; ii) reduce the cost in certain actions to develop cost reduction strategies or iii) create favorable expectations that mitigate the weak financial results given by their financial ratios. Thus, there exist various motivations to perform greater efforts "in benefit" of the community in order to recompense those bad financial results published. The managers of companies in a financial distress may try to "handle" the image of this weak financial situation through responsible behavior as a reaction to a discretionary organizational conflict. This attitude is a manner of giving strength to their future so that managers can spread their future expectations to investors and to the market. However, once identified a declining phase, it does not exist, *a priori*, a clear argument on how managers decide to integrate CSR within the activities to be carried out due to the different possibilities of action and the possible effects of such investments.

4.3. Reputation and trust approach

To maximize the benefit of the stockholders and the long-term survival (Becchetti *et al.* 2012), a company's reputation and a positive assessment of its actions by stakeholders are critical. These ideas have already been pointed out by Freeman (1984) when considering that, taking into account the *stakeholder theory*, the survival of a company is closely related to its ability to adjust the values of the corporation and of its managers and the expectations of the stakeholders.

Smith and Graves (2005) state that once a situation of decline is identified, managers should try to stabilize the financial condition of the entity, undertaking various actions allowing gathering stakeholders support. The level of available resources is an issue that can affect the ability of the firm to undertake various strategies in a turnaround process. Shareholders' trust is crucial to obtain additional financial contributions, the financial resources permit companies more options to undertake change strategies (Barker and Duhaime, 1997) initiating a way out of the crisis situation.

Investors are cautious in the presence of the financial risks of a firm. The confidence of shareholders depends on the evaluation of expectations and, in a company in financial crisis, on the probability estimations of the restitution of firms' situation. However, various research defend that CSR practices reduce the perceived risk of a firm (Fombrun and Shanley, 1990; Feldman *et al.,* 1997; Miles and Covin, 2000; Heal, 2005; Devinney, 2009; Ghoul *et al.,* 2011; Whetten and Mackey, 2004). Fombrun and Shanley (1990) already demonstrated a negative and significant correlation between risk and reputation, being the latter one a consequence of CSR behaviors of companies. In the same way, Fernández-Feijóo (2009) asserts that in times of financial crisis, CSR actions provide a guarantee to future investors which can allow reducing the risk of investment in firms. Iannou and Serafeim (2010) investigated how investment analysts perceive CSR strategies carried out by the companies and how they react to these strategies by issuing investment recommendations. Responsible behavior could revise the perception of a company on its negative financial valuation if the updated benefits outweigh the uncertainty associated with the same.

CSR actions can modify the perceived risk and, indirectly, influence the possibilities of access to external funding, as well as the cost of capital the company supports. Various works collect the existence of positive returns for the companies that invest in socially responsible behavior through an improvement in the cost of capital. Feldman *et al.* (1997) found that companies adopting proactive actions in CSR experience a thorough reduction of risk by investors, which can lead to a cheaper cost of capital. Strengthening the corporate image, by increasing the reputation towards the stakeholders, mitigates the risk such that responsible behavior is converted to better discount rate, allowing even lower cost of capital (Miles and Covin, 2000; Heal, 2005; Lee *et al.*, 2009; Cheung *et al.*, 2010; Ghoul *et al.*, 2011). This advantage in the cost of funding is evidenced in studies such as Goss (2007) showing that companies with bad CSR performances pay higher debt costs. Firms are no strangers to this relationship given that, as Devinney (2009) notes that, along with other directly-implicated in performance, one of the reasons why firms and their managers are involved in CSR initiatives is the impact on the risk (cost of capital).

According to Godfrey *et al.* (2009), CSR might offer a security mechanism to firms in order to preserve their financial performance. Certain CSR actions create the so called moral capital or goodwill which mitigates the penalty sanction that stakeholders may undertake under negative events. These authors argument that the moral capital does not have any effect on value generation yet it preserves the economic value of the company. In this way, CSR actions condense the negative effect by awarding the firm with the "benefit of the doubt".

Although companies do not receive tangible rewards for CSR actions, they generate intangible assets such as reputational capital, trust and positive actions among regulatory institutions (Godfrey, 2005). Keeping in mind that companies in a more prejudicial position, from a financial point of view, attempt to reduce agency costs by increasing the level of corporate information, we expect that the managers of enterprises in crisis are encouraged to responsible attitudes in order to improve their ability to access funding sources and reduce the cost of fund raising.

4.4. Liability risk

Regarding liability risk, the so called *social-sanction theory* argues that the companies are subject to claims for those behaviors that do not contribute to the growth and development of society (Devinney, 2009), as they are not behaving within the norms and mores of the societies in which they operate. Reinhardt (1999) refers to the risk of liability or damaged reputation in which it should be considered not only the risk of an adverse event, but also the associated cost for the losses that would occur. Responsible actions minimize transaction costs and reduce the risk of legal conflicts with them (Becchetti *et al.*, 2012). As asserted by Levine (2008), CSR programs ensure the fulfillment of responsibilities, managing the legal or reputational risk to which firms are exposed in this current context of social requirements. In this sense, Hassel *et al.* (2005) as well, state that returns from "greening", referring to the reduction of environmental pollution, minimize future environmental responsibility.

Not responsible behaviors may imply future responsibility in terms of costs associated with responsibility demanding (Waddock and Graves, 1997), which will also be deducted by the shareholders who assess their "future cost" in the present time. The market attractiveness of socially acceptable behavior evidenced by Iannou and Serafeim (2010) is reconfirmed in the *ethical investments approach* which defends the selection of firms according to social and environmental practices besides financial data (Shea, 2010). The ethical behavior becomes an intangible asset which will be used in the investors' valuation so that they will be penalized or rewarded depending on their perception (Lo and Sheu, 2007). In the same line, Becchetti *et al.* (2012) show that market punishes firms that withdraw from social indices.

However, the requirements for irresponsible behaviors are more sensitive in certain sectors (Hong and Kacperczyk, 2009) and certain construct dimensions of CSR, such as actions related to the environment. This behavior has already been detected in pioneer works such as Shane and Spicer (1983) who showed that misbehavior in environmental responsibility produces negative effect on investors' predictions of future earnings. With this argument, several studies have investigated the market reaction to certain environmental behaviors. Konar and

Cohen (2001) find a positive relationship between the reduction in toxic emissions and market value of companies. Cormier and Magnan (1997) show a negative relationship between the responsibility derived from pollution levels and the market value of the firm.

All these arguments are congruent with the line followed by the *value-creation theory* which states that efforts related to the environment produce competitive advantage and improve financial performance in benefit of investors. On their behalf, Semenova *et al.* (2010) refer to Porter's Theory to discuss that a proactive environmental behavior has a positive impact on market value of a firm as it anticipates future responsibilities. Moreover, Wahba (2008) found that the market recompenses firms for their environmental awareness, as corporate environmental responsibility showed a positive and significant influence on the firm market value. This fact can be explained by the positive relation that exists between environmental liability cost and negative reputation and the relation of these latter with profitability (Khanna *et al.*, 2004).

4.5. Economical-vulnerability approach

The *risk of economical-vulnerability* is related to the capacity of a firm to align with its environment. Fittest firms have greater chance to survive in a continuing competitive context by constantly adapting themselves to the environment. Socially responsible practices permit the improvement of competitive power of a firm, creating opportunities to generate economic benefits and differentiate the company form its competitors (Miles and Covin, 2000; Hernández-Murillo and Martinek, 2009). Well performing firms become less vulnerable to afford adverse situations or decline phases, reducing the risk of not overcoming these situations.

Searching the improvement of the results is characteristic of the first stage of the so called *efficiency strategies* which are implemented by the managers of companies facing distress and they are strongly related to the recovery of a stable situation (Robbins and Pearce, 1992; Campbell, 1996; Routledge and Gadenne, 2000; Castrogiovanni and Bruton, 2000; Smith and Graves, 2005). The positive relationship

between CSR investment and performance, and also between good performance and crisis recovery process, allow arguing the existence of incentives to implement social responsible actions, among the strategies undertaken by managers of companies facing distress in order to start a recovery process.

Companies that manage to resolve their crisis situation present higher performance levels during the recovery process (Kahl, 2001) highlighting the fact that firms manage efficiently their sales process in order to obtain higher profits. Barker and Duhaime (1997) listed several studies that associate successful turnaround processes to increases in sales and significant gains in market share. However, firms facing a difficult situation can suffer sales and revenue decline because customers start losing their trust on them. In this case, CSR practices may reward this initial distrust of customers so that they still find it attractive and reliable to continue their purchase relationship with the firm

Certain CSR programs are drivers of customer satisfaction (Xueming and Bhattacharya, 2006) and produce positive effects on customers' attitude towards a product (Berens *et al.*, 2005), allowing an identification with the firm which converts to an important support to it (Bhattacharya and Sen, 2004; Lichtenstein *et al.*, 2004). To wager on client support means to bet for the future. For a firm facing a situation of financial distress this bet could be a signal of warranty of the weak financial statements, allowing that a bad economic performance could be restored. In this sense, Ruf *et al.* (2001) show that there is a continuous positive relationship between CSR and sales increase.

In addition, to improve the profits there exist other ways in which CSR investment may also result positive. In this way, CSR practices generate cost reduction, generate profit by product diversity, increase sales and generate brand value, building a stronger performing firm (Waddock and Graves, 1997; Ruf *et al.,* 2001; Sen and Bhattacharya, 2001; Konar and Cohen, 2001; Heal, 2005; Becchetti *et al.*, 2012; Hernández-Murillo and Martinek, 2009; Becker-Olsen *et al.,* 2006). On the other hand, certain CSR actions may have a positive effect on employee's productivity so that an alignment between

company's objectives and employees' motivation can be reached. In this way, there would be a cost reduction and an increase in productivity (Becchetti *et al.* 2012).

4.6. Cost-reduction approach

The nonexistence of a consensus on the research focusing on the relationship between financial performance and corporate social performance allows assessing the existence of a bidirectional relation between these two concepts. In this way, an increase in social performance could be also interpreted as a discretional activity that is financed when the firm has an excess of funds, that is, good financial performance (Hillman and Keim, 2001). Complementing this, the *theory of slack resource* (Miles and Covin, 2000) argues that certain environmental behaviors are adopted as a consequence of good financial results, allowing undertaking additional investment by allocating funds as well as making discretionary investment decisions.

Investment in CSR has also been interpreted as a cost at the expense of shareholders' value, particularly in proceedings related to certain dimensions of CSR. These dimensions involve significant economic outlays with a great impact on the current income statement due to the difficulty of quantifying them as performances generating future profits. This hypothesis is in line with the results obtained by Lo and Sheu (2007) which indicate that investors can be reluctant towards CSR actions of a firm if they consider that these actions increase operational and production costs.

The *shareholders theory* point of view, it has been argued (Yermack, 2006; Barnea and Rubin, 2005) that shareholders can consider CSR actions as an unnecessary important agency cost that improves company image but at their interest expense. *The cost-concerned theory* (Earle, 2000) argues that investments in responsible behavior, specifically those related to environmental performance, only produce costs that affect company's profits and this fact does not contribute to enhancing the shareholder value (Lee *et al.,* 2009). This perception of CSR environmental actions as a expense on future earnings, has been evidenced by some researches showing the negative reaction of investors to the reduction in future expectations and return, reflecting lower market values (Friedman, 1962 and 1970;

Jensen, 2002). Investors perceive environmental investments as a cost on their future returns and they react negatively because of a reduction in the expectations of their returns which does not imply a risk reduction (Holman *et al.,* 1985). This approach explains the results obtained by Hassel *et al.* (2005) founding a negative relationship between environmental performance and market value, indicating that better valued firms in an environmental point of view are not the better valued by investors. The authors consider that it may be explained by the costs involved in environmental performance. These performances carry high costs which negatively impact the future returns used by investors as estimators in order to make their investment decisions.

In the recovery process, the efficiency-oriented strategies, characterized, among others, by cost and expense reduction that allows an improvement in profitability has been found strongly associated with turnaround (Robbins and Pearce, 1992; Campbell, 1996; Routledge and Gadenne, 2000). If managers associate the responsible behavior to costs more than to investment, it is expected that companies in crisis "disinvest" in CSR as a way to relieve their income statement. In the same vein, Fernández-Feijoo (2009), states that investments in CSR imply a threat to companies in crisis, so it is to expect that these behaviors do not occur in these uncertainty frameworks. However, the author suggests that CSR processes and the crisis periods share a number of necessities and strategies so that CSR could go from being a threat to being an opportunity.

If cost reduction is one of the possible conducts in a turnaround process, it would seem reasonable to think that managers of firms facing a financial distress situation initiate cost adjustment strategies. These strategies are thought to be the beginning of a logical improvement track so they would be positively valued by investors.

Becchetti *et al.* (2012) state that almost all of the KLD dimensions - both strengths and weaknesses - involve some form of increase in cost except for product quality and rewards of managers. However, not all responsible behavior has to be associated with costs of the same impact on firm's business. For this reason, the discount and the effect on the company's valuation will not be the same. It is more plausible the fact that declines are produced in those dimensions of CSR that generate a

major and immediate expense (i.e. actions framed within the environmental dimension). Managers design CSR investment strategies opting for those dimensions "more profitable" for their purposes, disinvesting in the most "serious" in terms of cost and redirecting the strategy to others less expensive but still beneficial for the poor financial image. These behaviors are consistent with the results of the work of Chen *et al.* (2008), who showed that an investment strategy in philanthropic activities was followed by companies with poor environmental and product safety.

The above argument makes sense if we consider, as indicated by Hassel *et al.* (2005), that the market is short-term oriented and investors do not consider the impact of long-term when making their decisions. Thus, according to the Cost-Threat approach, companies in financial distress would tend to decrease their investment in certain dimensions of CSR that shareholders consider as an expense. The managers of these companies prefer to "redirect" firm's income statement in a shorter time interval, reducing the costs and expenses that do not produce immediate benefits. This assessment is based on the paradox of considering responsible actions as a present cost or as an investment and it is more evident in dimensions related to environmental responsibility. This paradox of environmental responsibility - opportunity by reducing future costs or threat by reducing current costs – allows considering that the strategies followed by managers of companies in distress do not present a clear a priori direction in this dimension. Following Waddock and Graves (1997), we can suppose:

- Negative association: Actions linked to the environment cause additional, usually important, costs that can be hardly affordable by companies in financial difficulties. Enterprises immersed in financial distress will tend to reduce this type of investment.

- Positive association: the lack of investment in environmental actions cause legal responsibility demands that have associated cost. Some of them are implicit, such as the perception of shareholders and future investors, and sometimes they could overcome the explicit costs.

On the basis of previous arguments, our purpose is to analyze to what extent companies facing financial distress situations incorporate investment in responsible

behaviors among their strategies as a mechanism to create favorable expectations that mitigate the weakened image given by certain financial indicators. We will study the different patterns of implementation of these strategies which are conditioned by the degree of financial distress and the underlying weaknesses of this situation, so that we can show the selection mechanisms among the various dimensions that form the CSR construct depending on: i) the costs associated to these responsible behaviors; and/or ii) the period in which it is supposed to obtain the returns or benefits of this CSR investment.

It is necessary to consider that the difference in the perception of CSR strategies (cost threat or investment opportunity) is associated with the level or stage of the company's crisis or default situation. If the source of the crisis is an economic imbalance there is a greater tendency to consider CSR practices as a threat because of the effect they have on the costs of the exercise, ergo, we expect a negative relationship in this type of firms. On the contrary, if the source of the crisis of the company is a financial imbalance, it is reasonable to think of a positive association of CSR performances as a way to improve the confidence of investors and creditors in the future.

Finally, focusing on companies with financial problems, we should take into account the stage of the distress process in which the company is immersed. Companies that encounter a serious crisis situation, derived by many factors, are more likely to center their precedence over the short-term survival and any initiative related to CSR practices would be considered as a negative cost with immediate impact on the target of survival.

References

Altman, E. and Hotchkiss, E. (2006), "Corporate Financial Distress and Bankcrupty". Third Edition, Hoboken, New Jersey: John Wiley and Sons

Aupperle, K. E., Carroll, A. B. and Hatfield, J. D. (1985), "An empirical examination of the relationship between corporate social responsibility and profitability". *Academy of Management Journal*, pp. 446-463.

Barker III, V.L. and Duhaime, I. M. (1997), "Strategic change in the turnaround process: Theory and empirical evidence". *Strategic Management Journal*, 18 (1), pp. 13-38.

Barnea, A. and Rubin A. (2005), "Corporate Social Responsibility as a conflict between owners", http://www.haas.berkeley.edu/responsiblebusiness/conference/documents/AmirRubinFinalpaper.pdf. Date: September, 15th 2008.

Becchetti, L. Ciciretti, R. and Hasan I. (2007), "Corporate Social Responsibility and Shareholder's Value: An Event Study Analysis". Federal Reserve Bank of Atlanta. Working Paper Series. Working Paper 2007-6, April, pp. 2-33.

Becker-Olsen K.L., Cudmore A.B. and Hill P.R. (2006), "The impact of perceived corporate social responsibility on consumer behavior", *Journal of Business Research*, 59 (1), pp. 46-53.

Berens G., Van Riel C. and Van Bruggen G. (2005) "Corporate Associations and Consumer Product Responses: The Moderating Role of Corporate Brand Dominance", *Journal of Marketing*, 69 (July), pp. 35–18.

Bhattacharya C.B and Sen S. (2004) "Doing Better at Doing Good", *California Management Review*, 47 (1), pp. 9–24.

Brammer, S. and Millington, A. (2008), "Does it pay to be different? An analysis of the relationship between corporate social and financial performance". *Strategic Management Journal*, 29 (12), pp. 1325-1343.

Brown, B., and Perry, S. (1994). "Removing the financial performance halo from *Fortune*'s "most admired" companies". *Academy of Management Journal*, 37, pp. 1347-1359.

Byus, K., Deis, D. and Ouyang, B. (2010), "Doing Well by Doing Good: Corporate Social Responsibility and Profitability", *SAM Advanced Management Journal (07497075)*, 75 (1), pp. 44-55

Campbell, S.V. (1996), "Predicting bankruptcy reorganization for closely held firms", *Accounting Horizons*, 10 (3), pp. 12-25.

Cascio, W., Young, C. and Morris, J. (1997), "Financial consequences of employment-change decisions in major U.S. corporations", *Academy of Management Journal*, 40 (5), pp. 1175-1189.

Castrogiovanni, G. and Bruton, G. (2000), "Business turnaround processes: reconsidering the role of retrenchment", *Journal of Business Research*, 48, pp.25-34.

Chen, J. C., Patten, D. M. and Roberts, R. W. (2008), "Corporate charitable contributions: A corporate social performance or legitimacy strategy?", *Journal of Business Ethics,* 82 (1), pp. 131-144, DOI: 10.1007/s10551-007-9567-1

Cheung Y.L., Tan W., Ahn H.J and Zhang Z. (2010), "Does corporate social responsibility matter in Asian emerging markets?", *Journal of Business Ethics*, 92, pp. 401-413.

Cormier, D. and Magnan, M. (1997), "Investors' Assessment of Implicit Environmental Liabilities: An Empirical Investigation". *Journal of Accounting and Public Policy*, 16, pp. 215–241.

Davidson, W.N. and Worrell, D.L. (1992), "The effect of product recall announcements on shareholder wealth". *Strategic Management Journal*, 13 (6), pp. 467-73.

Devinney, T.M. (2009), "Is the Socially Responsible Corporation a Myth? The Good, the Bad, and the Ugly of Corporate Social Responsibility". *Academy of Management Perspectives*, May, pp. 44-56.

Dowell, R. V., Siddiqui, I. A., Meyer, F. and Spaugy, E. L. (2000), "Mediterranean fruit fly preventative release programme in southern California", pp. 369 - 375. *In* K. H. Tan [ed.], Area-wide control of fruit flies and other insect pests. Penerbit Universiti Sains Malaysia, Pulau Pinang, Malaysia.

Earle, R. (2000), "The Emerging Relationship between Environmental Performance and Shareholder Wealth", Assabet Group, available at http://ww.assabetgroup.com

Feldman, S. J., Soyka, P.A. and Ameer, P.G. (1997), "Does improving a firm's environmental management system and environmental performance result in a higher stock price?", *Journal of Investing*, 6, pp. 87-97.

Fernández-Feijóo Souto, B. (2009), "Crisis and Corporate Social Responsibility: Threat or Opportunity?" *International Journal of Economic Sciences and Applied Research*, June, 2 (1), pp. 36-50, Available at SSRN: http://ssrn.com/abstract=1517744

Fombrun, C. and Shanley, M. (1990), "What's in a Name? Reputation Building and Corporate Strategy". *Academy of Management Review*, 33 (2), pp. 233–258.

Freeman, R. E. (1984), "Strategic Management: A Stakeholder Approach". Boston: Pitman. Print.

Friedman, M. (1970), "The social responsibility of business is to increase its profits". *New York Times Magazine*, 32 (13), pp. 122-126.

Friedman, M. (1962), "*Capitalism and freedom*", Chicago: University of Chicago Press.

Ghoul, S., Guedhami, O., Kwok C. and Mishra, D. (2011), "Does corporate social responsibility affect the cost of capital?", *Journal of Banking and Finance*, 35 (9), September, pp. 2388-2406

Godfrey, P. C., Merrill, C. B., and Hansen, J. M. (2009), "The relationship between corporate social responsibility and shareholder value: An empirical test of the risk management hypothesis". *Strategic Management Journal*, 30, pp. 425–445.

Godfrey, P. C. (2005) "The relationship between corporate philanthropy and shareholder value: A risk management perspective", *Academy of Management Review*, 30, pp. 777−798.

Goss, A. (2009), "Corporate Social Responsibility and Financial Distress", ASAC.

Goss, A. (2007), "Essays a corporate social responsibility and financial performance". York University. Dissertation, York University, Canada.

Graves, S. B. and Waddock, S. A. (2000), "Beyond built to last: stakeholder relations in the built to last companies". *Business and Society Review*, 105 (84), pp. 393-418.

Griffin, J. and Mahon, J. (1997), "The corporate social performance and corporate financial performance debate", Business and Society, 36 (1), p. 5

Hassel, L., Nilsson, F. and Nyquist, S. (2005), "The value relevance of environmental performance", *European Accounting review*, 14 (1), pp. 41-61.

Heal, G. (2005), "Corporate social responsibility: An economic and financial framework". *The Geneva Papers*, 30 (3), pp. 387-409.

Hernández-Murillo, R and Martinek, C (2009), "Corporate Social Responsability Can Be Profitable". *The Regional Economist*, April, pp. 4.5

Hillman, A. J. and Keim, G. D. (2001), "Shareholder value, stakeholder management, and social issues: What's the bottom line?" *Strategic Management Journal*, 22, pp. 125–139.

Ho, L-C. J. and Taylor, M. E. (2007), "An Empirical Analysis of Triple Bottom-Line Reporting and its Determinants: Evidence from the United States and Japan". *Journal of International Financial Management and Accounting*, 18 (2), pp. 123-150, Available at SSRN: http://ssrn.com/abstract=990124 or doi:10.1111/j.1467-646X.2007.01010.x

Holman, W. R, Randoloph, N. J. and Singer, D. (1985), "The impact of corporate social responsiveness on shareholder wealth" in: Lee E. Preston *Research on Corporate Social Performance and Policy*, 8, (Greenwich, CT).

Hong, H. and Kacperczyk, M. (2009), "The price of sin: The effects of social norms on markets." *Journal of Financial Economics*, 93, 15-36.

Ioannou, I and Serafeim, G. (2010), "The impact of Corporate Social Responsibility on Investment Recommendations". Harvard Business School Accounting and Management Unit Working Paper No. 1507874, pp. 11-17, Available at SSRN: http://ssrn.com/abstract=1507874 or doi:10.2139/ssrn.1507874

Jensen, M. C. (2002), "Value maximization, stakeholder theory, and the corporate objective function". *Business Ethics Quarterly*, 12 (2), pp. 235-256.

Jong-Seo, C., Young-Min, K. and Chongwoo, C. (2010), "Corporate social responsibility and corporate financial performance: Evidence from Korea". *Australian Journal of Management*, 35 (3), pp. 291-311

Kahl, M. (2001), "Financial distress as a selection mechanism: Evidence from the United States", Working Paper 16-01, Anderson School of Management, University of California. http://repositories.edlib.org/anderson/fin/16-01.

Khanna M., Kumar S. and Anton W. (2004), "Environmental Self-Regulation: Implications for Environmental Efficiency and Profitability", Working Paper.

Konar, S. and Cohen, M. (2001), "Does the Market Value Environmental Performance?", *Review of Economics and Statistics,* 83 (2), pp. 281-309.

Lee D.D., Faff R.W. and Langfield-Smith K. (2009), "Revisiting the Vexing Question: Does Superior Corporate Social Performance Lead to Improved Financial Performance?", *Australian Journal of Management,* 34 (1), pp. 21-49.

Levine, M.A. (2008), "The Benefits of Corporate Social Responsibility". *New York Law Journal*. August 13.

Lichtenstein D.R., Drumwright M.E. and Braig B.M. (2004), "The Effect of Corporate Social Responsibility on Customer Donations to Corporate-Supported Nonprofits" *Journal of Marketing*, 68 (October), pp. 16-32.

Lo S.F. and Sheu H.J. (2007), "Is Corporate Sustainability a Value-Increasing Strategy for Business?" *Corporate Governance: An International Review*, 15 (2), pp. 345-358.

Mackey, A., Mackey T.B. and Barney J.B. (2007), "Corporate social responsibility and firm performance: Investor preferences and corporate strategies", *Academy of Management Review,* 32, pp. 817–835.

Margolis, J.D., and Walsh, J.P. (2001), "People and Profits? The search for a link between a company's social and financial performance". Mahwah, NJ: Erlbaum.

Miles, M and Covin, J. (2000), "Environmental Marketing: A Source of Reputational, Competitive and Financial Advantage". *Journal of Business Ethics*, 23, pp. 299-311.

Mishra, S. and Suar, D. (2010), "Does Corporate Social Responsibility Influence Firm Performance of Indian Companies?". *Journal of Business Ethics*, 95 (4), pp. 571-601.

Morris, J, Cascio, W. and Young, C. (1999), "'Downsizing after all these years: Questions and Answers about who did it, how many did it, and who benefited from it", *Organizational Dynamics*, 27, pp. 78-87.

Murphy, C. J. (2002), "The Profitable Correlation Between Environmental and Financial Performance: A Review of the Research". Document commissioned by Light Green Advisors, Inc.

Nelling, E. and Webb, E. (2009), "Corporate social responsibility and financial performance: the 'virtuous circle' revisited". *Review of Quantitative Finance and Accounting*, 32 (2), pp. 197-209, DOI: 10.1007/s11156-008-0090-y

Orlitzky, M., Schmidt, F. L., and Rynes, S. R. (2003), "Corporate social and financial performance: A meta-analysis". *Organization Studies*, 24 (3), pp. 403– 41.

Pearce, J.A. and Robbins, K. (1993), "Toward improved theory and research on business turnarounds". *Journal of Management*, 19, pp. 613-636.

Pearce, J.A. and Robbins, K. (1994), "Retrenchment remains the foundations of business turnaround". *Strategic Management Journal*, 15, pp. 407-417.

Peters, R, and Mullen, M. (2009), "Some Evidence of the Cumulative Effects of Corporate Social Responsibility on Financial Performance". *Journal of Global Business Issues*, 3 (1), pp. 1-14

Pretorius, M. (2008), "Critical variables of business failure: A review and classification framework", *Sajems Ns 11*, 4, pp. 408-430.

Reinhardt. F, (1999), "Market Failure and the Environmental Policies of Firms. Economic Rationales for "Beyond Compliance" Behavior". *Journal of Industrial Ecology*. 3 (1), pp. 9-21

Robbins, K. and Pearce, J.A. (1992), "Turnaround: retrenchment and recovery". *Strategic Management Journal*, 13 (4), pp. 287-309.

Routledge, J and Gadenne, D. (2000), "Financial distress, reorganization and corporate performance". *Accounting and Finance*, 40 (3), pp. 233-259.

Ruf, B. M., Muralidhar, K., Brown, R. M., Janney, J. J. and Paul, K. (2001): "An empirical investigation of the relationship between change in corporate social performance and financial performance: a stakeholder theory perspective". *Journal of Business Ethics*, 32, pp. 143–56.

Schadewitz, H. and Niskala, M. (2010), "Communication via responsibility reporting and its effect on firm value in Finland". *Corporate Social Responsibility and Environmental Management*, March/April, 17 (2), pp. 96-106.

Semenova, N., Hassel, L.G., and Nilsson, H. (2010), "The value relevance of environmental and social performance: Evidence from Swedish SIX 300 Companies", LTA 3/10, pp. 265-292

Sen, S. and Bhattacharya, C. B. (2001), "Does doing good always lead to doing better? Consumer reactions to corporate social responsibility". *Journal of Marketing Research*, 38 (2), pp. 225-243.

Shane, P. B. and Spicer B. H. (1983), "Market Response to Environmental Information Produced Outside the Firm", *The Accounting Review*, 58 (3), pp. 521–538

Shea, L.J. (2010), "Using consumer perceived ethicality as a guideline for corporate social responsibility strategy: a commentary essay", *Journal of Business Research*, 63, pp. 263-264.

Smith, M. and Graves, C. (2005), "Corporate turnaround and financial distress". *Managerial Auditing Journal,* 20 (3), pp. 304 – 320.

Statman, M. and Glushkov, D. (2009), "The wages of social responsibility", *Financial Analysts Journal,* 65 (4), pp. 33-46.

Statman, M., Thorley, S. and Vorkink, K. (2006), " Investor Overconfidence and Trading Volume", *The Review of Financial Studies*, 19 (4), pp. 1531-1565, doi:10.1093/rfs/hhj032.

Waddock, S. A. and Graves, S. A. (1997), "The Corporate Social Performance-Financial Performance Link" *Strategic Management Journal*, 18 (4), pp. 303-319.

Wahba, H. (2008), "Does the market value corporate environmental responsibility? An empirical examination", *Corporate Social Responsibility and Environmental Management,* 15, pp. 89–99.

Whetten, D.A. and Mackey, A. (2004), "An identity-congruence explanation of consistently high corporate social performance ratings", Working paper, Marriott School of Management, Brigham Young University, Provo, UT.

Xueming, L. and Bhattacharya, C.B. (2006), "Corporate Social Responsibility, Customer Satisfaction and Market Value", *Journal of Marketing,* 70, pp. 1-18.

Yermack, D. (2006), "Golden handshakes: Separation pay for retired and dismissed CEOs". *Journal of Accounting and Economics*, 14 (3), September, pp. 237-256.

CHAPTER V. PATTERNS IN CSR ACTIONS IN MITIGATING A WEAK FINANCIAL IMAGE

Chapter V. Patterns in CSR actions in mitigating a weak financial image

5.1. Introduction

The purpose of this chapter is to evidence whether companies facing financial distress situations incorporate investment in responsible behaviors among their strategies as a mechanism to create favorable expectations that mitigate the weakened image given by certain financial indicators. For this purpose, we will perform an analysis of similarities or differences in the attitude of firms towards CSR actions in order to determine if there exist a link between this attitude and the economic-financial situation of the firm.

The analysis of similarities and differences in the CSR behaviors is performed using a dataset of 392 companies classified, based on their financial structure, in healthy firms and distressed firms. CSR performance is assessed using the rating reached by the firms in the KLD database, accounting for the concerns and strengths obtained in the seven KLD's dimensions: *Community, Corporate Governance, Diversity, Employees, Environmental, Human Rights and Product*. For this evaluation, we chose to use Multidimensional Scaling (MDS), which provides a visual representation of the pattern of proximities (i.e., similarities or distances) among a set of observations. This study does not start off a direct link between company crisis and certain CSR strategies. The MDS methodology allows us to analyze the profiles of firms in a specific financial distress situation without any *a priori* assumptions on causal relations that could be used as predictors of CSR performance.

Considering the argumentations of Chapter IV, regarding the incentives of managers of firms facing some kind of financial distress situation to invest in CSR practices and according to the characteristics of the methodology that we are going to use, we expect that the positions of the analyzed companies in the plot can verify the following:

- The nonexistence of structural CSR differences between the companies that show symptoms of a crisis and the healthy ones. If the managers of firms in a declining process use the responsible behaviors as a strategy to "mitigate" the weak image

manifested by its economic and financial data, we suppose that the positions of companies in variables associated with the evaluation of its performance in CSR is independent of its financial structure.

However, we expect that the severity degree of the crisis will mark differences in the attitude of the company toward CSR and investment in responsible behaviors. In this way, the position reached by a company is not independent from the condition it began with.

- The existence of structural differences in CSR concern between the companies that show crisis and the healthy ones, considering the arguments of the so called Current-Cost approach.

- The existence of structural CSR behavior differences according to the financial concerns the firms present. Taking into consideration the threat-opportunity approach, we expect that there is a positioning difference between firms that present economic weaknesses and firms that show financial weaknesses.

5.2. The sample

In the analysis we used matched KLD-COMPUSTAT databases of firms during the period 2000-2002. Starting from the basis that the economic-financial situation of the company may be an incentive for CSR strategies, CSR variables were compiled for the period 2001-2002 and financial variables for the period 2000-2001.

The analyzed periods were selected according to the following reasons: i) In 2001, KLD expands the coverage of companies included in the database passing from S&P 500 Index and Domini 400 Social Index, to incorporating 1000 largest U.S. publicly traded companies by market capitalization; and ii) the year 2002 marked the beginning of a crisis characterized by important financial scandals which may have influenced the behavior of the companies in the market generating significant changes in homogeneity in the context used for this analysis. These changes can affect both the attitude of companies toward social responsibility and the financial data submitted when immersed in a crisis context.

Firms operating in the financial service industry were eliminated. We also excluded the companies that presented incomplete or inconsistent information in the years analyzed. A total of 1721 companies were considered valid from the Compustat Database. However, the final numbers of firms were conditioned to the availability of their CSR rating in the KLD database for the overall analyzed period. As a result, the sample is composed by a total of 392 firms for the considered periods (See Table 5.1).

Table 5.1. Firm distribution by industry

Sector	Nº firms
Consumer Discretionary	71 (18,11%)
Consumer Staples	30 (7,65%)
Energy	26 (6,63%)
Health care	32 (8,16%)
Industrials	90 (22,96%)
Information technology	54 (13,77%)
Materials	38 (9,69%)
Telecommunication Services	5 (1,27%)
Utilities	46 (11,73%)

Firms were classified according to their financial situation into two groups: healthy and distressed firms. The distressed firms were selected using the financial accounting symptoms already used in previous chapters. The used criteria allow us also to classify the firms into two groups: i) firms facing a severe crisis situation satisfying 4 or more criteria; and ii) firms facing a weak crisis situation satisfying 1, 2 or 3 criteria. This classification will make it possible to highlight possible differences in social responsibility strategies associated with the severity of their situation. In this sense, a company in a situation of strong financial distress may need to carry out imminent actions of restructuring for which performing only socially responsible actions to "mitigate" the delicate situation expressed by its financial data is not sufficient. This approach is consistent with the results found in some other lines of research (Iannou and

Serafeim, 2010) that demonstrate a U-shaped relation between financial performance and CSR. In addition, companies identified as being in weak crisis were again classified into companies with economic weaknesses and financial weaknesses. This classification was carried out taking into account which symptoms dominated in negative values (i.e. operational performance or financial). Table 5.2 contains a summary of the distribution of enterprises in the three years analyzed according to their association in each of the above groups.

Table 5.2. Distribution of firms according to their financial situation

Firm's Characteristic	2000	2001
- Healthy	248	214
- Crisis	144	178
- Weak crisis	134	166
*Economic	31	58
*Financial	103	108
- Strong crisis	10	12

A total of 36,7% (2000) and 45,4% (2001) of the sample firms present some kind of financial distress situation. Firms in weak crisis are dominant in the sample and among these, dominate firms with financial weaknesses.

5.3. The variables

Socially responsible behavior is measured using the rating achieved by companies in each of the dimensions of Kinder, Lyndenberg and Domini's database (KLD) database. KLD is a widely accepted tool to measure US firms' social responsibility (Wood and Jones, 1995; Ruf *et al.*, 2001) because it does truly reflect the actions and behaviors of CSR and it is not based only on the information issued by the companies (Iannou and Serafeim, 2010). KLD is used in a wide number of studies such as Graves and Waddock (1994), Waddock and Graves (1997), Hillman and Keim (2001), Ruf *et al.* (2001), Siegel and Vitalino (2006), Hull and Rothenberg (2008), Kacperczyk (2009),

Peters and Mullen (2009), Ioannou and Serafeim (2010), Melo and Galán (2010), Melo and Garrido-Morgado (2012), Bear *et al.* (2010), Boesso and Michelon (2010).

KLD assesses CSR by 7 dimensions representing firms' environmental, social and governance performance (*Community, Corporate Governance, Diversity, Employee Relations, Human Rights, Environment and Product*). Each individual dimension is measured by means of a series of indicators which represent positive actions (as strengths) and negative actions (as concerns) using a binary system (0, absence; 1; presence). Table 5.3 exposes the number of items included in each dimension.

Table 5.3. Dimensions assessed in the KLD database

Dimensions	Number of strength items	Number of concern items
Community	8	5
Corporate Governance	5	6
Diversity	8	3
Employees relations	7	5
Environmental	8	7
Human Rights	4	7
Product	4	4

Regarding the use of KLD rating for measuring CSR behavior of firms, studies like that of Siegel and Vitalino (2006) or Ghoul *et al.* (2011) sum up strengths and weaknesses obtaining a single variable that measures the responsible behaviors. In this way, companies with a result greater/smaller than 0 are considered socially responsible/irresponsible. However, in this study we chose to consider independently the strengths and weaknesses of the different criteria-dimensions. We follow the same approach as Mattingly and Berman (2006), as we understand that both reflect not only different behaviors but also opposite, positive and negative, so that a mix could lead to misinterpretation of the results (Strike *et al.* 2006; Godfrey *et al.* 2009; Kacperczyk, 2009; Arora and Wadwarkar, 2011). Thus, the firms have two scores in each one of the

individual dimensions representing their "investment" in socially responsible behaviors; a *strength score* (showing the number of strengths displayed) and a *concern score* (showing the number of concerns displayed). These two scores can be interpreted, following Arora and Wadwarkar (2011), as proactive actions (strengths)/reactive actions (concerns) to stakeholders.

We perform the analysis taking into account the strength/concern overall score, by grouping individual assessments obtained in each of the dimensions, as well as an individual strength/concern score on each of these dimensions (*Community, Corporate Governance, Diversity, Employee Relations, Human Rights, Environment, and Product)*. Thus, we follow the approach used by Griffin and Mahon (1997) who believe that the creation of a unique index that values the strength/weakness of a company in a single variable can disguise those individual dimensions that are important for a company or industry and also, the effective effort that a company performs on each of them. Nevertheless, in spite of the defended approach, a global assessment variable will be included in order to analyze to what extent it can be representative of possible differences between companies.

On the other hand, we include a set of variables that reflect the economic and financial situation of companies based on issues associated with the profitability, liquidity and debt, in line with previous research that tries to associate responsible behaviours to financial variables (Ho and Taylor, 2007). All financial variables have been divided by Total Assets of the company to eliminate the effect size. Table 5.4 contains the description of each of the variables used in the analysis.

TOT_S and *TOT_C* correspond to the sum of strengths and weaknesses respectively and they are measured according to the ratings obtained in each individual dimension of KLD. It is necessary to consider that this overall score may be affected by the number of items included in each individual dimension (see Table 5.3). Thus, more items in one dimension correspond to greater valuation of that dimension, without implying a more responsible behavior. For this reason, the individual scores have been adjusted according to the number of items valued in each individual dimension in order to obtain an adjusted score (*CSR_S* and *CSR_C).*

Table 5.4.Variables used in the analysis

Category	Variables
Financial	Net Income (NI)
	Operating Income (OPI)
	Working Capital (WC)
	Equity Shareholders (ES)
	Liabilities (LIAB)
	Cash Flow (CF)
	Operating Activities Cash Flow (OACF)
Overall Social Responsibility	CSR_global
	CSR_S
	CSR_C
	TOT_S
	TOT_C

In this way, CSR_S = $\sum(S_i/s_i)$, and CSR_T = $\sum(C_i/c_i)$, where i=1….n, represents the number of individual dimensions assessed, S_i, the score of strengths in one dimension, C_i, the score of concerns in one dimension, and s and c, the total of items assessed as strengths and concerns, respectively, in the *i* dimension.

Finally, *CSR_global* represents the difference between adjusted valuations of *CSR_S* and *CSR_C* as a manner to obtain an overall assessment of the responsible behavior if a firm. Even though, as mentioned above, the use of a variable of this type, which brings together strengths and weaknesses, is not considered appropriate we included it in the analysis to show to what extent this variable could be useful and representative of the responsible behavior of a company. Tables 5.5 and 5.6, contain the descriptive statistics of the variables for each of the years, differentiating between healthy companies, firms with problems and the total sample.

5.4. The methodology

Based on the Multidimensional Scaling (MDS) methodology, which allows representing graphically the similarities or differences between various elements according to the main characteristics of a data matrix (Neophytou and Mar Molinero, 2004; Kruskal and Wish, 1984; Peña, 2002), we will plot an n-dimensional *consensus map* where the observed individuals are positioned according to the underlying variable's structure, so that if two individuals appear close to each other it is because they share similar information and its original variables act in a similar way. On the contrary, their structural differences in the analyzed variables will be shown by the distances in the consensus map. Again, as we clarified in a previous Chapter, MDS algorithm does not make any assumptions about the distribution of the variables introduced in the analysis and no prior data reduction is necessary.

5.5. Empirical results and discussion

Performing the MDS analysis, the Euclidean distance was selected as dissimilarity measure to calculate the proximity between two firms. The dissimilarity measure is the reference value for the representation of the distances showed in the consensus map. Thus, companies that in the representation map are located close to each other, share similar economic and financial structure, as well as similar action strategies with respect to CSR according to the selected explicative variables.

The dimensionality of MDS map was chosen running a prior Principal Components Analysis (Mar Molinero and Ezzamel, 1991). This initial analysis permits considering a five dimensional space as the most appropriate for the representation of the structural relations between firms according to the original variables. This prior consideration is confirmed by the results of the goodness-of-fit measure chosen for this study: Kruskals' Stress1 level. The smaller the stress value, the better the adjustment is, following the range variation proposed by Kruskal (1964). Table 5.7 shows the results of the analysis for each of the analyzed years.

Table 5.5. Descriptive statistics: Year 2000

Year 2000												
Situation		NI	OPI	WC	LIAB	CF	OACF	ES	Total_S	Total_C	CSR_S	CSR_C	CSR_global
	Aver.	0,09	0,14	0,22	0,52	0,13	0,13	0,48	1,96	1,74	0,34	0,42	-0,08
	SD	0,06	0,07	0,17	0,18	0,06	0,07	0,18	2,20	2,08	0,39	0,48	0,48
	Min.	0,00	0,01	0,00	0,06	0,03	0,01	0,03	0	0	0,00	0,00	-2,22
Healthy	Max	0,29	0,47	0,78	0,97	0,36	0,35	0,94	10	15	1,73	3,37	1,44
	Aver.	0,03	0,08	0,04	0,65	0,07	0,07	0,35	2,31	2,55	0,39	0,58	-0,20
	SD	0,08	0,10	0,21	0,20	0,08	0,10	0,20	2,34	2,56	0,39	0,57	0,61
	Min.	-0,30	-0,30	-0,39	0,06	-0,29	-0,35	-0,53	0	0	0,00	0,00	-2,44
Distress	Max	0,39	0,69	0,86	1,53	0,42	0,35	0,94	12	12	2,09	2,64	1,17
	Aver.	0,06	0,12	0,15	0,57	0,11	0,11	0,43	2,09	2,04	0,36	0,48	-0,12
	SD	0,07	0,09	0,20	0,20	0,07	0,08	0,20	2,26	2,30	0,39	0,52	0,53
	Min.	-0,30	-0,30	-0,39	0,06	-0,29	-0,35	-0,53	0	0	0,00	0,00	-2,44
Total	Max	0,39	0,69	0,86	1,53	0,42	0,35	0,94	12	15	2,09	3,37	1,44

Table 5.6. Descriptive statistics: Year 2001

Year 2001												
Situation		NI	OPI	WC	LIAB	CF	OACF	ES	Total_S	Total_C	CSR_S	CSR_C	CSR_global
	Aver.	0,07	0,13	0,21	0,53	0,12	0,14	0,47	2,03	1,77	0,35	0,44	-0,09
	SD	0,05	0,07	0,17	0,18	0,05	0,07	0,18	2,26	2,05	0,39	0,48	0,49
	Min.	0,00	0,01	0,00	0,05	0,02	0,00	0,01	0	0	0,00	0,00	-1,73
Healthy	Max	0,24	0,41	0,80	0,99	0,30	0,39	0,95	12	14	2,09	3,22	1,51
	Aver.	-0,04	0,05	0,09	0,61	0,02	0,09	0,39	2,56	2,76	0,45	0,65	-0,21
	SD	0,38	0,10	0,22	0,21	0,35	0,08	0,21	2,47	2,56	0,42	0,58	0,60
	Min.	-4,58	-0,39	-0,53	0,05	-4,13	-0,11	-0,18	0	0	0,00	0,00	-2,40
Distress	Max	0,35	0,59	0,87	1,18	0,42	0,50	0,95	13	12	2,13	2,69	1,12
	Aver.	0,02	0,09	0,16	0,57	0,07	0,11	0,43	2,27	2,22	0,40	0,54	-0,14
	SD	0,27	0,09	0,20	0,20	0,24	0,08	0,20	2,37	2,34	0,41	0,54	0,55
	Min.	-4,58	-0,39	-0,53	0,05	-4,13	-0,11	-0,18	0	0	0,00	0,00	-2,40
Total	Max	0,35	0,59	0,87	1,18	0,42	0,50	0,95	13	14	2,13	3,22	1,51

Table 5.7. Kruskal's stress1 evaluation

			Kruskal's scale		
	Period	Stress-I level	Interval	Goodness of fit	Nr. Of Dimensions
Year 1	2000-2001	2,87%	2,5%-5%	Excellent-good	5
Year 2	2001-2002	3,64%	2,5%-5%	Excellent-good	5

Nonetheless, for the visual representation it would be very difficult to interpret the distances between points in a 5-dimensional space. As a consequence, the final graphs exposed here correspond to the better final bi-dimensional space representing a consensus map where the positioning are better emphasized (i.e. Dimensions 1 and 3 for the year 1; Dimensions 2 and 3 for the year 2). In order to observe the possible relation between financial situation and CSR strategy, we are going to represent the companies in two ways. Firstly, we will consider the existence of a financial distress situation and secondly we will consider the severity degree of the distress, as well as the origin or the causes of this situation (economic or financial). The possible existence of divergences in the positions based on these criteria would allow detecting to what extent the CSR strategies can be disguised under a slight group of symptoms. By means of the Co-Plot methodology previously discussed (Chapter II), the variables of the analysis were projected in the same dimensional space with the companies. The regression coefficient results for the 2 years are reported in Tables 5.8 and 5.9, respectively.

The results obtained are powerful enough to interpret the consensus maps allowing considering the representativeness of the positions of the firms with respect to original variables. Note that the goodness of fit, R Square, of the variables for the two years exceeds 70% except for the variables CSR_global (51,5%) in the year 2002 and WC/TA in the year 2002 (67%),which had the worst goodness of fit.

The consensus maps obtained are represented in Figures 5.1 and 5.2 for every year of the analysis, respectively. For a better representation and for a better visual observation, we expose the dimensions coordinates of both variables and individuals in a zero to one scale.

Table 5.8. Regression coefficient results for the Year 1

	Independent Variables										
	DIM1		**DIM2**		**DIM3**		**DIM4**		**DIM5**		
Dependent Variable	Beta	Sig.	Beta	Sig.	Beta	Sig.	Beta	Sig.	Beta	Sig.	R square
ZTotal_S_01	0,231	0,000	1,871	0,000	-1,928	0,000	-1,431	0,000	0,427	0,000	0,969
ZTotal_C_01	1,292	0,000	1,775	0,000	1,454	0,000	-1,034	0,000	0,264	0,000	0,979
ZCSR_S_01	0,203	0,000	1,813	0,000	-2,007	0,000	-1,468	0,000	0,399	0,000	0,975
ZCSR_C_01	1,204	0,000	1,79	0,000	1,512	0,000	-1,188	0,000	0,314	0,000	0,990
ZCSR_global_01	-1,019	0,000	-0,413	0,000	-2,929	0,000	0,08	0,000	-0,013	0,630	0,992
ZNI/TA_00	-1,924	0,000	1,238	0,000	0,59	0,000	0,721	0,000	0,805	0,000	0,932
ZOPI/TA_00	-1,78	0,000	1,276	0,000	0,466	0,000	1,135	0,000	0,898	0,000	0,903
ZWC/TA_00	-1,105	0,000	-1,065	0,000	0,475	0,000	-1,625	0,000	3,114	0,000	0,841
ZLIAB/TA_00	1,436	0,000	0,836	0,000	-0,629	0,000	2,412	0,000	1,128	0,000	0,969
ZCF_00	-1,915	0,000	1,349	0,000	0,511	0,000	0,725	0,000	0,131	0,090	0,940
ZOACF_00	-1,629	0,000	1,301	0,000	0,382	0,000	0,608	0,000	-1,585	0,000	0,790
ZES_00	-1,436	0,000	-0,836	0,000	0,629	0,000	-2,412	0,000	-1,128	0,000	0,969

Table 5.9. Regression coefficient results for the Year 2

	Independent Variables										
	DIM1		**DIM2**		**DIM3**		**DIM4**		**DIM5**		
Dependent Variable	Beta	Sig.	Beta	Sig.	Beta	Sig.	Beta	Sig.	Beta	Sig.	R square
ZTotal_S_02	0,162	0,000	-2,619	0,000	4,454	0,000	-3,713	0,000	0,238	0,400	0,848
ZTotal_C_02	-0,124	0,000	-4,807	0,000	-0,335	0,025	-2,349	0,000	-0,045	0,880	0,827
ZCSR_S_02	0,178	0,000	-2,509	0,000	4,442	0,000	-3,783	0,000	0,414	0,154	0,839
ZCSR_C_02	-0,154	0,000	-4,667	0,000	-0,186	0,228	-2,714	0,000	0,150	0,628	0,817
ZCSR_global_02	0,284	0,000	2,713	0,000	3,505	0,000	-0,161	0,566	0,162	0,748	0,515
ZNI/TA_01	1,323	0,000	0,274	0,008	1,717	0,000	0,945	0,000	-3,056	0,000	0,870
ZOPI/TA_01	0,357	0,000	0,916	0,000	4,842	0,000	2,962	0,000	-2,351	0,000	0,720
ZWC/TA_01	-0,055	0,226	3,157	0,000	-0,954	0,000	-3,915	0,000	-4,194	0,000	0,667
ZLIAB/TA_01	0,245	0,000	-3,840	0,000	-0,328	0,013	4,722	0,000	-1,696	0,000	0,865
ZCF_01	1,324	0,000	0,319	0,003	1,880	0,000	0,955	0,000	-2,284	0,000	0,863
ZOACF_01	0,021	0,601	1,125	0,000	4,664	0,000	1,924	0,000	6,133	0,000	0,723
ZES_01	-0,245	0,000	3,840	0,000	0,328	0,013	-4,722	0,000	1,696	0,000	0,865

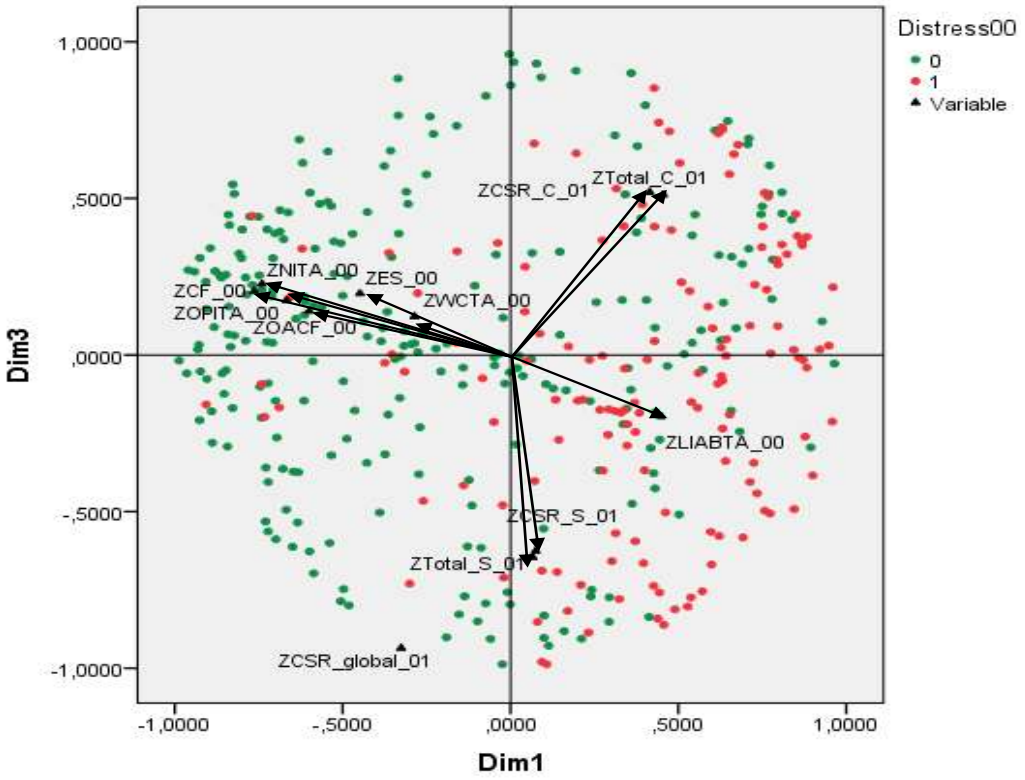
As we can see, in the first year of analysis, (Figure 5.1) there is a clear differentiation among firms according their financial situation in t-year. Healthy enterprises are located to the left of the dimension 1 and companies who have some form of financial distress situation, are located to the right. This differentiation is consistent with the positioning of the financial variables; thus, we can consider that dimension 1 collects information related to the economic-financial of firms. In the same vein, dimension 3 can be interpreted as the performance of the companies on CSR in t+1-year. The lower part of this dimension gathers proactive companies on social responsibility and the upper part companies that present greater weaknesses in this analyzed responsibility dimension.

A similar situation can be seen for the second year (Figure 5.2). In this year, however, there is no dimension that clearly reflects only economic and financial information as it occurred in the first year of analysis.

As a result, we can observe that companies in crisis situation are located in the lower left side and upper left part of the plot in year 2 (Figure 5.2). In this case, an imaginary diagonal line clearly marks the separation between healthy and distressed firms and there surely is some other type of information that allows the positioning and differentiating among them.

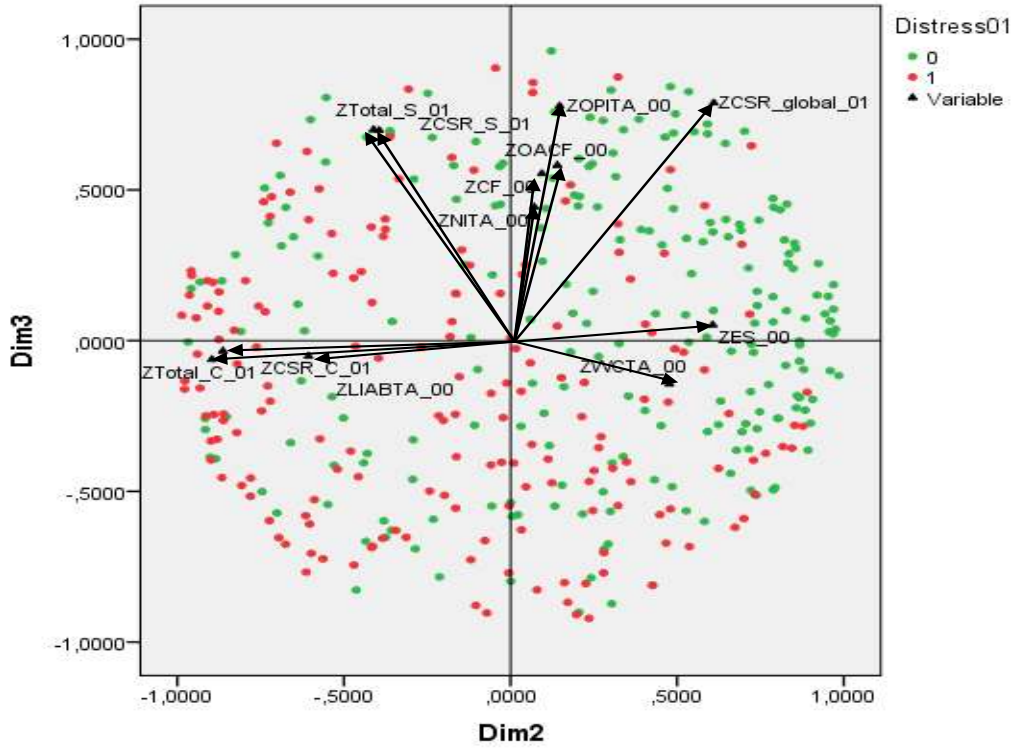
Therefore, in the representation of the year 2, dimension 2 is associated with information on not responsible behaviors and on solvency. Companies with more concerns would be characterized by worst financial structures. On the other hand, dimension 3 reflects the performance of the company both from the economic point of view, collecting variables such as profitability and results, and from the proactive attitudes on CSR. The differences in the representation of both years could be explained by the attitude change towards CSR during these years. *De facto*, as it will be discussed later on, these results are indeed significant in this sense. This change in attitude could be explained by the fact that starting from 2001, KLD makes public the valuations in responsible behavior of a wider number of firms. These assessments make firms more vulnerable to the markets opinion on these behaviors.

Figure 5.1. Factorial plane 1-3 for the Year 1



0: Healthy firms; **1**: distressed firms;

Figure 5.2. Factorial plane 2-3 for the Year 2



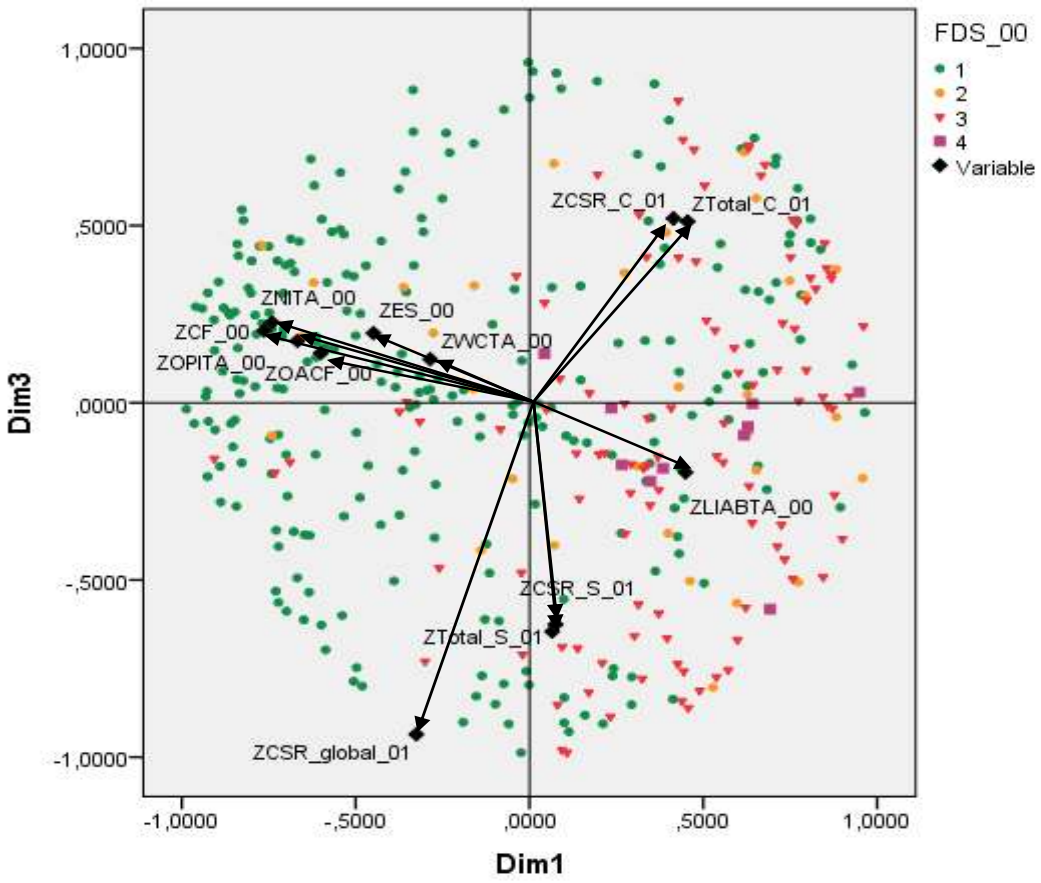
0: Healthy firms; **1**: distressed firms.

In the years analysed, and taking into account only the classification of healthy firms and distressed firms, we can observe that, at first, there are no obvious differences between the positions of companies according to the strengths in CSR. This issue is consistent with the initial starting approach about the non-existence of CSR structural differences between the companies that show different symptoms of crisis and healthy companies. However, with regard to the concerns, there are more companies in crisis situation, positioned to the side of the map where the variables TOT_C and CSR_C are plotted. This situation is much more appreciable looking at the graphical representations corresponding to the year 2. Taking into account the characteristics of the items considered in KLD as representative of concerns, we can presume that, in fact, companies that have to deal with solving a delicate economic-financial situation, redirect their actions towards more beneficial types of actions for these purposes.

In particular, to analyse the possible association between financial distress situation and CSR strategies, the above graphs were drawn again but this time, for the positions of firms, we set markers according to their degree of severity of the distress, as well as the possible origin of this distress: economic problems, linked to his performance and level of activity, or financial problems linked to solvency or generation of cash flow. These representations correspond to the Figures 5.3 and 5.4 for years 1 and 2, respectively.

Companies in severe crisis are the worst positioned with respect to the investment in responsible behavior, as well as the overall evaluation measured through the CSR_global variable. These locations are in agreement with the posed idea that the degree of severity of the crisis marks differences in the attitude of the company on CSR and this statement is evident looking at the graphical representations of the years 2 and 3. Companies with economic weaknesses are mainly located in quadrant characterized by concerns and without a proactive attitude towards CSR. In this way, they show a tendency to avoid additional costs that might negatively impact on their already deteriorated results.

Figure 5.3. Factorial plane 1-3 for the Year 1 according to distress

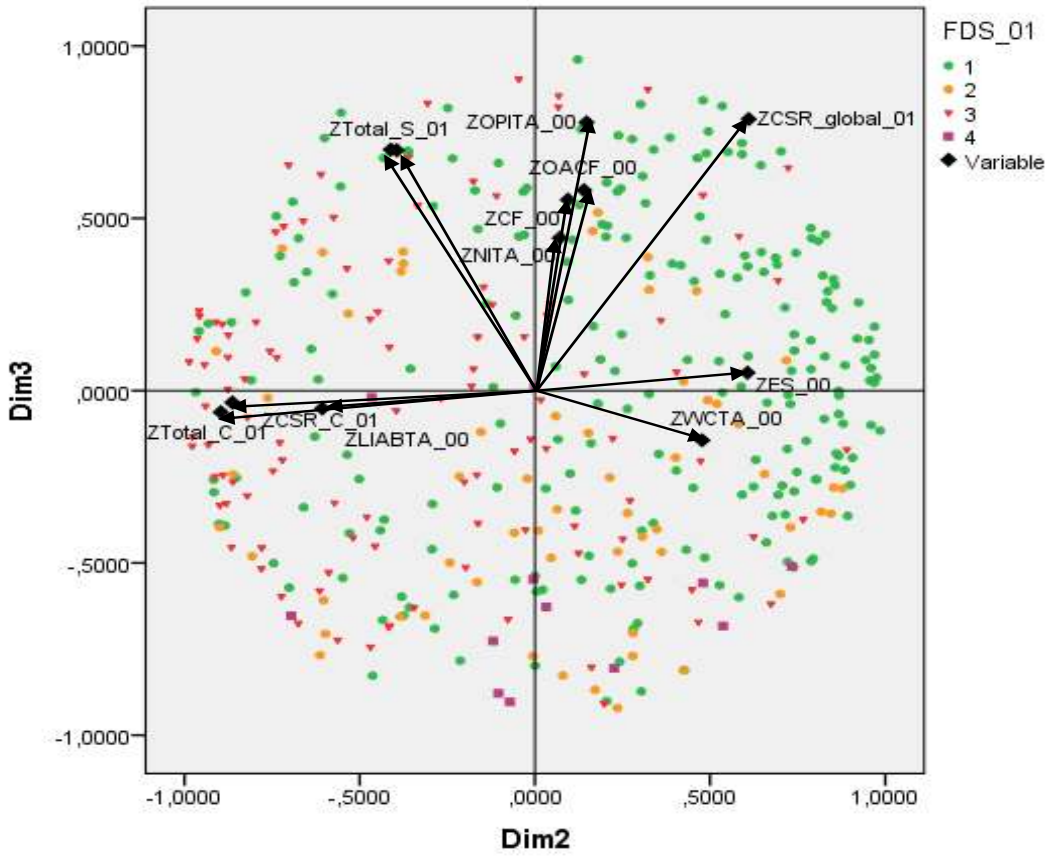


1: Healthy firms; **2**: weak crisis firms (operational concerns); **3**: weak crisis firms (financial concerns); **4**: strong crisis firms.

Companies with financial weaknesses present irregular behavior. A significant number of these companies are positioned in the lower right quadrant without presenting a negative assessment from the concerns point of view and some of them extend in the direction of the dimension 3 which marks a responsible behavior. These companies present higher rates of debt, so supporting the strategy of seeking "reputation" in order to promote their image in front of investors and lenders to reduce cost of capital or even to renegotiate debt. However, in the following years of our analysis, these companies evolve in their attitudes on responsible actions. The graphs show that they tend to be placed along the line which marks the concerns; even liability variable (LIAB) is plotted closest to the TOT_C and CSR_C variables. This could be explained because during these two years the debt level of companies with problems increased. The companies may have "redirected" their strategy focusing on the economic performance, such as cost reduction,

to relieve their results so that they can to obtain funds and cash flow for remunerating the external capital.

Figure 5.4. Factorial plane 2-3 for the Year 2 according to distress



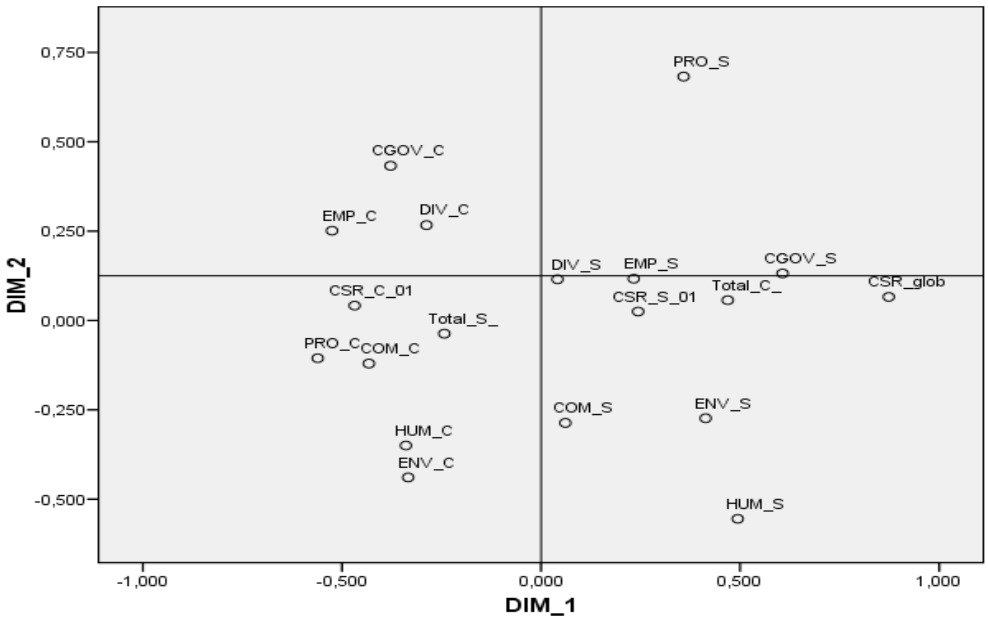
1: Healthy firms; **2**: weak crisis firms (operational concerns); **3**: weak crisis firms (financial concerns); **4**: strong crisis firms.

In order to analyse more in particular the profiles of companies with respect to their CSR performance we must take into account their ratings in each of the individual dimensions measured in the KLD. Remembered that KLD uses 7 dimensions, the positive ones as strengths and negative ones as concerns, to assess the socially responsible behaviour of a company: Community (COM), Corporate Governance (CGOV), Diversity (DIV), Employee relations (EMP), Environment (ENV), Human Rights (HUM) and Product (PRO). However, the short range of variation of the scores for these individual dimensions (0 to 4 in most dimensions and 0-2 in many of them), as well as the number of companies counting up the same value obstruct their introduction in the MDS analysis,

preventing consistent results and acceptable degrees of representativeness. For this reason, we performed a MDS taking into account the Euclidean distance between variables as a measure of similarity between them, allowing plotting to what measure the CSR strategies are characterized by proactive or reactive attitudes in certain dimensions. In this case, if two variables appear next in the consensus map it means that they share original data structures among individuals in the sample; therefore it can be understood as part of a common behavior pattern. Just like in the representation of companies, for space reasons we expose the plots in those two dimensions that better reflect the differences of the different variables associated with social responsibility positions (Figure 5.5 and 5.6 for years 1 and 2, respectively). Either way, in the three years analyzed, the MDS in 5 dimensions showed good levels of Stress-I: 0.04 (2001) and 0.05 (2002).

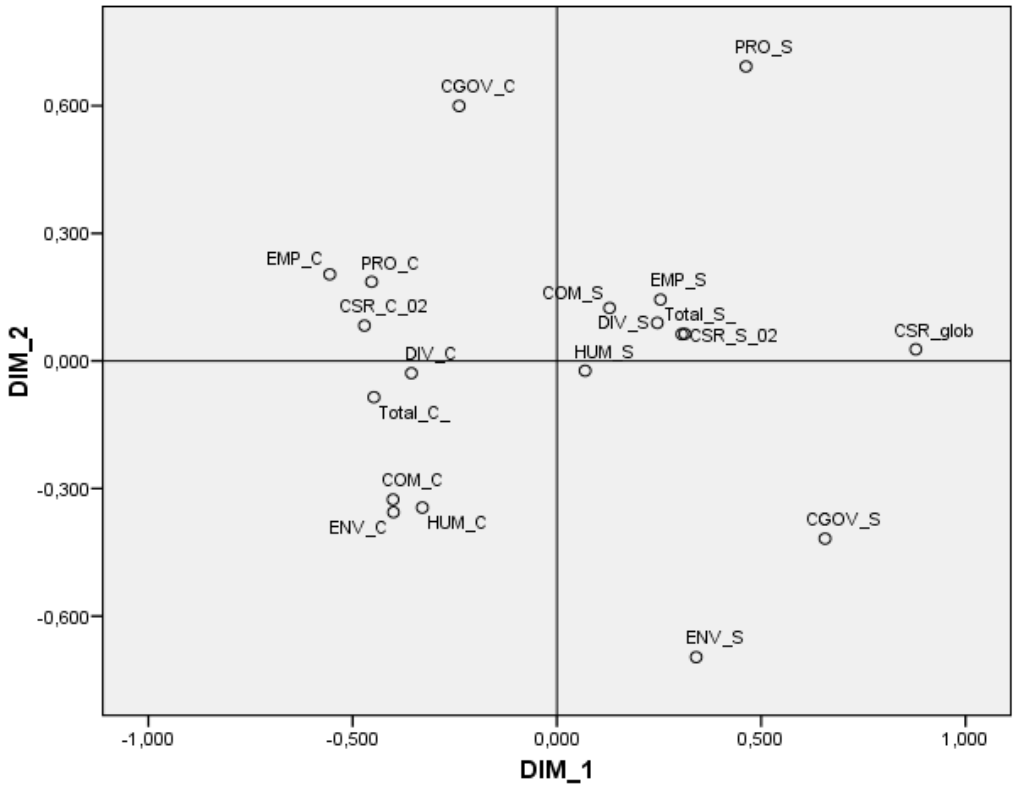
It can be observed that for the two years, dimension 1 perfectly discriminates responsible actions, to the right, and not responsible actions, to the left side of the plot. Most of the variables appear concentrated along this dimension, mainly in year 2, from the point of view of the strengths and of the concerns. We can assert that companies who care about social responsibility tend to express it with valuable actions positively assessed in all areas. This same claim can be made on not responsible behaviors, according to the proximity of the positions of certain variables located in the left part of the graph, also most prominent in the last year of analysis.

Figure 5.5. Factorial plane 1-2 of the Variables: Year 1



However, it is necessary to emphasize the placement of specific variables like CGOV_C, HUM_C and ENV_C on the concerns part and PRO_S, ENV_S and CGOV_S on the strengths side. These variables appear, somehow, bland from the rest as if they were strategies that do not respond to a general responsible (or not) attitude in those dimensions.

Figure 5.6. Factorial plane 1-2 of the Variables: Year 2



Companies that are negatively valued in the dimension Human Rights (HUM), also express negative behaviors in Environment (ENV). The fact that these variables appear close to each other in the graphical representation and the disproportion of items valued at each of these individual dimensions of CSR could be simply justified by the fact that firms negatively valued in both directions have generally little or no awareness of social nature. Nevertheless, we should consider that items rated by KLD in the Human Rights concerns have to do with the existence of controversial company's operations in Mexico, including especially those related to the degradation of the environment. Therefore, these companies may be firms with production activities conducted towards Mexico or near the

border, whose poor environmental awareness policy could be being valued in both dimensions at the same time.

It can be observed that, in the years analyzed, the former two variables have a totally opposite behavior compared to Product (PRO) strengths. KLD positively assesses this dimension when a company has an adequate and/or recognized quality program or it is leader in its industry for research and development (R&D). These aspects are consistent with an environmentally responsible KLD attitude by: innovative products or environmental remediation services or innovative products with environmental benefits. It is also necessary to note that, according to Figures 5.5 and 5.6, environmentally responsible companies also show a positive assessment (high strengths) in Corporate Governance. Being evaluated negatively in this last variable, however, does not seem be associated to any specific profile or related to any other type of positive or negative action on CSR; the variable CGOV_C is located far away from the rest of variables, most significantly in year 2.

To give consistency to the results obtained by the MDS analysis, we studied if the means representing different groups of companies - classified on the basis of the existence or not of a financial distress situation and the severity and features of such crisis - are statistically significant. The Tables 5.7 to 5.10 show the main results of these analyses.

Regarding the attitude of social responsibility (Table 5.7), we observe a uniform behavior of firms during the three years regardless of their financial situation. The proactive behavior measured by CSR_S, as well as negative concerns (CSR_C), increase during the two years. The results in Table 5.7 show that, as stated earlier, there are differences in the attitude and behavior between firms in the analyzed years, and these differences are independent from their economic-financial situation. As previously commented, the wider range of KLD database in valuing firms, may have motivated the fact that firms worry more about their responsible image. As a result, average CSR_global variable experienced a statistically significant decrease.

Table 5.7. Differences between CSR variables across years.

Total Sample	Year 1	Year 2	t (Y1-Y2)	Sig.
CRS_S	0,36	0,4	-5,887	0,000
CRS_C	0,48	0,54	-6,123	0,000
CRS_Global	-0,12	-0,14	2,028	0,043
Healthy	**Year 1**	**Year 2**	**t (Y1-Y2)**	**Sig.**
CRS_S	0,34	0,36	-4,393	0,000
CRS_C	0,42	0,47	-43723	0,000
CRS_Global	-0,079	-0,101	1,683	0,094
Crisis	**Year 1**	**Year 2**	**t (Y1-Y2)**	**Sig.**
CRS_S	0,39	0,43	-3,928	0,000
CRS_C	0,58	0,64	-3,894	0,000
CRS_Global	-0,195	-0,214	1,13	0,260

Table 5.8. Differences between healthy and distressed firms in CSR.

Variables	Healthy	Crisis	Sig.
TOTAL_S_01	1,96	2,31	0,140
TOTAL_C_01	1,74	2,55	0,001
CRS_S_01	0,342	0,389	0,254
CRS_C_01	0,421	0,584	0,002
CRS_GLOBAL 01	-0,078	-0,195	0,037
TOTAL_S_02	2,03	2,56	0,028
TOTAL_C_02	1,77	2,76	0,000
CRS_S_02	0,352	0,446	0,024
CRS_C_02	0,442	0,653	0,000
CRS_GLOBAL 02	-0,09	-0,207	0,038

Table 5.9. Differences between healthy and distressed firms in individual CSR dimensions

Variables	Healthy	Distressed	Sig.
COM_C_01	0,09	0,25	0,000
DIV_S_01	0,73	0,99	0,045
ENV_C_01	0,4	0,75	0,001
PRO_C_01	0,29	0,5	0,009
COM_S_02	0,29	0,45	0,039
COM_C_02	0,09	0,31	0,000
DIV_S_02	0,77	1,1	0,023
EMP_S_02	0,45	0,71	0,005
ENV_C_02	0,29	0,88	0,000

Table 5.10. Differences between weak operational and weak financial firms in individual CSR dimensions

Variables	Economical	Financial	Sig.
COM_C_01	0,03	0,32	0,005
ENV_S_01	0,13	0,39	0,011
ENV_C_01	0,39	0,88	0,036
COM_C_02	0,1	0,35	0,003
ENV_C_02	0,45	0,96	0,007
HUM_C_02	0,05	0,19	0,046
PRO_S_02	0,33	0,09	0,001
PRO_C_02	0,29	0,54	0,046

These same behaviors occur when we analyzed separately the healthy firms and distressed firms, so we can assert that there is a common pattern in the market or that there are external and contextual issues that influence the strategy or attitude of companies against CSR. If we analyze the differences between companies with problems and the healthy ones (Table 5.8), the formers have higher and statistically significant concerns in the years studied and, in general, a lower overall score. However, their CSR strength valuation is not statistically different from the behavior presented by healthy companies, except in year 2 that offers an even higher valuation of TOTAL_S and CSR_S. These results confirm that the companies in crisis, indeed, continue to maintain a proactive approach to responsible behavior that might be motivated by the intent to "mitigate" the weak image offered by their financial data. However, because of their deteriorated economic and / or financial situation, they try to ignore certain aspects that may be cost associated, which is why they present a higher valuation on weaknesses. In this way (Table 5.9), they are committed to low-cost but high impact responsible behavior as the variable DIV_S, where facts like having a woman or a member of a minority group as chief executive officer, promotion programs to women and minorities, programs addressing work/life concerns (e.g., childcare, elder care, or flextime), or implementing notably progressive policies toward their gay and lesbian employees. On the contrary, these firms are negatively valued on issues associated with ENV_C and PRO_C which highlight the existence of liabilities, civil penalties actions or disputes that may be explained by not investing in R&D activities to improve their production processes and/or products. It should be noted that companies in crisis also presented greater Community concerns than the healthy companies in the years analyzed. This variable evaluates issues such as whether the company has recently been involved in major tax disputes involving Federal, state, local or non-U.S. government authorities, or is involved in controversies over its tax obligations to the community.

Finally (Table 5.10), regarding the possible differences between companies that are in a weak financial distress position. We can affirm that those companies whose situation is explained by economic issues (poor performance) show more responsible values, statistically significant, in the dimension associated with the product (PRO_S) than those in a weak financial situation (solvency problems). These results are consistent with the approach of the existence of a strategy to improve the income statements by the

progress of products by means of increased sales, quality programs and concerns about R&D to obtain innovative product that may place them as market leader.

5.4. Conclusions

The purpose was to explore if managers of firms in a financial distress situation try to "handle" the image of the weak financial situation throughout investments in responsible actions as a mechanism in order to supply future solidity to the firm. Doing so, investors and the market itself would be infected by this behavior of future expectations of the managers.

The results evidence the no existence of structural CSR differences between the companies that show symptoms of a crisis and the healthy ones, with respect to those aspects considered as strengths in CSR behavior. In this sense, either the responsible attitude is inherent to the philosophy of management and it is independent of the financial situation, or managers of companies in a declining process have, indeed, a strategy process to "soften" the image shown by their weak economic and financial data by means of responsible behavior.

Moreover, we did obtain evidence that there exist differences in the valuation of concerns. Companies in crisis are worse valued with respect to the negative items included in the KLD and this could be a consequence of the tendency to reduce costs and investments that may continue weakening an already deteriorated financial situation. These companies are characterized by a CSR strategy aimed at investing in responsible behavior with a high level of social or reputational impact but with a low investment cost, such as gender diversity.

The differences in the responsible behaviors for weak firms from an operational performance view and weak firms from a financial structure view can be caused, to some extent, by such situations. Companies weak in performance need to improve their short-term income statement and this can be seen in the tendency to cut costs and invest in stocks with a direct benefit on turnover rather than social standing.

References

Arora, P. and Wadwarkar, R. (2011), "Corporate Governance and Corporate Social Responsibility (CSR): The Moderating Roles of Attainment Discrepancy and Organization Slack". *Corporate Governance: An International Review*, Vol. 19, No. 2, pp. 136-152. Available at SSRN: http://ssrn.com/abstract=1775592 or doi:10.1111/j.1467-8683.2010.00843.x

Bear, S, Rahman, N, and Post, C. (2010), "The Impact of Board Diversity and Gender Composition on Corporate Social Responsibility and Firm Reputation". *Journal of Business Ethics*, 97 (2), pp. 207-221

Boesso, G., and Michelon, G. (2010), "The Effects of Stakeholder Prioritization on Corporate Financial Performance: An Empirical Investigation", *International Journal of Management*, 27 (3), pp. 470-496.

Ghoul, S., Guedhami, O., Kwok C. and Mishra, D. (2011), "Does corporate social responsibility affect the cost of capital?". *Journal of Banking and Finance*, 35 (9), September, pp. 2388-2406

Godfrey, P. C., Merrill, C. B., and Hansen, J. M. (2009), "The relationship between corporate social responsibility and shareholder value: An empirical test of the risk management hypothesis". *Strategic Management Journal*, 30, pp. 425–445.

Graves, S. B. and Waddock, S. A. (1994), "Institutional owners and corporate social performance". *The Academy of Management Journal*, 37, pp. 1034–1046.

Griffin, J. and Mahon, J. (1997), "The corporate social performance and corporate financial performance debate", Business and Society, 36 (1), p. 5

Hillman, A. J. and Keim, G. D. (2001), "Shareholder value, stakeholder management, and social issues: What's the bottom line?". *Strategic Management Journal*, 22, pp. 125–139.

Ho, L-C. J. and Taylor, M. E. (2007), "An Empirical Analysis of Triple Bottom-Line Reporting and its Determinants: Evidence from the United States and Japan".

Journal of International Financial Management and Accounting, 18 (2), pp. 123-150, Available at SSRN: http://ssrn.com/abstract=990124 or doi:10.1111/j.1467-646X.2007.01010.x

Hull, C. and Rothenberg, S. (2008), "Firm performance: the interactions of corporate social performance with innovation and industry differentiation". *Strategic Management Journal*, 29 (7), pp. 781-789.

Ioannou, I and Serafeim, G. (2010), "The impact of Corporate Social Responsibility on Investment Recommendations". Harvard Business School Accounting and Management Unit Working Paper No. 1507874, pp. 11-17, Available at SSRN: http://ssrn.com/abstract=1507874 or doi:10.2139/ssrn.1507874

Kacperczyk, A. (2009), "With greater power comes greater responsibility? Takeover protection and corporate attention to stakeholders". *Strategic Management Journal*, 30, pp. 261–285.

Kruskal, J. B. (1964), "Nonmetric multidimensional scaling: a numerical method". *Psychometrika*, 29, pp. 115–129.

Kruskal, J.B. and Wish, M. (1984), "Multidimensional Scaling". Sage, London.

Mar Molinero, C. and Ezzamel, M. (1991), "Multidimensional Scaling Applied to Corporate Failure", *Omega,* 19 (4), pp. 259-274.

Mattingly, J. E. and Berman, S. L. (2006), "Measurement of corporate social action: discovering taxonomy in the Kinder Lydenburg Domini Ratings data". *Business and Society*, 45 (1), p. 20.

Melo, T. and Galán J.I. (2011), "Effects of corporate social responsibility on brand value." *Journal of Brand Management*, 18.6, pp. 423-437.

Melo, T. and Garrido-Morgado, A. (2012), "Corporate Reputation: A Combination of Social Responsibility and Industry". *Corporate Social Responsibility and Environmental Management*, 19, pp. 11–31. doi: 10.1002/csr.260

Neophytou, E. and Mar Molinero, C. (2004), "Predicting Corporate Failure in the UK: A multidimensional Scaling Approach". *Journal of Business Finance and Accounting*, 31 (5), pp. 677-709.

Peña, D. (2002), "Análisis de Datos Multivariantes", MacGraw Hill.

Peters, R, and Mullen, M. (2009), "Some Evidence of the Cumulative Effects of Corporate Social Responsibility on Financial Performance". *Journal of Global Business Issues*, 3 (1), pp. 1-14

Ruf, B. M., Muralidhar, K., Brown, R. M., Janney, J. J. and Paul, K. (2001): "An empirical investigation of the relationship between change in corporate social performance and financial performance: a stakeholder theory perspective". *Journal of Business Ethics*, 32, pp. 143–56.

Siegel, D.S. and Vitalino, D.F. (2006), "An empirical analysis of the strategic use of corporate social responsibility". *Journal of Economics and Management Strategy,* 16 (3), pp. 773-792.

Strike, V. M., Gao, J., and Bansal, P. (2006), "Being good while being bad: Social responsibility and the international diversification of US firms". *Journal of International Business Studies*, 37, pp. 850–862.

Waddock, S. A. and Graves, S. A. (1997), "The Corporate Social Performance-Financial Performance Link". *Strategic Management Journal*, 18 (4), pp. 303-319.

Wood, D. J. and Jones, R. E. (1995), "Stakeholder mismatching: A theoretical problem in empirical research on corporate social performance". *International Journal of Organizational Analysis*, 3, pp. 229-267.

CHAPTER VI. INVESTMENT IN SOCIAL RESPONSIBILITY AS A STRATEGY OF DISTRESS RECOVERY.

Chapter VI. Investment in Social Responsibility as a Strategy for distress recovery.

6.1. Introduction

In the previous chapter we obtained evidence that there exist underlying structural characteristics that mark the differences and similarities between firms considering the fact that they have faced a financial distress situation. By means of the consensus map obtained by MDS, which allows representing, simultaneously, individuals and variables used in the analysis, we cannot identify if there exist groups of firms that share the same specific profile. At the same time, the available information on CSR variables individually considered prevented their plotting in the same map in order to determine firms' patterns in a more effective way.

The present chapter is oriented towards the analysis of CSR profiles of U.S. firms in order to identify the possible association clusters and to determine if these clusters are or could be linked to the existence of a financial distress situation. As in the previous chapter, we start from the existence of an incentive towards the modification of responsible behavior by firms facing a crisis situation. Regarding the previous chapter, the basic differences consist in:

- A more precise definition of the analyzed firms.
    - ✓ We center the analysis in the second biennium given that the results showed a change in the attitude of firms, regardless of their crisis conditions, starting from 2001, and with a significant difference between values obtained in the year 2000 and in 2001. The fact that this change could be motivated by the incorporation in KLD database of the bigger 1000 U.S. firms in the year 2001, allows us considering more reasonable taking this year as basic reference.
    - ✓ An additional filter was performed, so that in the year 2000 no firm presented any weakness symptom indicating a situation of crisis. In this way, we made sure that the differentiation between healthy and distressed firms in effect occurred in year t.
- For the cluster identification, we selected the two-step cluster methodology which allows discovering natural grouping of individuals which are difficult to

observe in a direct manner. At the same time, it consents to automatically obtain the optimal number of clusters.

For this purpose we will analyze the patterns of responsible behavior to determine the identity marks of the firms and explore if the behavior profiles could be related to the existence of a distressed situation or whether they are not.

6.2. The sample

The analysis is performed on the valuation of responsible behaviors of the 1000 more capitalized U.S firms in the year 2001, according to KLD database. Thompson database information was used in classifying the firms as distressed based on the economic and financial characteristics and symptoms discussed in previous chapters. The matching of the two databases gave as a result 392 firms. To avoid influences swept along previous years, only firms showing a healthy situation in the year 2000 were selected so that the final sample is composed of 248 firms. By doing so, we make sure that firms classified as being in distress in the year 2001 came from, at least, a year of stability. Considering the former information, sample firms were classified as shown in Table 6.1.

Table 6.1. Group classification of firms

<table>
<tr><th colspan="2">Classification</th><th colspan="2">Criteria</th></tr>
<tr><td colspan="2">Healthy (186)</td><td colspan="2">No symptoms</td></tr>
<tr><td rowspan="2">Weak Distress</td><td>Economic (40)</td><td rowspan="2">< 3 criteria</td><td>Economic criteria are dominant</td></tr>
<tr><td>Financial (17)</td><td>Financial criteria are dominant</td></tr>
<tr><td colspan="2">Strong Distress (5)</td><td colspan="2">4 or more criteria</td></tr>
</table>

6.3. The variables

The variables used to classify the profiles of responsible behaviors are gathered in Table 6.2.

Table 6.2. Variables of the analysis.

Variable	Definition
Total_S	Sum of total strengths assessed in KLD considering all dimensions valuations.
Total_C	Sum of total concerns assessed in KLD considering all dimensions valuations.
CSR_S	Sum of total strengths assessed in all dimensions weighted by the items included in each of them.
CSR_C	Sum of total concerns assessed in all dimensions weighted by the items included in each of them.
*Dimension*_S (*)	Sum of strengths in the corresponding dimension.
*Dimension*_C (*)	Sum of concerns in the corresponding dimension.

(*) Dimensions correspond to: Community, Corporate Governance, Diversity, Employee relations, Environment, Human Rights and Product.

In addition, we introduce two categorical variables:

- *Prob_01* which gathers information on the situation of a firm in the year 2001, taking 0 value (when firms are healthy) and 1 otherwise (when firms present any symptom of distress)
- *Situation_01*, which classifies distressed firms in three categories depending on the degree and type of distress, taking values: healthy, weak economic distress, weak financial distress and strong distress, following the classification in Table 6.1.

6.4. The methodology

In order to evidence the existence of common patterns we will perform a Two-Step Cluster Analysis, developed by Chiu *et al.* (2001). The name itself indicates that the analysis is based on two stages. First, an algorithm similar to k-means algorithm is performed and then a hierarchical agglomerative clustering combines the individuals in order to create homogenous clusters (Mooi and Sarstedt, 2011)

This exploratory procedure permits evidencing the possible natural agglomeration between individuals, according to certain variables, that in a direct way would be difficult to observe. This technique has the advantage of managing categorical and continuous variables, as it is the case of being in distress or the degree of the same (Prob_01 and Situatuon_01). Moreover, it allows contrasting the significance level of each variable in the formation of each agglomeration, that is, through Chi-Square for categorical variables and T-Student for continuous variables.

Log-likelihood distance is used to calculate the distance between clusters because we manage continuous and categorical variables. In addition, as the clusters are grouped into one cluster, their distance is associated with the reduction of the natural logarithm of likelihood function (Shiopu, 2010). To determine the number of clusters we opt for the Bayesian Information Criterion (BIC) (Schwarz, 1978). The BIC criterion (clustering method) is computed for each possible number of clusters. The smaller the values of the BIC, the better the models are, and as a consequence, the best cluster will have the smallest BIC value.

The analysis will be performed separately for variables representing positive responsible behaviors (strengths) and for variables representing negative responsible behaviors (concerns), following the arguments stated in previous chapters. In addition, we introduce two categorical variables representing the existence or not of distress (values 0 or 1) or the degree and type of the distress the firms presents (up to 4 values).

The two step cluster analysis will be performed over the variables gathering social responsible actions of firms in the year 2002, in order to explore, as already specified, the possible existence of incentives for distressed firms to mitigate, their weak economic and financial indicators, once distress has been identified. However, the analysis of the 2001 data allows determining if these agglomerations existed previously, without considering their association with distress.

6.5. Empirical results and discussion

Considering the information gathered in Table 6.3, firms presenting some type of distress in the year 2001 have better valuation in responsible behaviors concerning strength items and worse behaviors regarding concerns, when compared to healthy

firms. In the year 2002, this situation remains still so that the global assessments do not indicate any movement in the responsible actions incentivized by the distressed situation a firm is going through. In this sense, the valuation of responsible behaviors, proactive and reactive, one year after the classification of the economic-financial situation, is higher for both groups and for the global sample. This fact allows evidencing that the behaviors follow an evolutionary pattern independent from the existence or not of a distressed situation. These increases in the valuation are statistically significant (0,000) for the overall sample and for healthy firms, in all the four variables taken into account. However, in the case of distressed firms, the differences in the valuations for the two years analyzed are significant only in those variables gathering strengths information (TOT_S and CSR_S, 0.004 and 0.019 respectively).

Table 6.3. Differences in overall assessments for the years 2001-2002

	2001						2002					
	Total		Distressed		Healthy		Total		Distressed		Healthy	
	M	D	M	D	M	D	M	D	M	D	M	D
TOT_S	1,96	2,20	2,31	2,30	1,85	2,16	2,14	2,35	2,52	2,47	2,01	2,31
TOT_C	1,74	2,08	2,31	2,35	1,55	1,95	1,91	2,11	2,42	2,32	1,74	2,01
CSR_S	0,34	0,39	0,42	0,42	0,32	0,37	0,38	0,41	0,45	0,43	0,35	0,40
CSR_C	0,42	0,48	0,55	0,53	0,38	0,45	0,48	0,49	0,59	0,52	0,44	0,48

Variables	Total	Healthy	Distressed
TOT_S_01-TOT_S_02	-4,535(0,000)	-3,547 (0,000)	-3,016 (0,004)
TOT_C_01-TOT_C_02	-3,609(0,000)	-3,519(0,001)	-1,154(0,253)
CSR_S_01-CSR_S_02	-4,393(0,000)	-3,671(0,000)	-2,416(0,019)
CSR_S_01-CSR_S_02	-4,723(0,000)	-4,529(0,000)	-1,621(0,110)

We performed an analysis to evidence if the differences observed in the average valuation of distressed and healthy firms could be explained by some underlying cause. The differences resulted significant only for the behaviors related to non-responsible actions, measured by concern variables and only for the year 2001 (TOT_C_01 (0.01) and CSR_C_01 (0.01). In this way, the worse valuation in 2002 of the distressed firms is not statistically different from the valuation of healthy firms. Distressed firms facing remarkable continuity problems, tend to be carefree in certain dimensions of responsible behavior, yet not less than firms that do not present any distress symptoms in the previous year.

In spite of these results, we cannot affirm a priori that there exist a common pattern or conduct profile between firms that may or may not face a certain distressed situation. Performing the two step cluster analysis allows us clarifying some of these previous issues.

6.5.1. Clusters for the year 2002 – Strengths

We identify 5 optimal clusters following the BIC criterion (Table 6.4). The number of clusters corresponds to the lowest BIC value for the selection. The number of firms grouping in each cluster, based on prob_01 variable which represents the existence of distress, is shown in Table 6.5.

Table 6.4. Auto-clustering statistics

Number of clusters	Schwarz's Bayesian Criterion (BIC)	BIC Change	Ratio of BIC changes	Ratio of Distance Measures
1	1754,873			
2	1509,140	-245,734	1,000	1,840
3	1423,431	-85,709	,349	1,014
4	1340,353	-83,078	,338	1,562
5	1324,873	-15,480	,063	1,767
6	1361,579	36,705	-,149	1,270

Table 6.5. Distribution of cases in clusters

Cluster	0 (healthy) %	1 (distressed) %
1	5,4%	19,4%
2	30,6%	,0%
3	,0%	72,6%
4	18,3%	8,1%
5	45,7%	,0%
Combined	100,0%	100,0%

The interpretation of the clusters is performed by means of centroid analysis (Table 6.6) in each variable. It allows evidencing to what extent there exist differences between the cases grouped in each cluster, as well as interpreting the characteristics of the companies forming each agglomeration.

The results show that, in the year 2002, 72% of distressed firms are grouped in cluster 3, and no healthy firm shares similar profile with them. These firms are not positively valued, in general terms, though they present better average results than 46% of healthy firms. They also do not outstand in any dimension, yet they surpass the average values of more than 64% of the firms showing a stable situation. It is necessary to highlight that in cluster 1, there is a relevant number of distressed firms that are the best valued of the entire sample, except for actions regarding environmental issues, against only a 5% of healthy firms. On the other hand, healthy firms mostly agglomerate in cluster 2 and 5.

Nevertheless, the profiles of each cluster can be better identified by means of graphical representation that the two step cluster analysis offers, evidencing significant variables that determine each profile. In this sense, in Figure 1 are exposed the five clusters obtained from the analysis. The non-continuous line marks the critical point from which each variable is significant for the interpretation of the clusters. Those variables that cross this line are significant in the determination of companies' profile composing each cluster. The variables located in the positive value zone represent, in the corresponding cluster, scores above average values.

Table 6.6. Centroids

		Cluster					
		1	2	3	4	5	Combined
TOT_S_02	Mean	7,59	3,37	1,33	2,18	,31	2,14
	Std. dev	1,992	1,291	1,279	1,048	,512	2,353
CSR_S_02	Mean	1,3162879	,5742690	,2379630	,4326923	,0454902	,3755712
	Std. dev	,33516833	,20846591	,23139451	,19794619	,07619803	,40784309
COM_S	Mean	1,32	,56	,11	,00	,05	,28
	Std. dev	1,249	,682	,318	,000	,213	,650
CGOV_S	Mean	,41	,09	,09	,51	,00	,15
	Std. dev	,590	,285	,288	,601	,000	,393
DIV_S	Mean	2,77	1,40	,47	,38	,19	,78
	Std. dev	1,270	1,334	,625	,633	,450	1,161
EMP_S	Mean	1,82	,81	,49	,49	,07	,54
	Std. dev	,907	,854	,695	,683	,258	,809
ENV_S	Mean	,68	,11	,07	,79	,00	,22
	Std. dev	,568	,310	,252	,570	,000	,454
HUM_S	Mean	,00	,00	,00	,00	,00	,00
	Std. dev	,000	,000	,000	,000	,000	,000
PRO_S	Mean	,59	,40	,11	,00	,00	,17
	Std. dev	,590	,563	,318	,000	,000	,404

Figure 6.1. Significant variable forming Cluster 1

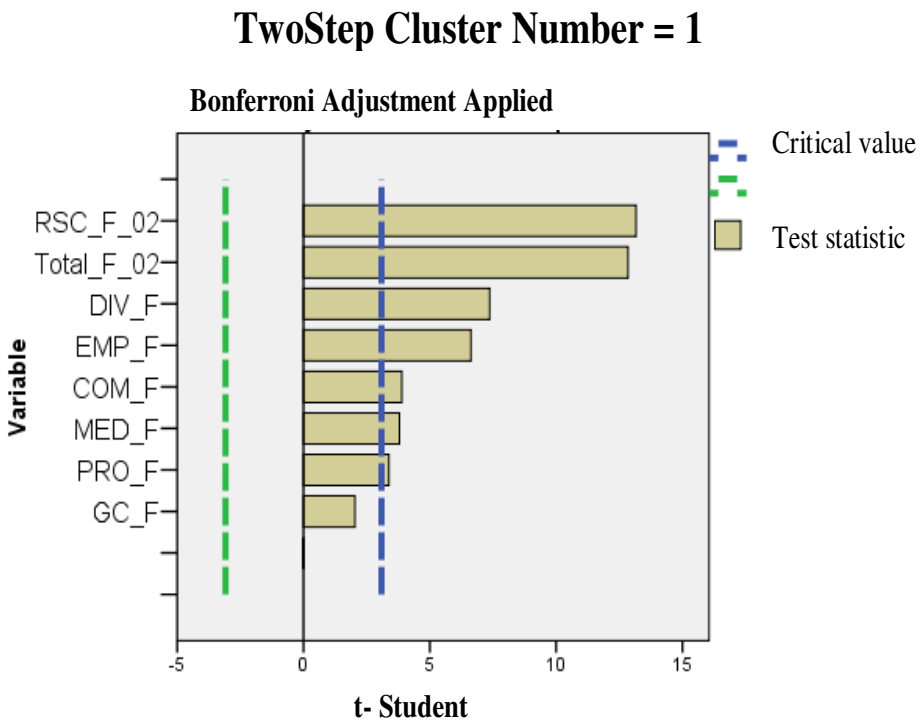


Figure 6.2. Significant variable forming Cluster 2

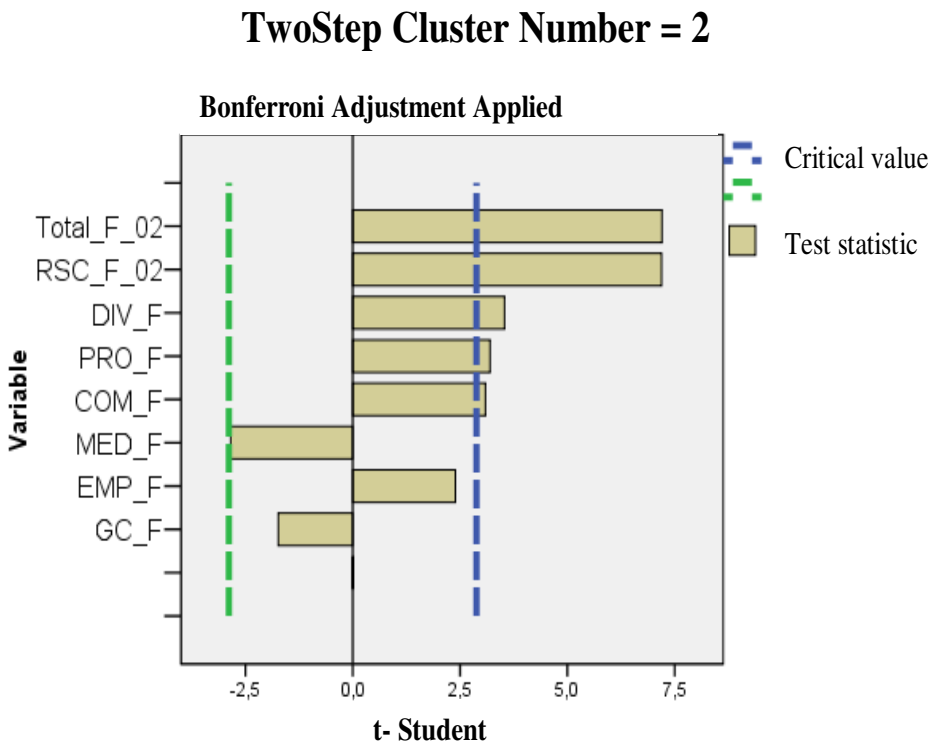


Figure 6.3. Significant variable forming Cluster 3

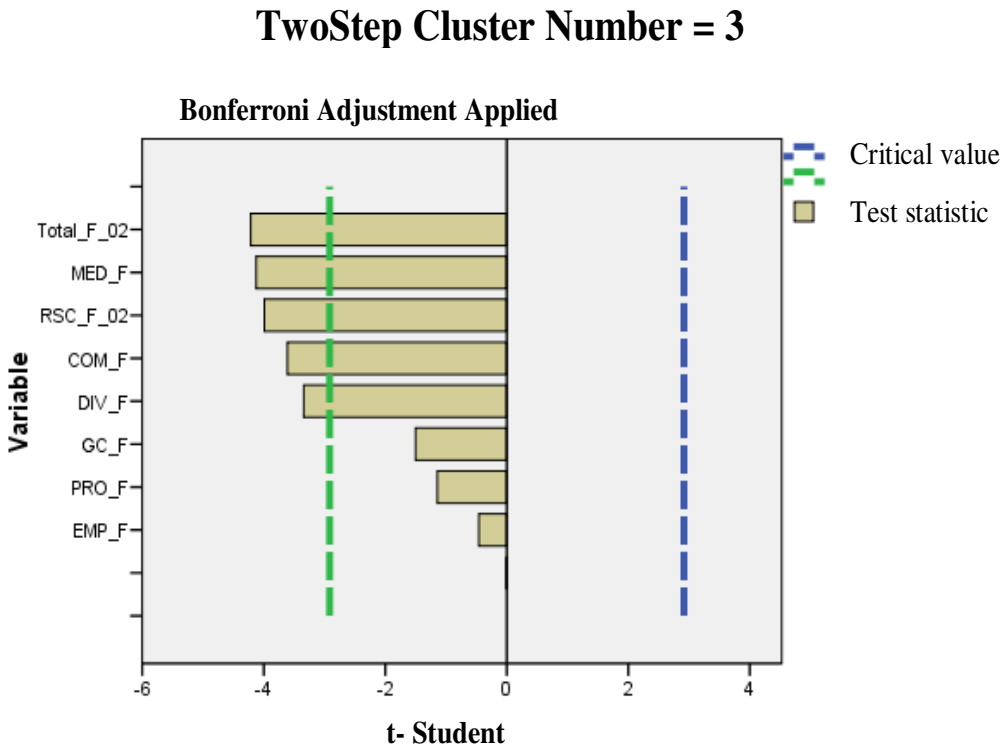


Figure 6.4. Significant variable forming Cluster 4

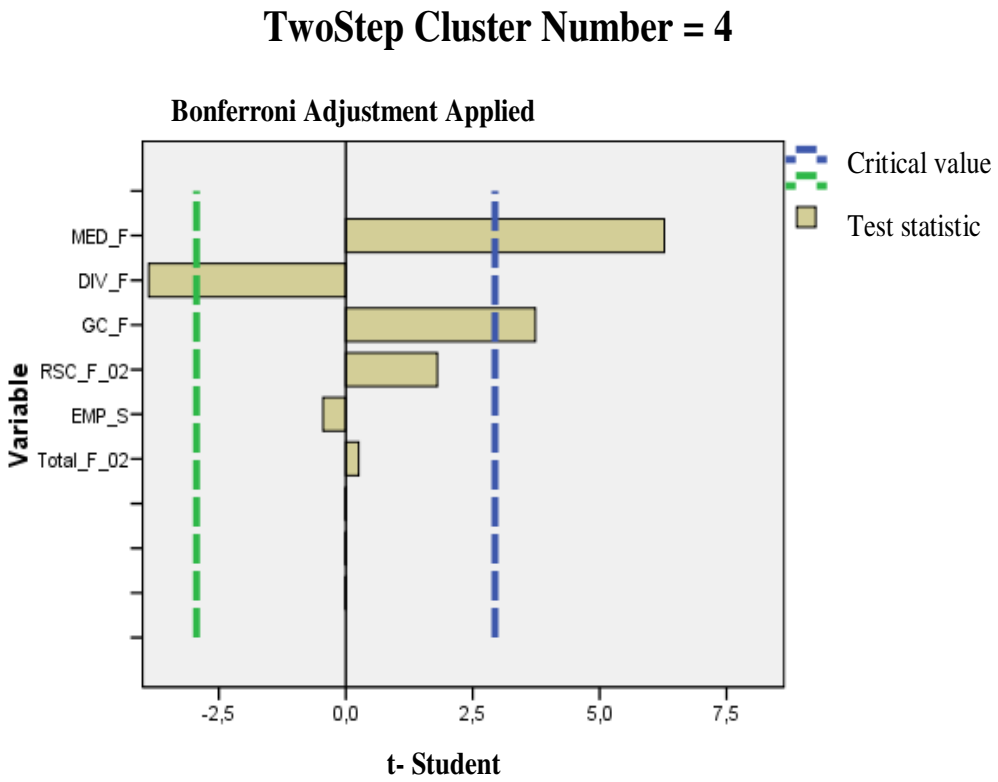
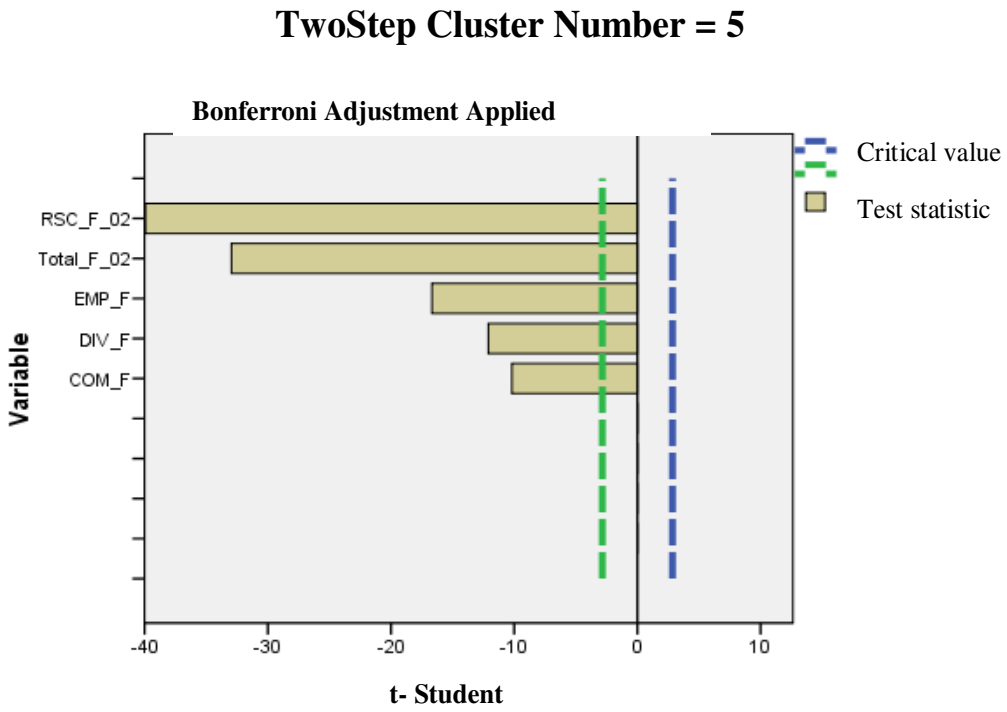


Figure 6.5. Significant variable forming Cluster 5



As it can be seen in Figure 6.1, firms facing distress in the year 2001 are firms not considered responsible in the year 2002. Moreover, it is their non-investment in actions related with environment, community and diversity that better contribute to the cluster formation of distressed firms. In the latter two dimensions, these firms share common behavior patterns with more than 50% of healthy firms. The difference between healthy and distressed firms resides in the environmental strategy, incorporated in the firms forming cluster 4. Moreover, they also differentiate in the general attitude towards responsible behaviors (with high overall scores) against firms that do not pay attention (Cluster 5). Table 6.7 gathers in a simplified manner, the characteristic patterns of each cluster.

In order to determine if there exist differences in firms' profiles with respect to the previous year, we follow the same procedure but considering strength valuations in the year in which distress symptoms were used to classify firms according to their economic-financial situation. The resulting two clusters do not allow differentiating between highly responsible firms and non-responsible firms (showing variable values very below the average). The latter ones formed the cluster where 69% of firms were healthy and 61 % were distressed.

Table 6.7. Cluster profile characteristics for the year 2002.

Cluster	Characteristics
1	Responsible firms that wager for actions on diversity, employee relations, community and environment.
2	Healthy, responsible firms but not caring about environment.
3	Distressed firms, not valued as responsible and do not outstand in actions regarding environment, community and diversity.
4	Firms strong in environment and corporate governance and not standing out in diversity.
5	Healthy, non-responsible firms not caring about employees, diversity and community.

In fact, variable *prob_01* was not significant for the formation of any cluster. This starting point and also the results discussed previously, allow asserting that firms facing distress, indeed, modify their proactive actions in social responsibility in the same direction. However, these actions are linked to certain dimensions and to specific aspects.

6.5.2. Clusters for the year 2002 – Concerns

In the case of concern representative variables, in the year 2002 we identify 4 clusters, according to the BIC criterion (Table 6.8). Distressed firms gather in a considerable amount (80%) in one cluster where there are no healthy companies (Table 6.9). These latter ones are considerably grouped in two clusters where neither is located any distressed firm. Considering the results exposed in Table 6.10 as well as the representation of significant variables in Figure 6.6, we can affirm that some of the groups are very specifically outlined. This fact occurs mainly in cluster 2, where healthy firms stand out in a positive way due to their low concern, placed below the average scores, and in a negative way in corporate governance. On the other hand, cluster 4, composed by distressed firms, mainly shares the care for human rights dimension.

Cluster 3 gathers healthy firms (12%) and distressed firms (19%) which are characterized by reactive conduct towards social responsible actions.

Table 6.8. Auto-clustering statistics

Number of clusters	Schwarz's Bayesian Criterion (BIC)	BIC Change	Ratio of BIC changes	Ratio of Distance Measures
1	1926,273			
2	1599,125	-327,148	1,000	1,867
3	1472,506	-126,619	,387	1,463
4	1419,100	-53,406	,163	1,602
5	1425,141	6,041	-,018	1,174

Table 6.9. Distribution of cases in clusters

Cluster	0 (healthy) %	1 (distressed) %
1	43,0%	,0%
2	45,2%	,0%
3	11,8%	19,4%
4	,0%	80,6%
Combined	100,0%	100,0%

Table 6.10. Centroids

		Cluster				
		1	2	3	4	Combined
TOT_C_02	Mean	,41	1,95	5,82	1,58	1,91
	Std. dev	,589	,890	2,634	1,180	2,107
CSR_C_02	Mean	,0802679	,5422902	1,3324230	,4218571	,4772945
	Std. dev	,11340782	,21486618	,60603031	,31545989	,49214654
COM_C	Mean	,01	,00	,68	,00	,10
	Std. dev	,112	,000	,589	,000	,322
CGOV_C	Mean	,00	,68	,79	,54	,45
	Std. dev	,000	,495	,592	,579	,545
DIV_C	Mean	,00	,31	,41	,24	,21
	Std. dev	,000	,465	,500	,431	,408
EMP_C	Mean	,16	,33	,82	,42	,36
	Std. dev	,371	,474	,869	,575	,574
ENV_C	Mean	,14	,11	1,71	,16	,35
	Std. dev	,413	,381	1,360	,510	,835
HUM_C	Mean	,00	,15	,29	,02	,10
	Std. dev	,000	,364	,524	,141	,310
PRO_C	Mean	,10	,37	1,12	,20	,35
	Std. dev	,302	,597	1,149	,452	,687

Figure 6.6. Significant variable forming Cluster 1

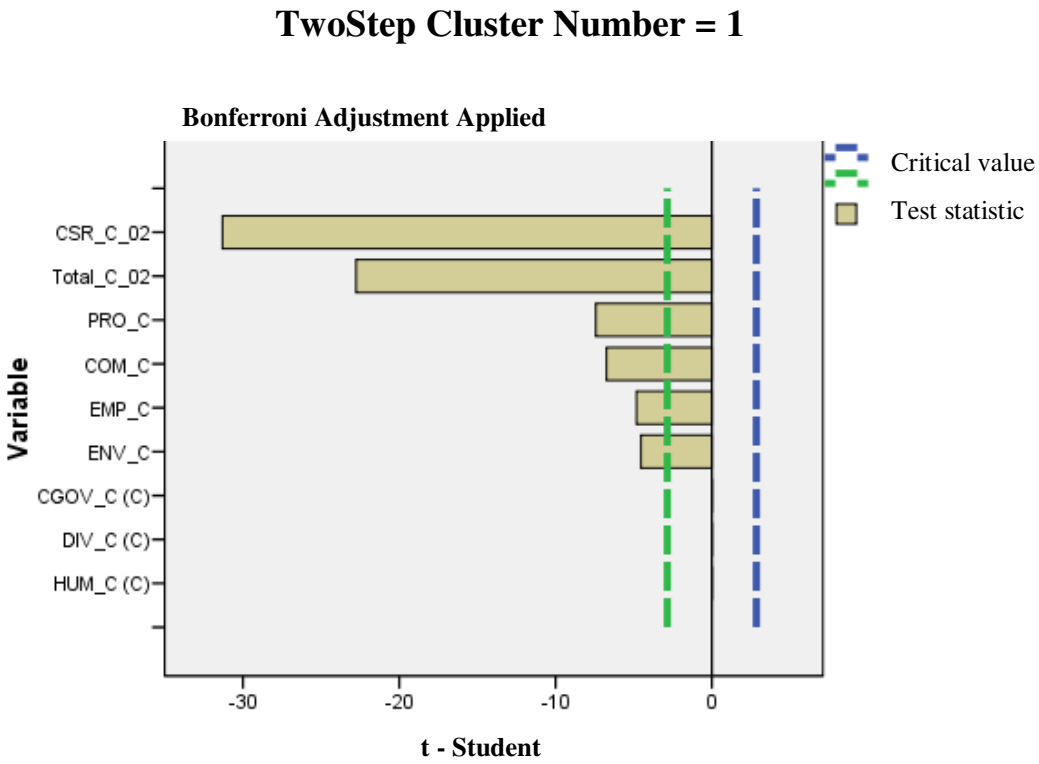


Figure 6.7. Significant variable forming Cluster 2

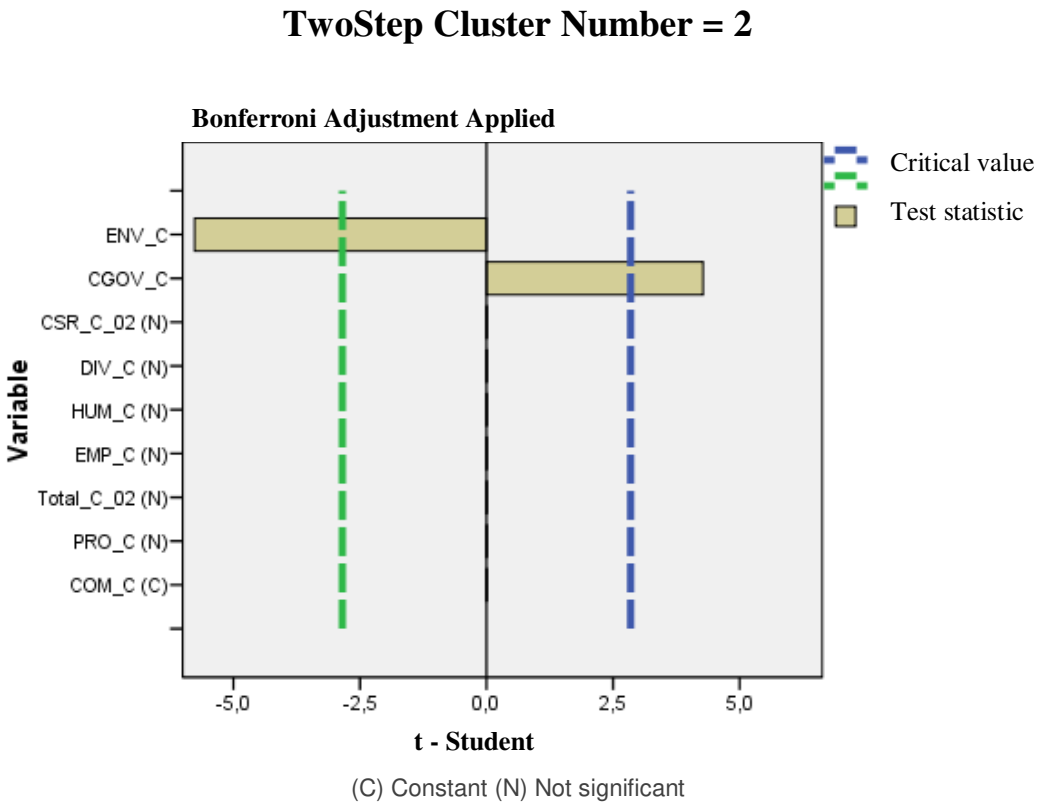
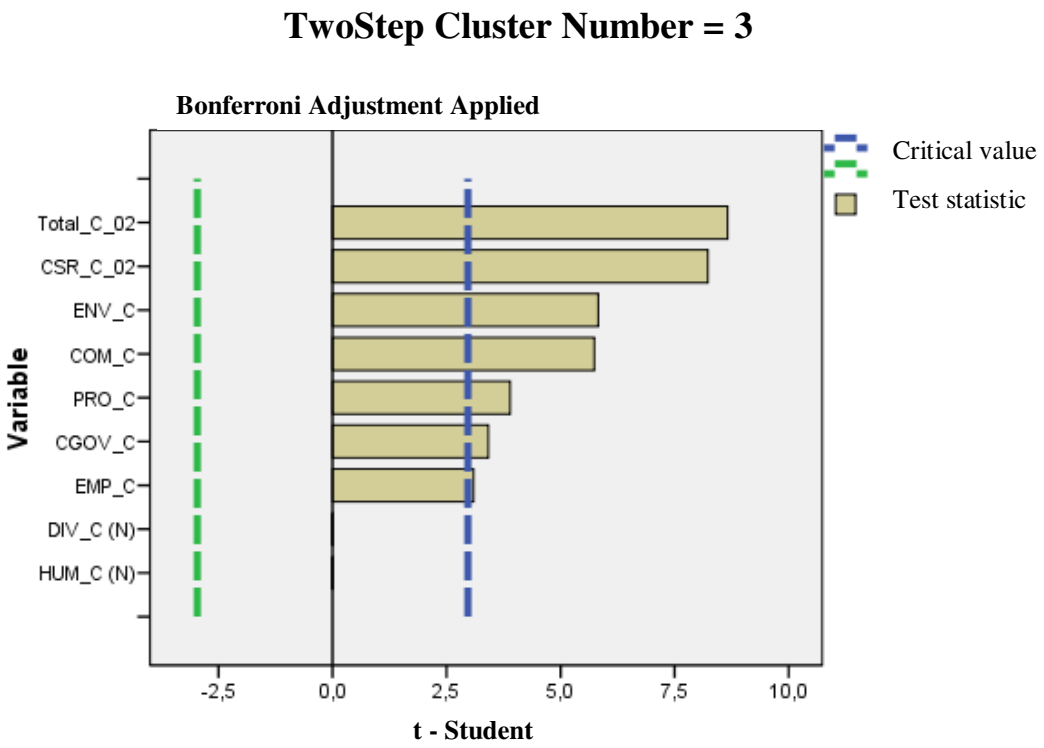
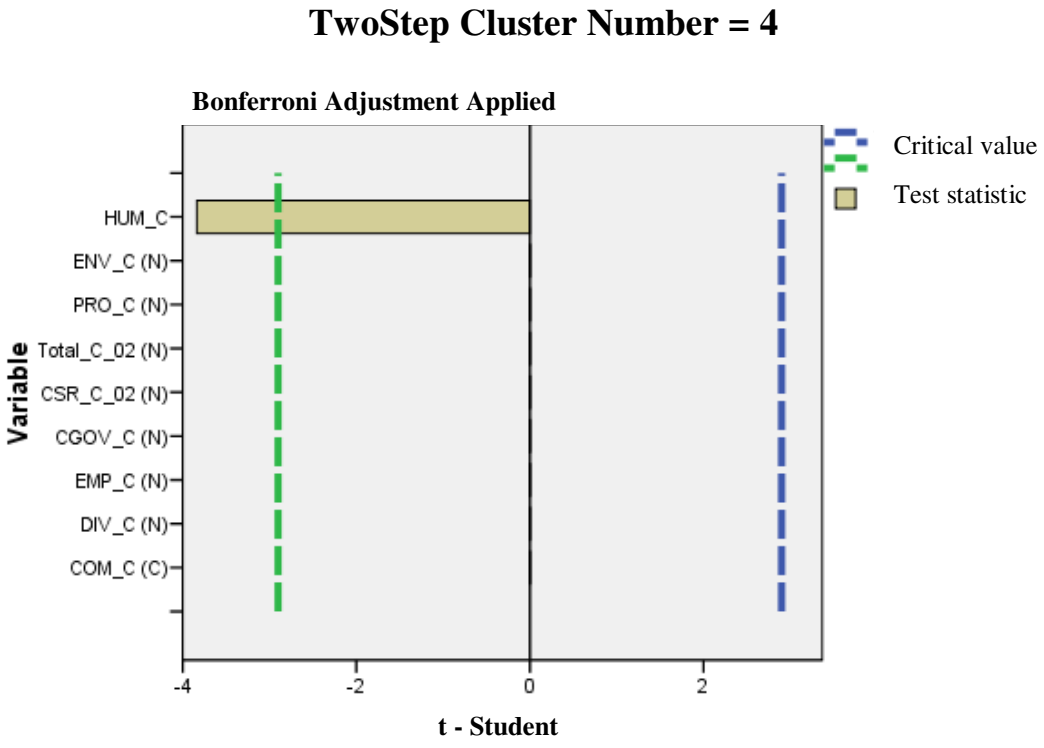


Figure 6.8. Significant variable forming Cluster 3



(N) Not significant

Figure 6.9. Significant variable forming Cluster 4



(C) Constant (N) Not significant

According to the results, the profiles of the companies, with regard to concerns, one year after the detection of the existence or not of distress, are gathered in Table 6.11.

Table 6.11. Cluster profiles according to distress situation, year 2002 (Concerns).

Cluster	Characteristics
1	Healthy firms not valued very negatively in terms of concerns, especially in product, community and with less intensity in environment and employees.
2	Healthy firms, weak in corporate governance and not valued very negatively in environment.
3	Extremely weak firms in general, and in particular in environment, community and product.
4	Distressed firms standing out for their low human rights score.

Surprisingly, in the year 2001, the agglomerations are similar (Table 6.12). In fact, only one cluster collects distressed firms and two clusters gather healthy firms, although the latter show an unequal participation in each of them. Cluster 4, gathering a total of 80% of distressed firms, is mainly characterized by the care in product and human rights, obtaining concern values way below the average scores. However, as stated previously, in the year 2002, they continue highlighted by low valuations in human rights. In this sense, it can be understood that distressed firms have stopped investing in actions that minimize their negative impact in product variable, as a measure to avoid associated costs that could influence their already deteriorated situation.

In order to determine if the variable "*situation_01*" is significant when generating natural clusters, we repeated the analysis using this categorical variable. The results regarding strength valuations are similar to the ones discussed previously, when distinguishing only between healthy and distressed firms (Table 6.9). However, it is to highlight that firms presenting economic weaknesses, as well as strongly distressed firms, are 80% grouped in one agglomeration (cluster 2).

Table 6.12. Cluster profiles according to distress situation, year 2001 (Concerns)

Cluster	0	1	Characteristics
1	5,37%	19,35%	Firms valued negatively in general and in particular in environment, community and product.
2	55,91%	0	Healthy firms valued very negatively in corporate governance
3	38,70%	0	Healthy firms not valued negatively in general terms and in particular in product and environment.
4	0	80,64%	Distressed firms not valued negatively in product and human rights.

Moreover, firms that show financial issues are distributed in half between this cluster and the one gathering healthy firms. Companies of cluster 2 cannot be marked as responsible as they basically fail in community and diversity. These results continue resembling the common profiles already observed for distressed and healthy firms, still it is to be noted the formation of cluster 3. This group is composed by firms in a critical situation in some cases and with a strong bet on social responsibility including dimensions such as environment. This fact may be influence by the sector where companies are developing their normal activity. Considering the results of the analysis, the profiles of each cluster are shown in Table 6.13.

Regarding concerns, in the year 2001 there are no agglomerations based on the crisis situation shown in that year, yet there are clusters one year after the issues of distress show up. Mostly, firms in distress with different type and degree of distress are gathered together and, in general, they obtain good valuations, overpassed by only 42, 5 % of healthy firms. Moreover, these firms tend to center their actions in minimizing negative impacts associated with community and human rights dimensions (see Table 6.14).

Table 6.13. Cluster profiles according to type and degree of distress, year 2002 (Strengths)

Cluster	1 (healthy) %	2 (economic distress) %	3 (financial distress) %	4 (strong distress) %	Characteristics
1	47,85	0,00	47,06	0,00	Healthy and financially weak firms generally valued as responsible.
2	0,00	80,00	47,06	80,00	Distressed firms, not responsible and weak in community and diversity.
3	6,45	20,00	5,88	20,00	Responsible firms that wager for diversity, employees, product, community and environment.
4	45,70	0,00	0,00	0,00	Healthy firms, not responsible and carefree about employees, diversity and community.

Table 6.14. Cluster profiles according to type and degree of distress, year 2002 (Concerns)

Cluster	1 (healthy) %	2 (economic distress) %	3 (financial distress) %	4 (strong distress) %	Characteristics
1	11,29	17,50	23,53	0,00	In general, weak firms especially in environment, community, product and corporate governance.
2	46,24	0,00	0,00	0,00	Healthy firms but weak in corporate governance that worry about minimizing environmental issues and community.
3	0,00	82,50	76,47	100,00	Distressed firms, worrying about minimizing their effects on community and human rights.
4	42,47	0,00	0,00	0,00	Healthy firms with low general weaknesses and worry about minimizing their impact on product, employees and environment.

Although the results show the existence of differentiated clusters, with specific action profiles one year after considering the situation of distress, we also analyze the significance of these agglomerations. For this purpose, we perform a Kruskal-Wallis test in order to determine to what extent the variable values are different in each cluster. The results show that for the 2002, in strength dimensions as well as in concerns, the groups present statistically and significant different values (p=0,000). Because of null values in the variable Human rights strengths, this variable was omitted from the analysis. These results confirm that the clusters obtained previously represent the existence of CSR behavioral patterns between the two groups of firms analyzed.

The analyzed results indicate that, indeed, there could have been a conduct change in firms, motivated by the appearance of negative situation indicators. The non-parametric Wilcoxon and Mann Whitney allows us determining to what extent these differences really exist between values obtained from one year to another and between healthy and distressed firms as well.

It can be observed that there are differences in the total sample between distinct variables, where a reduction in negative valuations dominates (weaknesses in responsibility), except for the environment dimension which seems to attract less attention from companies. These general sample results are in agreement with the case of healthy firms (in fact, community and diversity are significant at a 0, 10 level. Healthy firms have, in a certain manner, changed their social responsibility strategies, mainly by means of actions towards minimizing negative impacts in performance. It is relevant to state that, in distressed firms of the year 2001, the results only were significant for product variable, where increasing the actions in this dimension has brought a better score and valuation.

With regard to possible dissimilarities between healthy and distressed firms (Table 6.16), differences are mainly observed in weak responsible behaviors (concerns) and always in favor of healthy firms which obtain lower valuations (in all the cases, the rank sum was higher for distressed firms than healthy firms). These differences are maintained in both years for employee and environment variables. The existing differences in human dimension, for the year 2001, disappear one year after distress symptoms show up and, on the other side, in this year there are differences in

community variable. Table 6.15 collects the significant results for the differences in variable values between the year 2001 and 2002.

Table 6.15. Differences in variable values between the year 2001 and 2002

Total sample	Z	Sig. asintot. (bilateral)
COM_S_01 / COM_S_02	-2,324(*)	0,020
CGOV_S_01 / CGOV_S_02	-4,146(*)	0,000
CGOV_C_01 / CGOV_C_02	-2,668(*)	0,008
DIV_S_01 / DIV_S_02	-2,062(*)	0,039
DIV_C_01 / DIV_C_02	-2,183(*)	0,029
EMP_C_01 / EMP_C_02	-3,536(*)	0,000
ENV_C_01 / ENV_C_02	-2,268(**)	0,023
PRO_C_01 / PRO_C_02	-2,858(*)	0,004
Healthy firms		
COM_S_01 / COM_S_02	-1,667(*)	0.096
CGOV_S_01 / CGOV_S_02	-3,500(*)	0,000
CGOV_C_01 / CGOV_C_02	-2,496(*)	0,013
DIV_S_01 / DIV_S_02	-1,738(*)	0,082
DIV_C_01 / DIV_C_02	-2,138(*)	0,033
EMP_C_01 / EMP_C_02	-3,272(*)	0,001
ENV_C_01 / ENV_C_02	-1,964(**)	0,050
PRO_C_01 / PRO_C_02	-2,524(*)	0,012
Distressed firms		
PRO_C_01 / PRO_C_02	-1,732(*)	0,083

(*) based on negative ranks t+1< t

Table 6.16. Dissimilarities between healthy and distressed firms.

Dimension	U Mann-Whitney	W Wilcoxon	Z	Sig. asintot. (bilateral)
EMP_S_01	2205,500	19596,500	-2,507	0,012
ENV_C_01	2330,000	19721,000	-2,375	0,018
HUM_S_01	2790,000	20181,000	-2,449	0,014
COM_S_02	2320,500	19711,500	-2,365	0,018
COM_C_02	2615,500	20006,500	-1,729	0,084
EMP_S_02	2218,000	19609,000	-2,442	0,015
ENV_C_02	2246,000	19637,000	-2,913	0,004

6.6. Conclusions

The Two Step Cluster methodology allowed us exploring the possible existence of natural agglomeration of firms, based on their responsible behaviors, characterized by the presence or not of distress problems. The results show that the crisis variable, indeed, as well as the type and severity of the same, discriminates companies with similar proactive and/or reactive patterns. Moreover, these common patterns usually are more highlighted one year after the company has identified certain deteriorated economic and financial indicators.

Distressed firms obtain higher valuation in behaviors qualified as positive, but also in concern dimensions, than healthy firms. This increase in strength assessments follows the same pattern as the one observed for healthy companies, so that it cannot be derived that, in general, this wager on responsibility is a consequence of actions towards decline situation.

The behaviors of distressed companies only resulted statistically different, with respect to sane firms, in actions qualified in a negative sense. However, the fact that these differences occur in both years of the analysis does not allow affirming the existence of an association between crisis and responsible actions either.

One year after the crisis situation reveals, companies seem to have a common profile regarding social responsible behavior, which was not observed previously. Yet, the only characteristic that discriminates these companies from the general profile of healthy companies is their weak wager on actions that could strengthen their environmental position. This fact can be explained by the associated costs that these actions require and which may impact an already deteriorated economic position.

Distressed firms modify their responsible behavior in a way that is not reflected in a more positive general valuation. They act on certain specific actions. Regarding concerns, distressed firms do not have a differentiated specific profile, yet their situation has changed after the starting of the deficient state, as if they simply had decided to join the more common behaviors among companies to avoid being valued negatively.

Distinct profiles exist when we consider the type and origin of the crisis, mainly differentiating the existence of a deficit in the income statement. This agglomeration could be related to strategies implemented by the company for the recovery process.

It is to mention that the methodology used only contributes with exploratory results that allow opening lines towards hypotheses on possible causal relations that, should anyway consider the type of strategy implemented by companies in order to overcome the crisis situation, as well as the sector where they develop their activity, given the fact that it could exist higher sensibility on certain social responsible dimensions.

References

Mooi, E. and Sarstedt, M. (2011), "A concise guide to market research: the process, data, and methods using IBM SPSS statistics", Berlin, Springer 2011.

Schwarz, G. (1978), "Estimating the dimension of a model", *Annals of Statistics*, 6, pp. 461-464.

CHAPTER VII. DO FIRMS CHANGE THEIR CSR BEHAVIOR WHEN SIGNALS OF FINANCIAL DISTRESS ARE IDENTIFIED?

Chapter VII. Do firms change their CSR behavior when signals of financial distress are identified?

7.1. Introduction

The previous chapters evidenced certain changes in the attitude of firms facing a financial distress situation, justified by the existence of incentive for managers to mitigate the weak image given by firm's income statements. In some of the cases, the analyses were only exploratory, such as Multidimensional Scaling, and did not start off a causal relationship between variables. However, the results obtained are a relevant basis for subsequently proposing these relationships. On the other hand, the analysis was performed during a specific year range, being the first years of the 2000 decade, in coincidence with the increase in the number of firms constituting KLD database. This increase in the number of companies makes us think that in the years coming afterwards, firms would care more about their CSR valuation in the database. In this way, investment in responsible actions could be considered as a mechanism to "adjust" their responsible image towards society.

In this chapter we extend the analyzed period from 2000 to 2007, which allows identifying to what extent the evidence obtained for a specific period could occur in a continuous period of time. In this way, we maintain the basic question: Can responsible behavior act as a mitigation factor of the firms' ongoing concern when certain financial distress situation takes place?

7.2. The hypotheses

Under the *diminishing the perceived risk approach*, if investors are cautious in the presence of the financial risk of a firm, the mitigating factors of an a priori unattractiveness for the investors are determined by the possible effects that a CSR investment could have on firm's performance (Orlitzky *et al*., 2003). We could expect that managers of financially distressed firms could be incentivized to perform greater efforts in CSR behaviors in order to mitigate the bad financial results, securing the trust

and support of stakeholder when the survival of the firm could be compromised. Based on the above approach, we propose the following general hypothesis:

H1: Despite of the associated costs, distressed companies tend to invert, or maintain their investment in CSR actions in order to compensate their weak financial image.

In particular, deriving from this first hypothesis, we will also test:

H1.1: Despite of the associated costs, distressed companies tend to invert, or maintain their investment in those CSR actions that have a direct repercussion on profit generation, so that they can restore their delicate economic situation.

Under the c*ost-reduction approach,* investment in responsible actions could be also interpreted as a cost affecting the future profit of a company. In the short run, responsible behavior increase the costs, influencing in a direct way the financial results (Belu, 2009). Moreover, they could imply a redirection of resources necessary for other relevant areas of the company which could impact the firm's viability (Hillman and Keim, 2001). However, the cost of being responsible affects in a different way in each dimension of social responsible behavior, making it difficult to estimate the possible cost impact of the responsible actions. This is the case of environmental or product actions that imply, in most of the cases, a relevant investment associated to R&D. The selection of the investment in responsible behavior strategy will be determined based on its cost/benefit.

In front of the cost ranges associated to different alternatives, we propose that:

H2: Companies presenting symptoms of financial distress will redirect their CSR performance, mitigating in those lines that imply a further deterioration of their statements, and investing in non-costly actions that permit maintaining stakeholders' support.

On the other hand, considering the results obtained in previous chapter, we have found that, among other issues:

- In some cases there were no changes in the conduct of firms towards social responsibility between the year catalogued as being in distress and the year afterwards. This fact indicates that, in some occasions, companies had already started a behavior change in the year they expected the financial indicators to be weak. This affirmation makes sense if we bear in mind that firms know in advance how their activity results are going. In this sense, when expecting that negative indicator will present a weak image to shareholders and other stakeholders, companies try to mitigate this image by means of adequate valuations in responsible actions.

- Certain differences depending on the type of distress, associated to economic or financial issues, were detected. This fact may exert an influence on the type of responsible actions where the company invests. Firms with weakened profit balance will try to disinvest in costly actions and invest in those dimensions that could promote incomes. On the other hand, financially distressed firms tend to invest in responsible actions with impact on reputation and image in order to minimize the estimated risk of present and/or future investors.

- Finally, the sector where companies normally operate may also condition the maintenance of certain responsible behaviors, despite of the derived associated costs and their repercussion on the financial situation. It is the case of actions regarding environmental issues, which can be essential for the "reputational" survival in certain sectors compromised with environment, or in sectors depending on the product innovation and customers' needs satisfaction.

Considering these arguments, we propose the following hypotheses:

H3. CSR behavior of the year when symptoms of distress are identified has a positive influence on the CSR conduct one year after.

H4. Companies presenting symptoms of financial distress will redirect their CSR behavior depending on the economic or financial weaknesses that define their distress.

H5. The sector where companies operate influences the reaction on responsible behavior, once a distress situation has been detected.

7.3. The sample

We used a sample of US firms derived from Compustat database matched with Kinder, Lyndenberg and Domini's database (KLD), gathering both economic-financial and CSR information. The analysis was made during the period 2001-2007, building 5 block scenarios, each of them comprising a three year window, allowing comparing if an attitudinal change occurs in different scenarios. Firms operating in the financial services, for the particularity of their activity, were eliminated from the sample. Companies that did not present complete nor had consistent information were also discharged. Firms were classified as being in distress or healthy, in a certain year *t*, using the same symptom indicators exposed in previous chapters. Furthermore, to assure that the distress is not a situation coming from previous years, we selected firms that in *t-1* were all in a healthy position. So, for instance all the 3-year blocks are composed by all healthy firms in (t-1) and healthy or distressed firms in the year (t). The data of the year *t+1* allows us investigating the CSR actions and reactions of the firms, once they are aware of their decline. The Table 7.1 shows the distribution of the sample across the analyzed period.

Table 7.1. Firm distribution by financial position/year

Years	Distress	Healthy	Total	Distress %	Healthy %
2001-2003	44	136	180	24,44%	75,56%
2002-2004	25	174	199	12,56%	87,44%
2003-2005	40	530	570	7,02%	92,98%
2004-2006	77	593	670	11,49%	88,51%
2005-2007	77	612	689	11,18%	88,82%

7.4. The variables

The variables used are grouped based on the information they provide, as well as in the analysis where they will be applied.

- *Distress variables*: they are used for the classification of companies as being healthy or in distress. In particular, these variables are: Negative Net Income, Negative Operating Income, Negative Retained Earnings, Negative Working Capital, Negative Cash Flow, Negative Operating Cash Flow and Negative Shareholder's Equity (the same classification variables followed in previous chapters).

- *CSR variables*: they are obtained by the firms' valuation in the seven KLD dimensions. These dimensions are: Community (COM), Corporate Governance (CGOV), Diversity (DIV), Employee Relations (EMP), Environment (ENV), Human Rights (HUM) and Product (PRO). In each of these dimensions we compute the overall valuation obtained by the companies in strengths and concerns, respectively. In this way, we can check if the incentives are produced towards proactive actions (strengths), that is, an improvement in responsible behavior, or reactive (concerns), which imply a decrease in non-responsible conducts.

- DIM_str/DIM_con: these variables refer to the sum of strengths/concerns in each dimension of KLD database for the year t and t+1 where t stands for the year when symptoms of distress appear and t+1 the year afterwards.

- CSR_S/CSR_C: these variables indicate the weighted sum of each strengths/concerns dimension, taking into account the items forming each dimension.

- TOT_S/TOT_C: they are the mere sum of the score obtained by companies in each strength/concern dimension, as they appear in the KLD database.

- *Economic and financial variables*: To measure the economic performance of the companies we use the Return on Assets (ROA) indicator while for measuring the firm's market liquidity and capacity to meet creditors demands we use the Current Ratio. These variables are used as proxy of economic or financial weaknesses, respectively.

The final variables (Table 7.2) are gathered according to their usage in the analysis, which is described below.

Table 7.2.Variables used in the analysis

Category	Variables		Description
Distress symptoms	Net Income (NI) Operating Income (OPI) Working Capital (WC) Equity Shareholders (ES) Retained Earnings (RE) Cash Flow (CF) Operating Activities Cash Flow (OACF)		These variables are used to classify a firm as distressed/ healthy. They should be interpreted with a negative sign.
CSR dimensions	*Strengths*	*Concerns*	The dimensions of CSR are used to plot the evolution of both groups of firms. These variables are also used in the testing of our hypotheses.
	COM-str*	COM-con**	
	CGOV-str	CGOV-con	
	DIV-str	DIV-con	
	EMP-str	EMP-con	
	ENV-str	ENV-con	
	HUM-str	HUM-con	
	PRO-str	PRO-con	
	CSR_S	CSR_C	
Regression Variables	ROA = Operating Income/Total assets		Measures the economic performance of firms
	CACL = Current Assets/Current Liabilities		Measures the ability to meet creditors demands
	Size= ln(Total Assets)		Measures the size of the company
	FINDISS = dummy variable		Indicates the situation of a firm: value 0 for healthy firms and value 1 for distress

*str refers to each CSR dimension strength of KLD database
**con refers to each CSR dimension concern exposed in table 2

7.5. The methodology

In order to complement the results reached in previous chapters, the first part of the analysis deals with the evolution of behavior by means of Multidimensional Scaling in five 3-year blocks, maintaining the same approach. The results will permit observing to what extent the conduct changes can be extended to all the period analyzed or if there exist other external variables that may have an influence on the behavior of firms in certain years.

The second part of the analysis pretends to determine the variables of influence in responsible behaviors, by proposing and testing the following regressions for each sector of activity of our sample:

$$[1] \quad CSR\_S_{t+1} = \beta_0 + \beta_1 * CSR\_S_t + \beta_2 * CSR\_S_{t-1} + \beta_3 ROA_t + \beta_4 * CACL_t + \beta_5 * Size_t + \beta_6 * DFINDISS_t + \varepsilon_t$$

$$[2] \quad CSR\_C_{t+1} = \beta_0 + \beta_1 * CSR\_C_t + \beta_2 * CSR\_C_{t-1} + \beta_3 ROA_t + \beta_4 * CACL_t + \beta_5 * Size_t + \beta_6 * DFINDISS_t + \varepsilon_t$$

Equation [1] and [2] refer to CSR strengths and CSR concerns, respectively. Size is a control variables calculated by taking the natural logarithm of Total Assets of firms in the year t, and the variable DFINDISS is the dummy variable for FINDISS, taking value 0 if the firm is in a steady situation (healthy) and 1 otherwise.

In the same way, we will test the regressions for each dimension of KLD database, as in previous chapters we have noticed that the differences between healthy and distressed companies were also shown when considering the dimensions separately.

$$[3] \quad DIM\_S_{t+1} = \beta_0 + \beta_1 * DIM\_S_t + \beta_2 * DIM\_S_{t-1} + \beta_3 ROA_t + \beta_4 * CACL_t + \beta_5 * Size_t + \beta_6 * DFINDISS_t + \varepsilon_t$$

$$[4] \quad DIM\_C_{t+1} = \beta_0 + \beta_1 * DIM\_C_t + \beta_2 * DIM\_C_{t-1} + \beta_3 ROA_t + \beta_4 * CACL_t + \beta_5 * Size_t + \beta_6 * DFINDISS_t + \varepsilon_t$$

The sample firms and the sectors where they develop their normal activity are gathered in Table 7.3.

Table 7.3. Sample firm distribution by sector category

Sector category	Description*	Number of companies	%
1	Basic Materials	111	4,92%
2	Communications	77	3,42%
3	Consumer, Cyclical	471	20,90%
4	Consumer, Non-cyclical	494	21,92%
5	Energy	110	4,88%
6	Industrial	578	25,64%
7	Technology	342	15,17%
8	Utilities	71	3,15%
	Total	**2254**	**100,00%**

* a full definition and characteristics of each sector is offered in Appendix III.

7.6. Empirical results and discussion

7.6.1. Evolution of behavior

After performing the MDS we obtained that a 4-dimensional map would be accurate to project the individuals of our sample. The goodness of fit of our model was 2.2%, which is an excellent level (Kruskal, 1964).

The graph with dimension_1 and dimension_2, which better displays the evolution of the CSR behavior of the two groups of firms forming our sample (distressed firms and healthy firms) during the years 2001-2007, will be exposed (Figure 7.1). By means of the Co-Plot methodology we projected the original variables together with the individual points in the same dimensional space running the fourteen linear regressions (7 for each strength dimension and 7 for each concern dimension) for

each block. It is to be noted that the goodness of fit, R square, of the regressions for the 5 year blocks of our study are all powerful enough to interpret the map. Table 7.4 and Table 7.5 show the R-square value for the CSR strength variables and CSR concern variables, respectively.

Table 7.4. Goodness of fit for the Strength dimensions model

	Strength Dimensions (Model R2)						
Time period	Com	Cgov	Div	Emp	Env	Hum	Pro
2001-2003	77,00%	14,10%	99,60%	98,80%	16,50%	n/a*	91,50%
2002-2004	90,20%	5,90%	99,50%	98,60%	13,00%	n/a	88,80%
2003-2005	55,00%	80,90%	98,80%	98,00%	75,60%	9,40%	74,90%
2004-2006	61,00%	78,80%	98,50%	88,40%	65,50%	5,60%	78,00%
2005-2007	44,80%	88,00%	97,00%	96,30%	49,70%	3,80%	84,90%

*n/a. Not enough information to run the model.

Table 7.5. Goodness of fit for the Concern dimensions model

	Concern Dimensions (Model R2)						
Time period	Com	Cgov	Div	Emp	Env	Hum	Pro
2001-2003	36,70%	95,40%	97,90%	99,00%	93,90%	4,70%	99,80%
2002-2004	65,20%	79,50%	59,70%	69,50%	67,50%	78,40%	54,10%
2003-2005	37,40%	95,80%	99,70%	98,70%	90,10%	9,10%	98,90%
2004-2006	38,20%	95,80%	99,80%	99,10%	89,80%	85,00%	99,10%
2005-2007	37,50%	93,80%	99,70%	99,00%	95,30%	18,80%	98,90%

Figure 7.1 represents the map in dimension 1 and dimension 2 of the coefficients obtained for the firms as well as for the variables. The points represent the mean value of the two groups of firms in each year-window. In this way, EHT_1 indicates the

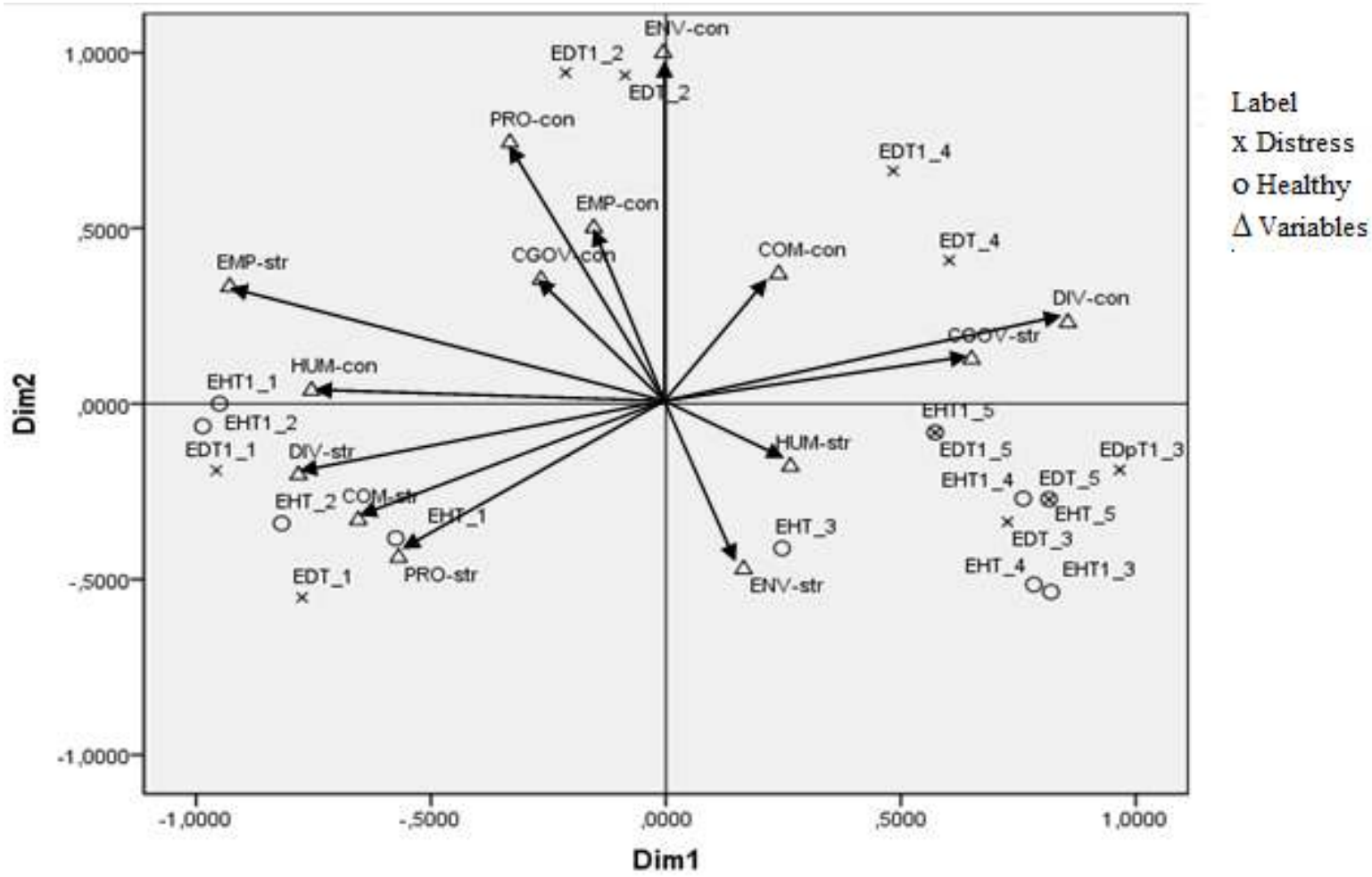
average value of a certain variable of an Enterprise, Healthy and in time T of the 1st block. Similarly, EDT1_1 shows the mean value of a variable of an Enterprise, Distressed and in time t+1 (T1) of the 1st block. The same interpretation is used in the remaining four blocks.

It can be observed that dimension_1 is related to the time period, gathering on the left part the first years of the analysis and on the right part the last years. On the other hand, dimension_2 reasonably discriminates CSR profiles, placing strengths in the lower part and concerns in the upper part. According to this map representation, we could follow the movement of firms' position in all years observing a cyclical path starting from the left part, being the first years of the study, towards the right part of the chart.

In general, in the first years of the analysis, the firms were positively valued with respect to their responsible behaviors. These evaluations detect profiles strong in Product, Community, Diversity and Employees. Healthy firms maintain this performance in the second year-window; nevertheless distressed firms find themselves shifted towards the *concerns area*, highlighting negative profiles in Product and Environment Dimensions. In the last years of the analyzed period, firms are more characterized by a strong profile in Corporate Governance and they are also situated in the responsible environmental behavior zone in the consensus map. When considering the negative assessments, firms are penalized in aspects related to Diversity. As it occurred on the left side of the map, healthy firms preserve the same performance and distressed firms are, again, considering the 4th year-window, located in the area characterized by firms that do not invest on CSR actions and are not responsible when considering Environment or Community issues.

In overall, except for the second and fourth block, the placement of the firms presenting financial distress does not appear to be different from the globalized behavior of the rest of the sample. This is why we can consider that their investment on CSR actions is a consequence of the trend marked by the attitude and demand of the stakeholders. However, we can observe differences in certain placements as well as displacements of each group one year after the financial distressed is detected.

Figure 7.1. Evolution of CSR dimensions for healthy and distressed firms during the year-blocks analyzed.



Throughout all five 3-year windows analyzed, except for the fifth, distressed firms are situated separately from the healthy firms and this occurs already during the year their financial statements present a poor performance. This fact allows considering that CSR actions are performed in advance, when the firm predicts that its financial situation will be delicate. In this way the firm gets ahead of the alarm signal that its financial statements will emit to the market.

In order to analyze if the existence of differences in the placements of the firms is not due to randomness, we run the Wilcoxon non-parametric test for healthy and distressed firms and the Mann-Whitney test for independent samples in the year t and t+1. The results of these tests are shown in Table 7.6 and Table 7.7 respectively (only the p-value of significant results is showed). The tests were performed on each dimension related to CSR and on strengths and concerns of each dimension separately. We also included the global CSR strength (CSR_S) and concern (CSR_C) valuations which gather the weighted sum of the valuations obtained in the strength and concern dimensions, respectively. The weighted valuation was performed, to avoid that valuations obtained in dimensions formed by more items could affect the overall assessment.

Considering the global CSR assessments, firms classified as healthy present positive changes in all the year windows analyzed while distressed firms tend to increase their concern valuation or reduce their strength valuation one year after identifying the symptoms of economic and financial weaknesses.

Regarding the specific dimensions, in the cases where the Wilcoxon test results are statistically significant for the healthy firms as well as for the distressed firms, we can affirm that there exist changes in responsible behaviors for both groups between t and t+1. These changes occur in the same line for the two groups of firms so that it can be understood that they are the consequence of the satisfaction of the stakeholders' demand on certain dimensions of CSR.

The results show that firms modify their behavior one year after some kind of distress has been identified. But this attitude change does not always happen in the same direction and occurs only for the samples analyzed in the windows 2001-2003 and

2002-2004. For this two periods, the changes affect positively the investment on Community or Employee relations which permit improving the company image and giving certain warranty for future.

In the same line, we observe that in all the year windows analyzed there exists a trend for the healthy firms to increase their concerns in Corporate Governance and Human rights. This trend line does not occur for the firms in distress so that they confirm their worry about offering a trusted image to the community, in general, and to investors in particular. Thus, the fact that they continue keeping certain CSR investment level and that, in some dimensions, they worry about improving their image towards society, allow us confirming our first hypothesis (H1).

No positive changes in dimensions as product and employee relations indicate that distressed firms do not wager directly on actions that have a direct repercussion on generation of profit. As a consequence we cannot confirm the hypothesis H1.1

On the other side, there exists also an increase in the negative valuation regarding environmental issues. This fact is better observed in the results showing that healthy firms reduce concerns in Environment issues and that this trend does not occur for the distressed firms in the same time window. Thus, we can support our H2 hypothesis.

Mann-Whitney test was performed to test the similarity between the responsible behavior of the healthy firms and distressed firms. The results show that Community concerns and Employee Relations strengths are statistically and significantly different in year t and t+1 in the 2001-2003 and 2004-2006 year windows. The results also evidence a reduction in the average valuation in concerns for distressed firms in t+1 (hence, supporting H1). Moreover, the 2004-2006 year window is the period when most differences exist between the two groups of firms concerning Community, Employees and Product (see Table 7.7). In this case, average assessments obtained for distressed firms decrease in all dimensions, except for Employee concerns where a considerable increase is observed, one year after the symptoms of financial distress were recognized. Additionally, in Employee concerns and Human rights concerns in 2003-2005 and Diversity concerns in 2004-2006, the differences between both groups disappear one

Table 7.6. Wilcoxon test results for which the hypothesis that each variable has the same distribution in t and t+1 is rejected.

	01-03 window		02-04 window		03-05 window		04-06 window		05-07 window	
	Healthy	Distressed	Healthy	Distressed	Healthy	Distressed	Healthy	Distressed	Healthy	Distressed
COM str		0,059*					0,039**			
COM con			0,035**		0,000**					
CGOV str				0,083*			0,079*			
CGOV con	0,004**		0,000**				0,000**	0,012**	0,012**	
DIV str	0,002**	0,002**	0,001**		0,000**	0,059*			0,002**	
DIV con					0,001**		0,070*			
EMP str			0,016**				0,006**		0,000**	0,013**
EMP con	0,000**	0,052*		0,083*	0,000**	0,000**	0,004**	0,005**	0,000**	
ENV str					0,000**	0,059*	0,000**		0,003**	
ENV con		0,083*	0,002**		0,023**	0,046**	0,001**			
HUM str										
HUM con	0,002**		0,008**		0,000**		0,083*			
PRO str							0,035**			
PRO con					0,016**		0,086*			
CSR_S	0,096*	0,004**	0,046**		0,005**		0,000**	0,072*	0,000**	0,000**
CSR_C	0,000**	0,063*	0,002**		0,000**	0,001**	0,000**	0,006**	0,000**	0,000**

**Significant at the 0.05 level
* Significant at the 0.10 level

year after the problems of a financial distress have shown up. These are the only three cases where clear differences in behavior between the two groups of the analysis occur. These three dimensions assess deficient behavior in CSR actions, yet a reduction in valuation occurs only in Diversity dimension, which involves actions that do not imply a relevant cost affecting firm's performance, confirming again the H2 hypothesis.

Table 7.7. Mann-Whitney test results for which values of the variables of interest differ across groups.

01-03	02-04	03-05	04-06	05-07
Com_con,*t*,t+1*	Emp_con,*t,t+1*	Emp_con,*t*	Com_str,*t,t+1*	None
Emp_str,*t,t+1*		Hum_con,*t*	Com_con,*t,t+1*	
Hum_con,*t,t+1*			Div_con,*t*	
			Emp_str,*t,t+1*	
			Emp_con,*t,t+1*	
			Prod_con,*t,t+1*	

*In each 3 year window, *t* corresponds to the middle year, when distress symptoms are identified, and *t+1* correspond to the last year of the year window, which is the year after the symptoms were recognized.

7.6.2. Determinant factors on CSR behavior

Testing the models proposed to explain the responsible behavior, Table 7.8 and 7.9 show the most relevant results with respect to overall behavior assessments: strengths and concerns. The results show a model with a proper goodness of fit in all the sectors analyzed, although the results for each explicative variable are different.

When considering the general valuations, we obtain that the CSR strength assessment one year after the symptoms of distress appear, as expected, is strongly dependent of the CSR strategy followed the year before and it happens for all sectors. All firms increase their CSR valuation in terms of strengths. The same effect is noticed for all sectors, except for Communication, Consumer non-cyclical and Energy sectors, in the CSR strategy in the beginning year of the analysis, when all firms do not show

Table 7.8. Regression coefficient for each sector in the overall CSR assessment - STRENGHTS

Strengths	Basic Mat.		Communic.		Cons. Cyclic		Con. Non-Cyc		Energy		Industrials		Technology		Utilities	
	Beta	Sig.	Beta	Sig.	Beta	Sig.	Beta	Sig.	Beta	Sig.	Beta	Sig.	Beta	Sig.	Beta	Sig.
CSR_S1	,292	*,005*	,005	,962	,138	*,004*	,013	,775	,130	,204	,246	**,000**	,117	*,057*	,229	*,049*
CSR_S2	,563	**,000**	,934	**,000**	,873	**,000**	1,021	**,000**	,665	**,000**	,710	**,000**	,909	**,000**	,598	**,000**
ROAt	,256	,134	,213	*,093*	,020	,641	,034	,525	,121	,340	,075	,276	,001	,992	-,255	,761
CACLt	-,011	,584	,000	,967	,000	,919	,004	,224	,000	,999	,001	,638	,003	,170	-,025	,393
LnTA	,045	*,020*	,032	*,003*	,013	*,015*	,015	**,000**	,034	**,001**	,029	**,000**	,025	**,000**	,027	*,069*
FinDiss	,009	,862	,028	,497	,023	,258	-,011	,535	-,026	,368	,050	*,013*	-,004	,853	-,105	*,010*
R square	85,70%		89,00%		83,20%		91,10%		83,70%		82,90%		94,60%		75,80%	

Table 7.9. Regression coefficient for each sector in the overall CSR assessment - CONCERNS

Concerns	Basic Mat.		Communic.		Cons. Cyclic		Con. Non-Cyc		Energy		Industrials		Technology		Utilities	
	Beta	Sig.	Beta	Sig.	Beta	Sig.	Beta	Sig.	Beta	Sig.	Beta	Sig.	Beta	Sig.	Beta	Sig.
CSR_S1	,004	,969	-,159	,127	,096	*,020*	,113	*,016*	,145	*,091*	,081	*,044*	,120	*,014*	-,090	,406
CSR_S2	,738	**,000**	,916	**,000**	,782	**,000**	,826	**,000**	,637	**,000**	,680	**,000**	,764	**,000**	,921	**,000**
ROAt	-,022	,927	-,124	,496	-,024	,706	,026	,763	,284	,213	-,013	,897	,079	,287	-,017	,986
CACLt	,020	,508	,002	,753	-,001	,854	-,005	,334	,013	,451	-,003	,541	,000	,962	-,014	,658
LnTA	,072	*,005*	,023	*,081*	,033	**,000**	,024	**,001**	,076	**,001**	,045	**,000**	,010	*,087*	,054	*,021*
FinDiss	-,008	,912	,028	,630	,026	,374	,010	,730	-,009	,864	-,008	,790	,014	,576	-,031	,470
R square	76,60%		71,00%		74,10%		83,30%		89,80%		72,40%		74,90%		89,70%	

Note: In *italic*, significant at 90% level of confidence.
In **bold**, significant at 99% level of confidence.

any symptoms of distress. These results allow confirming our H3 hypothesis, although somehow with care for the significance of CSR in t-1 in some of the analyzed sectors.

The size of the companies has a positive effect on the CSR conduct, in every sector, which means that bigger firms try to fulfill the requirements towards the society and maintain their reputation and image. While the capacity of firms to satisfy creditors' demands, measured by the Current ratio, does not influence the decision made on CSR, the economic performance (ROA) of the companies operating in the Communication sector seems to have a positive relationship with the same.

Regarding the influence of a financial distress on CSR strategies, we find that distressed firms in Industrials sector increase their CSR strength valuation, once the symptoms have been identified while the opposite effect occurs in distressed firms operating in Utilities sector.

On the other side, with regard to CSR concerns overall assessment, surprisingly, the economic performance, the current ratio and financial distress do not have any significant influence on the CSR concerns strategies in none of the sectors analyzed. In this sense, the so called reactive behaviors appear to depend more on other issues such as the attitude of the company towards CSR.

Tables 7.10 to 7.16 gather the CSR strength valuation of each sector, considering the seven individual dimensions of the KLD database. In all the dimensions, the valuation of the previous year has a positive and significant effect on the assessment of CSR in the year after symptoms of distress could show up and this effect is independent from the sector of operation. The economic performance of firms is relevant for sectors such as Basic Materials, Communications and Industrials. It has a positive influence on CSR value of Community, Corporate Governance, Environment and Product dimensions. As it can be seen, the dimensions which require more investment such as Environment or Product need an economic performance that only sectors with strong effects on both dimensions can provide. On the other side, firm's ability to satisfy creditors demand is positively related to CSR performance for sectors such as Communications, Consumer cyclical and Non-cyclical. For these sectors, the current ratio affects the Corporate Governance dimension. For the Energy sector, the positive

effect is observed only for Diversity while for Technology sector, it is observed in both Corporate Governance and Environment. Surprisingly, Industrials sector showed a negative relationship between Current Ratio and Product dimension. This effect could imply that the higher their ability to pay debts the lower they need to invest in new products to gain customers trust. These firms could redirect their CSR actions on dimensions such as Community or Corporate Governance to continue and maintain customers and society trust. Regarding distressed firms, they show a positive effect on CSR for Communication sector in Corporate Governance dimension, for Industrials sector in Community and Corporate Governance while for Consumer cyclical this effect is observed in Environment dimension. These firms show a higher CSR strength dimension value when compared to healthy firms as they make a greater effort in maintaining their favorable valuations even if that means increasing non costly dimension scores such as Community or Corporate Governance. The opposite effect is observed for sectors Technology in Environment dimension and Utilities in Corporate Governance dimension. This negative but significant effect could be explained by the fact that when distress symptoms are identified, companies reduce their investment on costly dimensions, such as Environment, and try to heal their situation as soon as possible. As it occurred for the general CSR strength valuations, firm size is an important variable in all the CSR strength dimensions assessment and for almost every sector.

As to the same dimensions but on the concerns side (Table 7.17 to Table 7.23), we find that economic performance is not significant in any of the sectors but Communication. For this latter sector the higher the economic performance the higher the score of Product concern dimension. This fact may be explained by the capacity of these high performers to fulfill the payment of all the penalties for product safety, marketing or contracting controversies or antitrust violations. Current ratio also results in a significant and positive influence on Product concern dimension, but for the Energy sector. The higher the capacity of a firm to satisfy creditors, the higher the score obtained in concern Product dimension. Using the same reasoning exposed for high performers, these companies have high current assets which allows them accomplish the short term liabilities, and caring less about Product concerns. Moreover, current ratio is

also significant and has a positive relation with Diversity concern dimension for Basic Materials sector. Given the peculiarities of the sector, dealing with mining and refining minerals and being characterized by the non-presence of women in the directive board and other controversies, may cause an increase in the concerns side of Diversity.

The situation of financial distress is significant for firms operating in Consumer non-cyclical which have higher scores in Product concerns than healthy firms. Due to the existence of distress, firms in Consumer Non-cyclical sector are more carefree on CSR behavior, compared to healthy firms, and try to resolve their difficulties. Surprisingly, distressed firms of Technology sector have a better performance in CSR Corporate Governance concerns than firms showing a stable situation. Once again, it is confirmed that distressed firms try to have a socially responsible behavior in order to mitigate the weak image given by their financial statements and they do so by acting on CSR non costly dimensions. Finally, as it could be expected, companies in distress in Basic Materials sector, have a higher and significant level of concerns in Environmental dimension. The characteristics of this sector make it more vulnerable to accomplishing the environmental compromise when symptoms of distress are displayed.

The regression results for individual dimensions allow confirming our H4 and H5 hypothesis, although it is necessary to make some incisions. It is indeed confirmed that the conducts of companies, once financial distress is identified, are independent from the sector where they operate given that their behaviors vary towards certain dimensions based on the activity performed and on how the dimensions affect this activity. For this reason, H4 can be confirmed but on a sectorial context. The influence of a firm's the possible economic or financial weaknesses on the incentives to modify the attitude towards CSR actions also depend on the sectors being considered.

Table 7.10. Regression coefficient for each sector in the Community Dimension assessment - STRENGHTS

Strengths	Basic Mat.		Communic.		Cons. Cyclic		Con. Non-Cyc		Energy		Industrials		Technology		Utilities	
	Beta	Sig.	Beta	Sig.	Beta	Sig.	Beta	Sig.	Beta	Sig.	Beta	Sig.	Beta	Sig.	Beta	Sig.
Com t	,827	**,000**	,937	**,000**	,936	**,000**	,959	**,000**	,736	**,000**	,764	**,000**	,971	**,000**	,826	**,000**
ROAt	,026	,482	-,020	,422	,006	,597	,011	,333	-,030	,467	,040	*,002*	,015	,358	,004	,978
CACLt	-,003	,542	,000	,641	,000	,918	,000	,839	-,001	,823	,000	,455	,000	,924	,000	,980
LnTA	,001	,674	,001	,446	,003	*,045*	,001	,427	,003	,291	,002	*,027*	,008	**,000**	-,001	,620
FinDiss	,002	,870	-,008	,317	,004	,446	,001	,832	,001	,892	,008	*,038*	,004	,441	,011	,116
R square	86,50%		81,50%		80,00%		87,60%		79,10%		76,50%		86,00%		86,80%	

Table 7.11. Regression coefficient for each sector in the Corporate Governance Dimension assessment - STRENGHTS

Strengths	Basic Mat.		Communic.		Cons. Cyclic		Con. Non-Cyc		Energy		Industrials		Technology		Utilities	
	Beta	Sig.	Beta	Sig.	Beta	Sig.	Beta	Sig.	Beta	Sig.	Beta	Sig.	Beta	Sig.	Beta	Sig.
Cgov t	,488	**,000**	,451	**,000**	,674	**,000**	,839	**,000**	,715	**,000**	,575	**,000**	,799	**,000**	,569	**,000**
ROAt	,023	,736	,112	*,059*	,006	,789	,019	,506	,109	,107	,022	,511	,013	,651	-,062	,882
CACLt	-,002	,791	,004	*,037*	,004	*,058*	,003	*,061*	,000	,997	,002	,201	,003	*,002*	-,011	,448
LnTA	,017	*,003*	,001	,738	,002	,304	,005	*,007*	,001	,775	,004	*,066*	,010	**,000**	,002	,738
FinDiss	,018	,356	,031	*,092*	,009	,360	-,005	,584	-,017	,278	,019	*,053*	,001	,883	-,045	*,024*
R square	39,90%		46,10%		44,40%		53,50%		50,50%		32,20%		59,70%		38,80%	

Note: In *italic*, significant at 90% level of confidence.
In **bold**, significant at 99% level of confidence.

Table 7.12. Regression coefficient for each sector in the Diversity Dimension assessment - STRENGHTS

Strengths	Basic Mat.		Communic.		Cons. Cyclic		Con. Non-Cyc		Energy		Industrials		Technology		Utilities	
	Beta	Sig.	Beta	Sig.	Beta	Sig.	Beta	Sig.	Beta	Sig.	Beta	Sig.	Beta	Sig.	Beta	Sig.
Div t	,753	**,000**	,876	**,000**	,947	**,000**	,931	**,000**	,833	**,000**	,903	**,000**	,911	**,000**	,804	**,000**
ROAt	,055	,355	,107	,106	,005	,764	,010	,711	,039	,351	-,013	,640	-,004	,900	-,363	,430
CACLt	-,006	,409	,000	,956	,001	,572	,000	,908	,005	*,067*	,000	,866	-,001	,335	-,011	,469
LnTA	,007	,249	,019	**,001**	,005	*,031*	,007	**,000**	,010	**,000**	,007	**,000**	,012	**,000**	,013	,100
FinDiss	-,003	,862	,000	,991	,003	,764	-,007	,460	,014	,131	,010	,252	,010	,336	-,048	,032
R square	77,40%		90,10%		85,90%		87,30%		78,30%		78,20%		90,00%		77,60%	

Table 7.13. Regression coefficient for each sector in the Employee Relation Dimension assessment - STRENGHTS

Strengths	Basic Mat.		Communic.		Cons. Cyclic		Con. Non-Cyc		Energy		Industrials		Technology		Utilities	
	Beta	Sig.	Beta	Sig.	Beta	Sig.	Beta	Sig.	Beta	Sig.	Beta	Sig.	Beta	Sig.	Beta	Sig.
Emp t	,877	**,000**	1,050	**,000**	,955	**,000**	,909	**,000**	,864	**,000**	,849	**,000**	,883	**,000**	,997	**,000**
ROAt	,013	,855	,042	,357	,004	,749	,026	,181	-,043	,537	-,012	,664	,019	,544	,360	,212
CACLt	,008	,357	-,001	,499	-,001	,557	,001	,614	-,007	,143	,001	,353	,000	,908	-,004	,647
LnTA	,014	*,025*	,007	*,022*	,001	,394	,003	*,038*	,009	*,078*	,008	**,000**	,009	**,001**	,003	,503
FinDiss	-,014	,519	-,009	,530	,006	,342	,002	,737	-,014	,386	,012	,159	-,007	,535	-,014	,322
R square	77,60%		79,40%		85,30%		73,50%		77,80%		68,70%		79,00%		70,20%	

Note: In *italic*, significant at 90% level of confidence.
In **bold**, significant at 99% level of confidence.

Table 7.14. Regression coefficient for each sector in the Environment Dimension assessment - STRENGHTS

Strengths	Basic Mat.		Communic.		Cons. Cyclic		Con. Non-Cyc		Energy		Industrials		Technology		Utilities	
	Beta	Sig.	Beta	Sig.	Beta	Sig.	Beta	Sig.	Beta	Sig.	Beta	Sig.	Beta	Sig.	Beta	Sig.
Env t	,915	**,000**	N/A		,985	**,000**	1,053	**,000**	,566	**,000**	,938	**,000**	1,025	**,000**	,705	**,000**
ROAt	,087	*,080*			,010	,273	,017	,191	,002	,964	,006	,759	-,009	,637	-,076	,707
CACLt	,000	,993			,000	,687	,000	,898	,000	,887	,000	,865	,001	*,088*	-,006	,412
LnTA	,013	*,003*			,004	**,000**	,004	**,000**	,004	*,058*	,007	**,000**	,006	**,000**	,004	,193
FinDiss	,007	,610			,010	*,017*	,001	,733	-,008	,364	,002	,770	-,012	*,053*	-,016	,108
R square	84,00%				79,50%		85,00%		30,60%		75,70%		80,10%		72,80%	

Table 7.15. Regression coefficient for each sector in the Human Rights Dimension assessment - STRENGHTS

Strengths	Basic Mat.		Communic.		Cons. Cyclic		Con. Non-Cyc		Energy		Industrials		Technology		Utilities	
	Beta	Sig.	Beta	Sig.	Beta	Sig.	Beta	Sig.	Beta	Sig.	Beta	Sig.	Beta	Sig.	Beta	Sig.
Hum t	N/A		N/A		,989	**,000**	,750	**,000**	N/A		N/A		N/A		N/A	
ROAt					,003	,529	-,007	,145								
CACLt					,000	,770	,000	,608								
LnTA					,001	*,091*	-,001	*,086*								
FinDiss					-,001	,673	,001	,630								
R square					71,30%		75,10%									

Note: In *italic*, significant at 90% level of confidence.
In **bold**, significant at 99% level of confidence.

Table 7.16. Regression coefficient for each sector in the Product Dimension assessment - STRENGHTS

Strengths	Basic Mat.		Communic.		Cons. Cyclic		Con. Non-Cyc		Energy		Industrials		Technology		Utilities	
	Beta	Sig.	Beta	Sig.	Beta	Sig.	Beta	Sig.	Beta	Sig.	Beta	Sig.	Beta	Sig.	Beta	Sig.
Pro t	,871	**,000**	,812	**,000**	,778	**,000**	,923	**,000**	,460	**,000**	,978	**,000**	,845	**,000**		
ROAt	-,019	,679	,073	,138	,003	,764	,018	,266	,047	,250	,033	*,044*	-,021	,336		
CACLt	-,003	,633	,001	,715	,000	,967	,000	,859	,003	,264	-,001	*,090*	,000	,737		
LnTA	-,002	,572	,008	*,054*	,003	*,013*	,003	*,007*	,003	,260	,000	,989	,001	,722	N/A	
FinDiss	-,004	,741	-,004	,798	-,003	,647	,005	,344	,007	,457	-,004	,445	-,002	,751		
R square	79,00%		82,30%		68,20%		77,30%		18,20%		91,40%		66,60%			

Table 7.17. Regression coefficient for each sector in the Community Dimension assessment – CONCERNS

Concerns	Basic Mat.		Communic.		Cons. Cyclic		Con. Non-Cyc		Energy		Industrials		Technology		Utilities	
	Beta	Sig.	Beta	Sig.	Beta	Sig.	Beta	Sig.	Beta	Sig.	Beta	Sig.	Beta	Sig.	Beta	Sig.
Com t	,444	**,000**			,739	**,000**	,905	**,000**	,774	**,000**	,786	**,000**	,771	**,000**	,861	**,000**
ROAt	-,020	,764			-,001	,934	,005	,669	-,038	,569	-,002	,894	,015	,402	,266	,387
CACLt	,011	,225			,000	,739	,000	,604	-,002	,748	,000	,962	,000	,930	-,001	,894
LnTA	,022	**,000**	N/A		,003	*,016*	,001	,229	,016	*,002*	,003	*,002*	,005	**,000**	,003	,659
FinDiss	-,017	,383			,000	,948	-,001	,895	-,021	,183	,005	,323	,001	,831	-,001	,927
R square	41,60%				49,30%		72,50%		77,70%		59,70%		57,00%		72,30%	

Note: In *italic*, significant at 90% level of confidence.
In **bold**, significant at 99% level of confidence.

Table 7.18. Regression coefficient for each sector in the Corporate Governance Dimension assessment – CONCERNS

Concerns	Basic Mat.		Communic.		Cons. Cyclic		Con. Non-Cyc		Energy		Industrials		Technology		Utilities	
	Beta	Sig.	Beta	Sig.	Beta	Sig.	Beta	Sig.	Beta	Sig.	Beta	Sig.	Beta	Sig.	Beta	Sig.
Cgov t	,752	**,000**	,495	**,000**	,583	**,000**	,533	**,000**	,733	**,000**	,641	**,000**	,662	**,000**	,800	**,000**
ROAt	-,006	,928	,058	,454	,028	,241	,055	,138	,123	,109	,006	,870	-,009	,798	-,040	,900
CACLt	,008	,324	-,004	,137	-,002	,486	-,001	,544	,001	,786	,001	,708	,001	,683	,003	,791
LnTA	,006	,270	,010	*,096*	,011	**,000**	,017	**,000**	,013	*,022*	,010	**,000**	,012	**,000**	,001	,844
FinDiss	,005	,814	-,008	,739	,007	,536	,003	,822	,019	,276	,004	,699	-,024	*,052*	-,001	,924
R square	56,40%		41,50%		40,80%		45,00%		68,90%		47,50%		54,80%		67,00%	

Table 7.19. Regression coefficient for each sector in the Diversity Dimension assessment – CONCERNS

Concerns	Basic Mat.		Communic.		Cons. Cyclic		Con. Non-Cyc		Energy		Industrials		Technology		Utilities	
	Beta	Sig.	Beta	Sig.	Beta	Sig.	Beta	Sig.	Beta	Sig.	Beta	Sig.	Beta	Sig.	Beta	Sig.
Div t	,830	**,000**	,867	**,000**	,848	**,000**	,788	**,000**	,796	**,000**	,763	**,000**	,853	**,000**	N/A	
ROAt	-,049	,578	-,091	,360	-,038	,220	-,010	,808	,146	,183	-,056	,361	-,037	,343		
CACLt	,019	*,076*	,003	,366	,001	,830	,000	,992	-,002	,809	,000	,995	,001	,484		
LnTA	-,005	,477	,002	,818	,003	,382	,000	,966	-,017	*,010*	-,002	,534	-,009	*,003*		
FinDiss	-,041	,112	,002	,951	,013	,385	-,011	,439	-,008	,762	-,013	,470	-,002	,880		
R square	65,60%		75,70%		72,80%		60,90%		64,80%		56,40%		78,00%			

Note: In *italic*, significant at 90% level of confidence.
In **bold**, significant at 99% level of confidence.

Table 7.20. Regression coefficient for each sector in the Employee Relation Dimension assessment – CONCERNS

Concerns	Basic Mat.		Communic.		Cons. Cyclic		Con. Non-Cyc		Energy		Industrials		Technology		Utilities	
	Beta	Sig.	Beta	Sig.	Beta	Sig.	Beta	Sig.	Beta	Sig.	Beta	Sig.	Beta	Sig.	Beta	Sig.
Emp t	,662	**,000**	,825	**,000**	,866	**,000**	,860	**,000**	,671	**,000**	,673	**,000**	,768	**,000**	,591	**,000**
ROAt	-,023	,834	-,094	,443	-,028	,339	-,052	,231	-,077	,522	,060	,263	,016	,643	-,553	,257
CACLt	-,021	,121	-,003	,490	,001	,678	-,003	,199	,009	,336	-,003	,113	-,001	,500	-,004	,811
LnTA	,005	,512	-,003	,698	,009	*,009*	,006	*,054*	,028	*,003*	,017	**,000**	,004	,110	,003	,753
FinDiss	,020	,525	,022	,571	,001	,958	-,001	,956	-,009	,760	,004	,794	,011	,354	,011	,622
R square	50,60%		44,70%		63,40%		64,50%		66,10%		51,10%		57,60%		48,70%	

Table 7.21. Regression coefficient for each sector in the Environment Dimension assessment – CONCERNS

Concerns	Basic Mat.		Communic.		Cons. Cyclic		Con. Non-Cyc		Energy		Industrials		Technology		Utilities	
	Beta	Sig.	Beta	Sig.	Beta	Sig.	Beta	Sig.	Beta	Sig.	Beta	Sig.	Beta	Sig.	Beta	Sig.
Env t	,778	**,000**	N/A		,936	**,000**	,926	**,000**	,911	**,000**	,868	**,000**	1,010	**,000**	,865	**,000**
ROAt	,045	,593			,004	,683	,016	,351	,063	,346	,009	,718	-,004	,689	-,005	,987
CACLt	-,003	,734			-,001	,449	,000	,801	,003	,538	,000	,810	,000	,663	-,006	,611
LnTA	,024	*,009*			,001	,308	,004	*,003*	,017	**,001**	,010	**,000**	,002	*,015*	,014	*,048*
FinDiss	,041	*,098*			-,001	,804	,009	,122	-,003	,844	-,001	,944	-,002	,499	-,017	,272
R square	81,70%				84,60%		83,50%		91,60%		78,00%		80,60%		90,40%	

Note: In *italic*, significant at 90% level of confidence.
In **bold**, significant at 99% level of confidence.

Table 7.22. Regression coefficient for each sector in the Human Rights Dimension assessment – CONCERNS

Concerns	Basic Mat.		Communic.		Cons. Cyclic		Con. Non-Cyc		Energy		Industrials		Technology		Utilities	
	Beta	Sig.	Beta	Sig.	Beta	Sig.	Beta	Sig.	Beta	Sig.	Beta	Sig.	Beta	Sig.	Beta	Sig.
Hum t	,959	**,000**	,692	**,000**	,646	**,000**	,842	**,000**	,953	**,000**	,412	**,000**	,544	**,000**	,841	**,000**
ROAt	-,034	,269	-,004	,913	,019	,105	,001	,936	-,014	,635	-,013	,361	-,012	,486	,119	,232
CACLt	,000	,929	,001	,265	,001	,604	,000	,816	,000	,999	,001	,350	,001	,275	,003	,305
LnTA	,004	,160	,004	*,098*	,009	**,000**	,002	*,004*	,004	*,031*	,003	**,001**	,007	**,000**	,004	*,039*
FinDiss	-,006	,482	-,006	,583	,003	,642	,004	,258	-,007	,320	-,001	,725	,003	,547	,004	,380
R square	84,80%		53,00%		61,10%		61,80%		90,90%		25,90%		43,20%		87,20%	

Table 7.23. Regression coefficient for each sector in the Product Dimension assessment – CONCERNS

Concerns	Basic Mat.		Communic.		Cons. Cyclic		Con. Non-Cyc		Energy		Industrials		Technology		Utilities	
	Beta	Sig.	Beta	Sig.	Beta	Sig.	Beta	Sig.	Beta	Sig.	Beta	Sig.	Beta	Sig.	Beta	Sig.
Pro t	,846	**,000**	,640	**,000**	,834	**,000**	,895	**,000**	,614	**,000**	,859	**,000**	,635	**,000**	,690	**,000**
ROAt	,056	,543	,137	*,061*	,001	,938	,046	,219	,096	,288	-,023	,456	,108	**,000**	-,258	,636
CACLt	,008	,503	,004	,133	,001	,485	,000	,917	,013	*,070*	,000	,797	,000	,676	-,009	,623
LnTA	,012	,129	,027	**,000**	,008	**,000**	,013	**,000**	,020	*,003*	,006	*,003*	,008	**,000**	,040	**,000**
FinDiss	-,016	,540	,002	,937	,001	,895	,023	*,073*	,028	,197	-,008	,359	,024	*,013*	-,040	,121
R square	76,90%		72,10%		76,80%		85,80%		70,10%		75,60%		53,90%		75,20%	

Note: In *italic*, significant at 90% level of confidence.
In **bold**, significant at 99% level of confidence.

7.4. Conclusions

We found that healthy firms present changes in all the year windows analyzed while distressed firms tend to increase their concern valuation or reduce their strength valuation one year after identifying the symptoms of economic and financial weaknesses. However, when observed separately these differences do not occur in all the dimensions of CSR. Although we observed changes in distressed companies, they cannot be generalized as a pattern occurring during all the periods analyzed. Distressed firms maintain their CSR investment, so that they do not worsen their CSR worries despite their deteriorated situation.

In fact, we observe an increase in actions on non-costly dimensions such as Diversity or Human rights, where distressed firms show different behavior from healthy firms. Differences between the two groups of firms already appear during the year symptoms of crisis occur, thus we can affirm that distressed firms start their attitude change the year they suspect will incur into economic and financial problems.

Distressed firms disinvest in actions related to product, one of the most expensive dimensions and with major repercussion on the deteriorated income statement. The same behavior is also observed in the environmental dimension. While healthy firms try to reduce their concerns in the latter dimension, for distressed firms it does not occur, during the same period. In this sense, economic performance resulted relevant in certain sectors and in the most costly dimensions of CSR. In this way, it is somehow confirmed that certain CSR investments could be performed when there is certainty on firm's capacity to generate funds and invest.

In general, the different analyzed variables were mainly significant when the models of responsible behavior were applied to individual dimensions and depended on the sector. The latter is one of the aspects that could influence more on the incentive of financial distress companies to maintain, increase or decrease their actions on CSR. Sectors more sensible to the stakeholder's attitude, but with deficiencies on economic performance, will try to maintain the society confidence through actions that do not affect their deteriorated situation.

In many CSR dimensions the changes observed between the year t and t+1 are independent of the fact of being distressed or healthy. As a consequence, despite their problematic situation, distressed firms continue to wager in CSR investment and on those dimensions that are apparently valued by the market in that instant. The differences in the profiles allow us affirming that, as Mackey *et al*. (2007) state, CSR investment is a matter of supply and demand coming from the market in that particular moment of time.

References

Belu, C. (2009), "Ranking corporations in terms of sustainable and socially responsible practices", *Sustainable Development*, 17 (4), pp. 257-268.

Hillman, A.J and Keim, G.D. (2001), "Shareholder value, stakeholder management, and social issues: what's the bottom line?" *Strategic Management Journal*, 22 (2), pp. 125-139.

Kruskal, J.B. (1964), "Nonmetric multidimensional scaling: a numerical method", *Psychometrika*, 29, pp. 115–129.

Mackey, A., Mackey T.B. and Barney J.B. (2007), "Corporate social responsibility and firm performance: Investor preferences and corporate strategies", *Academy of Management Review,* 32, pp. 817–835.

Orlitzky, M., Schmidt, F.L. and Rynes, S.R. (2003), "Corporate social and financial performance: A meta-analysis", *Organization Studies*, 24 (3), pp. 403– 41.

APPENDIX III

A. Definition of sectors of operational activity.

Sector	Definition
Basic materials	Companies involved with the discovery, development and processing of raw materials. The activities include mining and refining of metals, chemical producers and forestry products.
Communications	Companies whose activities regard the fixed-line and wireless telecommunication networks for voice, data and high-density data.
Consumer cyclical	A sector that includes industries such as automotive, housing, entertainment and retail.
Consumer non-cyclical	Companies operating in fishing and farming operations; the processing and production of food, beverages and tobacco; manufacturers of household and personal products; and providers of personal services.
Energy	Companies 0producing or supplying energy and also the exploration and development of oil or gas reserves, oil and gas drilling, or integrated power firms.
Industrials	Companies producing goods used in construction and manufacturing and includes companies involved with aerospace and defense, manufacturing machinery, tools, lumber production, construction, cement and metal fabrication.
Technology	Companies engaged with research, development and/or distribution of technologically based goods and services including businesses operating around the manufacturing of electronics, creation of software, computers or products and services relating to information technology.
Utilities	Companies offering utilities such as gas and power and includes companies that provide electric, gas and water.

CONCLUSIONS

Conclusions

In spite of the outcome of failure prediction models, a group of firms presenting what in literature are known as symptoms of distress, continue their activity in the market 10 years after the crisis was identified. The most surprising fact is that none of the companies identified as facing a financial distress situation at the beginning of the analysis, entered in a bankruptcy process during the same, despite of their high failure index value, such as Z-score.

This fact allows considering that failure is a reversible process and it is not necessarily degenerative if the company is able to achieve an effort in its economic performance. In case of weak crisis situations, companies tend to show a natural evolution throughout the "exit" and may solve it by simply making "routine" decisions. The "momentary" character of these situations may be one of the reasons that these companies end up in a similar situation at the end of the period of analysis.

The curious side of the outcome consists when companies initiate with a severe crisis situation, presenting critical financial values, have been able to resolve it. Most of the companies with similar "degenerated" economic and financial structures are more exposed to an evolutionary-degenerative process although they maintain themselves in the market throughout the years. The resolution of the critical situation was possible due to the important effort achieved by companies in the economic performance, which allowed them not only solve the situation but also reinforce it.

Another reason to resolve distress was that distressed firms shared common structural characteristics with companies that showed less and slighter symptoms of crisis. This fact allows affirming that the symptoms are only manifestations of an underlying situation. The deficiencies and gravities of this situation are the factors that determine the changes in the crisis situation. Severity of the initial situation does not have to be a crucial factor in the outcome of the crisis and distressed firms with remarkable financial reaction capability and/or a solid financial structure evolve mainly toward a healthy zone.

Once the existence of differences and similarities was identified, the next step was identifying the relationship that could exist between some control variables such as size, industry, macroeconomic factor, etc. and the possibility of revolving the situation.

Understanding what factors affect the success to overcome a crisis situation is crucial in order to improve the decision making process of managers. Several researches have shown that issues such as severity of the initial situation or size condition the recovery process. Moreover, implementing strategies oriented towards efficiency has also resulted to be fundamental in encountering a better and improved path. We obtained that the final post-distress position can be explained by certain variables and under certain circumstances.

First of all, the relationship between *Reaction Capability* of distressed firms and the final fit state depends on whether the general model or the individual sectors model is considered.

Second, and in contrast with other researches, the *Severity* degree does not determine a negative outcome of the situation or a negative survival capacity in appropriate conditions. In agreement with Reaction Capability results, it is the underlying structural capacities, and not the distress symptoms, that determine the way by which a firm faces its critical situation.

When bearing in mind the difference between recovery periods, it can be considered that a long term actually permits an effective outcome of a crisis situation. Regarding profitability, although it is an important factor in representing a low risk situation the results were not sufficient to affirm that continuous profitable performance is a necessary condition to overcome a difficult situation.

Regarding the size of a company, big firms tend to present a better situation and a lower risk after the initial distress situation and the industry where companies develop its activity has an influence on the outcome of a difficult situation. Certain specific characteristics of each sector may contribute or inhibit the evolution of the recovery process and as a consequence on the outcome of the strategies implied by the firms to solve the distress.

Besides the strategies oriented towards profitability by means of modifications of the economic and financial structure in order to overcome a problematic situation, we also consider the possibility of managers to "handle" the image of the weak financial situation throughout investments in responsible actions as a mechanism in order to supply future solidity to the firm. In this way, not only investors but also the market itself would be infected by this behavior of future expectations of the managers. We obtained no differences between distressed and healthy firms, in structural CSR behavior in aspects considered as strengths. This means that the managerial decisions on responsible behavior are independent from the financial situation. Yet, it could also mean that managers of companies in decline have a responsible behavior strategy to smoothen the image given by their weak economic and financial indicators.

Furthermore, there exist differences in the valuation of concerns so that companies in crisis obtain worse valuations with respect to the negative items included in the KLD database. This fact could be a consequence of the tendency to reduce costs and investments in actions that would continue weakening an already deteriorated financial situation. However, these companies follow a CSR strategy aimed at investing in responsible behavior with a high level of social or reputational impact but with a low investment cost, such as gender diversity.

As a consequence, we find that the crisis variable, indeed, as well as the type and severity of the same, discriminates companies with similar proactive and/or reactive patterns. Moreover, these common patterns usually are more highlighted one year after the company has identified certain deteriorated economic and financial indicators.

One year after the crisis situation reveals, companies seem to have a common profile regarding social responsible behavior, which was not observed previously. Yet, the only characteristic that discriminates these companies from the general profile of healthy companies is their weak wager on actions that could strengthen their environmental position. This fact can be explained by the associated costs that these actions require and which may impact an already deteriorated economic position.

Distressed firms modify their responsible behavior in a way that is not reflected in a more positive general valuation. They act on certain specific actions. Regarding

concerns, distressed firms do not have a differentiated specific profile, yet their situation has changed after the starting of the deficient state, as if they simply had decided to join the more common behaviors among companies to avoid being valued negatively.

Distinct profiles exist when we consider the type and origin of the crisis, mainly differentiating the existence of a deficit in the income statement. This agglomeration could be related to strategies implemented by the company for the recovery process.

The differences in the responsible behaviors for weak firms from an operational performance view and weak firms from a financial structure view can be caused, to some extent, by such situations. Companies weak in performance need to improve their short-term income statement and this can be seen in the tendency to cut costs and invest in stocks with a direct benefit on turnover rather than social standing.

In general, when analyzing the factors that influence the final CSR strategy followed by companies once distress is identified, we found that healthy firms present changes in all the year windows analyzed while distressed firms tend to increase their concern valuation or reduce their strength valuation one year after identifying the symptoms of economic and financial weaknesses. However, when observed separately these differences do not occur in all the dimensions of CSR. Although we observed changes in distressed companies, they cannot be generalized as a pattern occurring during all the periods analyzed. Distressed firms maintain their CSR investment, so that they do not worsen their CSR worries despite their deteriorated situation.

An increase in actions in non-costly dimensions such as Diversity or Human rights, where distressed firms show different behavior from healthy firms, is observed. Differences between the two groups of firms already appear during the year when distress occur, thus we can affirm that distressed firms start their attitude change the year they start to suspect that they will incur into economic and financial problems.

Distressed firms reduce their investments in actions related to product, one of the most expensive dimensions and with major repercussion on the deteriorated income statement. The same behavior is also observed in the environmental dimension. While healthy firms try to reduce their concerns in the latter dimension, for distressed firms it does not occur, during the same period. In this sense, economic performance resulted

relevant in certain sectors and in the most costly dimensions of CSR. In this way, it is somehow confirmed that certain CSR investments could be performed when there is certainty on firm's capacity to generate funds and invest.

When the models of responsible behavior were applied to individual dimensions and depending on the sector, the different analyzed variables were basically significant. The sector variable is one of the aspects that could influence more on the incentive of financial distress companies to maintain, increase or decrease their actions on CSR. Sectors sensible to the stakeholder's attitude but with deficiencies on economic performance, will try to maintain the society confidence through actions that do not affect their deteriorated situation.

Being distressed or having a stable situation is independent of the changes observed in many CSR dimensions between the year t and t+1. As a consequence, despite their problematic situation, distressed firms continue to wager on CSR investment and on those dimensions that are apparently valued by the market in that moment of time. The differences in the profiles allow us affirming that CSR investment is a matter of supply and demand coming from the market in that specific period of time.

"Let me embrace thee, sour adversity, for wise men say it is the wisest course."

William Shakespeare

SPANISH SUMMARY
RESUMEN EN ESPAÑOL

Spanish summary - Resumen en español

INTRODUCCIÓN

Cada organización está inevitablemente expuesta a subidas y bajadas durante su ciclo de vida (Krueger y Willard, 1991; Burbank, 2005) y el fracaso no es un acontecimiento repentino (Agarwal y Taffler, 2008). La teoría ecológica de las organizaciones afirma que, en un proceso continuo, las empresas que sobreviven están en mejores condiciones para competir. Kahl (2001) define "las empresas más aptas" como las que tienen más posibilidades de sobrevivir. De esta manera, el proceso de *financial distress* debe entenderse como un mecanismo de selección por medio del cual las empresas con buenos resultados sobreviven y las empresas con malos resultados no lo hacen. En esta misma línea, Sheppard y Chowdhury (2005) consideran que el fracaso es el desajuste de una empresa con su entorno.

La investigación sobre situaciones de crisis empresarial ha estado vinculada estrechamente a la determinación de modelos de predicción de fracaso como desenlace a un proceso evolutivo, donde la idea subyacente es la posibilidad de que la crisis puede efectivamente ser anticipada (Balcaen y Ooghe, 2006).

Los primeros modelos de predicción, como el propuesto por Altman (1968), han construido los fundamentos de la investigación basada en predicción. Estas investigaciones se centraban principalmente en minimizar errores de clasificación y maximizar las medidas de bondad de ajuste mediante la aplicación de ciertas variables en un período de tiempo amplio. En este contexto, los modelos de predicción se evaluaban en base a su porcentaje de éxito en la clasificación de las empresas de la muestra de control (Smith y Graves, 2005). La existencia de un error en la clasificación de las empresas que aunque clasificadas como fracasadas al final no lo hacían, fue considerada como un error del modelo propuesto. Sin embargo, estos resultados dejan una puerta abierta a la posibilidad de que las empresas pueden sobrevivir a una situación difícil o también subsistir en una situación de crisis permanente. Este enfoque permitiría considerar la posibilidad de que el fracaso puede a veces no ser un proceso evolutivo-degenerativo, sino puede revertir de una manera que las empresas son capaces

de subsistir, aunque aún presenten ciertas situaciones que pueden condicionar su supervivencia. En este sentido, los modelos de predicción no sólo proporcionan información esencial a fin de tomar acciones contra la probabilidad de fracaso, pero también alertan sobre un resultado futuro que, en muchos casos, puede que no se materialice.

Este uso "pasivo" de los modelos de predicción del fracaso se ha puesto de manifiesto de Altman y Hotchkiss (2006) quienes afirman que los stakeholders deberían tener una participación más activa en lugar de ser simples espectadores de una determinada "probabilidad de default". Básicamente, esta probabilidad de fracaso debe ser considerada como información vital por parte de los administradores no sólo para mejorar las estrategias de negocio con el fin de administrar una situación problemática y volver a una situación financiera sana, sino también para desarrollar estrategias de inversión para los inversores potenciales o para los auditores que emiten una opinión con salvedades (Barniv *et al.*, 2002).

El fracaso es un proceso reversible y no necesariamente degenerativo si la empresa es capaz de detectar las señales de bajo rendimiento y de conseguir un esfuerzo en su rendimiento económico. En este sentido, gestionar una situación de crisis es una cuestión fundamental, ya que no es un proceso espontáneo. Sin embargo, como Barniv *et al.,* (2002) afirma, es más difícil establecer patrones del resultado final de una situación de financial distress que discriminar entre empresas sanas y con problemas porque las empresas con dificultades en la situación financiera suelen compartir una serie de patrones comunes que hacen que sea difícil de estimar un resultado posible de esta situación. Estos patrones se hacen evidentes en algunos indicadores, como las ventas, patrimonio neto o la rentabilidad. Entre las empresas con dificultades hay pocas divergencias en los indicadores de la debilidad financiera indicadores en los diferentes procesos de fracaso (Ooghe y Prijcker, 2008). Las diferencias entre las fases del fracaso y la efectividad de la recuperación, se ponen de manifiesto en la rapidez de la evolución de los indicadores y en la capacidad de la gestión de reaccionar una vez que se han detectado las señales de alerta. Ignorar estas señales de alerta puede conducir a un continuo proceso de declive que puede terminar en un fracaso sin siquiera intentar cualquier estrategia de recuperación (Burbank, 2005).

La reorganización financiera durante una situación de distress no es un problema sencillo y la probabilidad de una salida satisfactoria es muy baja. Sin embargo, el porcentaje de las empresas que consiguen superar un declive con éxito no se puede no tener en cuenta. Barniv *et al.* (2002) encontraron que el 50% de las empresas incluidas en la muestra que presentó quiebra de la Oficina del Consejo General de la SEC ha resuelto su situación como empresas emergentes. Un tercio de las dificultades financieras de las empresas del estudio de Kahl (2001) sobrevivieron como empresas independientes. Sin embargo, debemos considerar que la salida de una condición difícil, como Moulton y Thomas (1993) sostienen, es sólo el principio de la historia.

Además, no todas las empresas que consiguen salir con éxito son capaces de mantener la nueva situación estable. Para algunas empresas, operar en una situación de crisis constituye su entorno normal, con períodos de crisis que pueden atenuarse o reducirse. De todos modos, el hecho de poder mantener este tipo de estado es también una forma de sobrevivir. En este sentido, Kahl (2002) afirma que la crisis financiera se debe considerar un proceso de largo plazo que hace que las empresas terminan debilitadas aún después de haber recuperado el declive. Esta debilidad es observada en un bajo rendimiento que inevitablemente puede volver a arrastrar las empresas a una nueva situación de peligro financiero. En este sentido, Hotchkiss (1995), demuestra que durante los primeros cinco años después de salir de una quiebra, un 35% a 40% de las empresas muestran un resultado de explotación negativo y hasta un tercio de las empresas que consiguen aliviar su situación de dificultades mediante la reestructuración de la deuda vuelva a entrar en una situación de peligro en los siguientes años.

Varios estudios han mostrado que son varios los factores que pueden determinar la salida de una situación de crisis (Robbins y Pearce, 1992; Pearce y Robbins, 1993, 1994; Barker y Duhaime, 1997; Cascio *et al.*, 1997; Morris *et al.*, 1999). Estos factores pueden tener una influencia directa en el proceso de recuperación o en la capacidad de la empresa para desarrollar estrategias apropiadas de redirección. El grado de severidad de partida es considerado como un importante obstáculo para aplicar medidas de éxito. En esta línea, Smith y Graves (2005) encontraron que, entre todas las variables del estudio, la severidad y el tamaño de la empresa fueron las únicas variables significativas durante un proceso de recuperación. Otros autores (Robbins y Pearce, 1992; Pearce y

Robbins, 1993; Harker y Harker, 1998) afirman que las estrategias orientadas a reducir los costes y mejorar la eficiencia son apuestas seguras para un resultado favorable. Sin embargo, Castrogiovani y Bruton (2000), Sudarsanam y Lai (2001) o Smith y Graves (2005) afirman que no existe una relación positiva entre ciertas estrategias y éxito. Estos resultados indican que la severidad, a través de su influencia en la estrategia seleccionada, podría ser un factor indirecto en proceso de recuperación (Robbins y Pearce, 1992).

Resultados más consensuales se obtuvieron al afirmar que el rendimiento durante una crisis es fundamental para el desenlace de la difícil situación. En particular, se observa que las empresas de éxito muestran mejores rendimientos en comparación con las empresas sin éxito (Routledge y Gadene, 2000; Pearce y Doh, 2002; Kahl, 2001).

Por otro lado, la información contable que evidencia cierta situación de dificultades financieras, constituye una señal de alerta cuando los inversores evalúan el estado de supervivencia de una empresa. Cuando una situación de crisis se produce durante el ciclo de vida de una empresa, es fundamental mantener el apoyo y la confianza de los accionistas. Prahalad y Hamel (1994) consideran que los comportamientos sociales pueden asegurar el éxito futuro de la empresa, fomentando el apoyo y la confianza de los stakeholders. En esta línea, se puede plantear la siguiente pregunta: ¿Puede el comportamiento responsable actuar como un factor mitigante de los problemas de las empresas cuando se manifiestan ciertas dificultades financieras? Si la inversión en RSC crea reputación para los stakeholders, contribuyendo en la sinceridad y credibilidad de la empresa (McWilliams y Siegel, 2001; Schnietz y Epsteinm, 2005), entonces puede mitigar la imagen ofrecida por los deteriorados estados financieros y añadir valor económico a la empresa.

Frente a una situación de crisis inicia un largo proceso de recuperación cuyo resultado no está garantizado y que implica una amplia gama de estrategias y acciones que tienen que ser coherentes con las debilidades de la empresa (Robbins y Pearce, 1992; Pearce y Robbins, 1993; Castrogiovanni y Burton, 2000; Smith y Graves, 2005; Pretorius, 2008). Mantener el apoyo de los accionistas es fundamental para asegurar la situación financiera de una empresa o para obtener fondos adicionales a fin de poner en

práctica estrategias que permitan a la entidad dirigirse hacia una reorientación de la situación con el apoyo de otros grupos. En el largo plazo, la supervivencia de una empresa está estrictamente relacionada con la capacidad de la empresa para ajustar sus valores a las expectativas de las partes interesadas (Freeman, 1984; Becchetti *et al.*, 2007). Por lo tanto, las acciones de responsabilidad social pueden permitir consolidar el apoyo si garantizan y/o mejoran las valoraciones que los diferentes grupos atribuyen a la empresa. Aunque los inversionistas son prudentes a la presencia del riesgo que una situación de crisis implica, autores como Devinney (2009) defienden que el comportamiento responsable puede reducir el riesgo específico de una empresa, convirtiéndose en una de las razones por las cuales los gerentes de las empresas participan en iniciativas de responsabilidad social. El comportamiento responsable reduce la percepción de riesgo mientras refuerza la imagen de la empresa y ésta última consigue mejores tasas de descuento y un menor coste de capital (Feldman *et al.*, 1997; Miles y Covin, 2000; Heal, 2005; Goss, 2007; Ghoul *et al.,* 2011).

Las expectativas de los inversores en la conducta futura de una empresa basándose en la información financiera se modifican cuando se considera información extra financiera. Es interesante saber en qué medida la modificación de las expectativas se produce en las empresas que presentan algún tipo de dificultades financieras que *a priori* las hacen poco atractivas para los inversionistas. Las empresas que se encuentran en una situación de distress pueden sufrir reducción de ventas y de los ingresos debido a que los clientes comienzan a perder su confianza en ellas. En este caso, las prácticas de RSC pueden recompensar esta desconfianza inicial de los clientes para que, a pesar de todo, ellos las puedan considerar atractivas y fiables para continuar su relación de compras con las mismas. En este sentido, Ruf *et al.* (2001) muestran que hay una continua relación positiva entre la RSC y el aumento de las ventas. Otros (Heal, 2005) enumeran una serie de ventajas de las prácticas de RSC que hacen que una empresa sea más atractiva para los inversores, tales como la reducción de los conflictos con la empresa, la reducción de residuos, generación de valor de la marca, la productividad de los trabajadores o el menor coste de capital.

Este es el criterio seguido por Goss (2009) cuando demuestra que, a partir de la consideración de la RSC como una "proxy" de la buena gestión de las empresas, existe

una sólida relación negativa entre la RSC y la crisis financiera donde esta última se calcula como la probabilidad de default, siguiendo el Modelo de Merton. Goss (2007) llegó a la conclusión de que existe una relación entre la RSC y el distress, es decir, la información sobre las prácticas de RSC complementa y aporta información adicional a la ofrecida por los datos financieros. Sin embargo, no se ha podido establecer una clara demostración de que la inversión en RSC reduce el riesgo de crisis.

Partiendo de esta premisa, es interesante considerar la posibilidad de que los gestores de las empresas que se enfrentan en un determinado momento a situaciones de dificultad, inviertan en acciones de RSC como un camino para crear expectativas favorables que mitiguen los resultados ofrecidos por sus indicadores financieros. En este sentido, autores como de Ho y Taylor (2007) argumentan la existencia de incentivos a emitir información de carácter social y medioambiental por aquellas empresas que presentan desfavorables beneficios para poder ayudar a la compañía a reconducir su trayectoria. De una forma más precisa, trabajos como los de Goss (2007) y (2009) concluyen con la existencia de una relación positiva entre RSC y situaciones de crisis, aunque sin conseguir evidencia de que los comportamientos responsables reduzcan el riesgo de fracaso final.

Este trabajo tiene su punto de partida en la observación de la realidad en los Estados Unidos de un conjunto de empresas que en un momento determinado de tiempo muestran una situación de crisis. En particular, se observó que en el año 1993, un número de 753 empresas presentan algunos de los síntomas, más o menos graves, de una situación de inestabilidad a través de la identificación de algunos de los indicadores de crisis. Una parte de la situación analizada implicaría, desde el punto de vista de la teoría financiera, poner en duda la continuidad de la empresa en ese momento. Sin embargo, durante el período analizado, todas las empresas, excepto dos, estaban presentes en el mercado después de 10 años. Este hecho proporciona pruebas suficientes de la existencia de una alta tasa de supervivencia, a pesar de haber sufrido una grave crisis. Sin embargo, la evolución de este conjunto de empresas en todo el período de 10 años es diferente. Algunas empresas logran resolver su situación de crisis, mientras que otras siguen un patrón degenerativo, similar a una enfermedad con efectos degenerativos. Es interesante el hecho de que un porcentaje considerable de las

empresas parece mantenerse en la línea de límite entre la crisis y la estabilidad, con períodos de salud y enfermedad, de modo que se podría afirmar que hay una "especie" de la empresa para la que sobrevivir en crisis constituye su forma habitual de existir.

Los argumentos anteriores incitar a proponer las siguientes preguntas:

- ¿Qué patrones caracterizan a las empresas que se enfrentan a una situación de crisis en un momento determinado de tiempo, y que factores pueden determinar el proceso evolutivo?

- ¿Qué tipo de estrategias ponen en práctica las empresas en una situación de crisis para resolver o mitigar esta situación?

Siguiendo estas cuestiones, el presente trabajo está estructurado en siete capítulos y consiste principalmente de dos partes. En la primera parte, se analiza si la evolución de una situación de crisis depende de las características iniciales de la misma o si tiene que ver con determinadas características de las empresas, y los factores determinantes de los resultados finales. Sin embargo, es de destacar que el propósito de este estudio no se centra en la predicción. Más bien se centra en analizar los factores y los patrones que pueden determinar el proceso de recuperación.

El capítulo I se ofrece el marco teórico de la primera parte de esta investigación y expone el modelo de recuperación y los diferentes factores que influyen en el resultado final de la crisis.

El Capítulo II se dedica a un análisis descriptivo de la muestra de las empresas que presenten una situación de crisis y se representan en un mapa basándose en los síntomas de crisis ampliamente aceptados en la literatura, diferenciando entre variables de reacción y variables de recuperación. El objetivo es analizar las similitudes y diferencias entre las características estructurales de una muestra de empresas por medio de los cambios en su posición de crisis dada por: i) situación económica y financiera inicial; ii) capacidad de reacción y iii) la fuerza de la situación final.

Es en el Capítulo III donde las diferencias o similitudes existentes entre los dos grupos de empresas son empíricamente estudiadas a fin de determinar las asociaciones entre las variables y el resultado final. Consideramos que la recuperación (estado Post-distress) debe evaluar no sólo si una empresa logra resolver su estado crítico sino también la calidad de la posición final, considerando el riesgo de volver a entrar en distress. Podemos crear un indicador del bienestar que discrimina las empresas con buen desempeño, que solo consiguen salir de la crisis de las empresas con mejor desempeño, las cuales se posicionan en un nuevo escenario de bienestar, minimizando la probabilidad de recaer en una situación de dificultad.

La segunda parte de este estudio se inicia en el capítulo IV. Aunque muchos estudios se han centrado en la relación entre comportamiento económico y financiero de las empresas y sus acciones de responsabilidad social corporativa (RSC), son escasos los trabajos que analizan las acciones de responsabilidad social de las empresas que se enfrentan a una crisis. Los gerentes de las empresas que en cierto momento del tiempo se enfrentan a una situación de distress, podrían estar incentivados a invertir en acciones de responsabilidad social entre sus estrategias de recuperación. Estas últimas pueden ser utilizadas para complementar estrategias de eficiencia orientados a obtener beneficios asociados con las inversiones, para reducir los gastos en determinadas acciones con el fin de desarrollar las estrategias de reducción de costes, o para crear expectativas favorables que podrían mitigar los resultados débiles de sus indicadores financieros.

Muchos estudios relacionados con la RSC y los resultados económicos y financieros de las empresas han sido prueba de la asociación positiva entre las acciones de RSC y los resultados financieros, pero otros han encontrado pruebas de que esta relación es negativa o neutral. En el capítulo V analizamos si las empresas que se enfrentan a una situación de dificultades financieras incorporan la inversión en comportamientos responsables entre sus estrategias como un mecanismo para crear expectativas favorables que mitigan la debilitada imagen de algunos indicadores financieros.

En el capítulo VI se analizan los patrones de comportamiento responsable con el fin de determinar las marcas de identidad de las diferentes empresas y explorar si los perfiles de su conducta pueden estar asociados a la existencia o no de una situación de crisis.

Por último, el Capítulo VII estudia si una reconocida situación de crisis financiera tiene un impacto sobre las estrategias de RSC y modifica la actitud de un conjunto de empresas hacia un comportamiento más responsable. Se utiliza la información de RSC de las empresas sanas y con problemas para evidenciar los cambios en la actitud de RSC inducidos por la posición de distress y se determinan las variables más relevantes del comportamiento responsable, una vez identificados los síntomas de crisis, para la evaluación general, así como para la valoración de cada dimensión de RSC, teniendo en cuenta el sector donde las empresas desarrollan su actividad normal.

CAPITULO I. El proceso evolutivo del financial distress

A lo largo de los años, y tomando como referencia los iniciales trabajos de Beaver (1967) y posteriormente Altman (1968), las investigaciones se han orientado hacia la determinación de cuáles son esas estructuras que diferencian a las empresas fracasadas de las no fracasadas con el fin de poder determinar los estados de alerta (Altman *et al.*, 1977; Altman, 1984; Dimitras, *et al.*, 1996; Cybinsky, 2001; Balcaen y Ooghe, 2006, Ravi y Ravi, 2007). Estas investigaciones han ido variando respecto de la utilización de distintas técnicas estadísticas para la creación de modelos o la utilización de distintas variables predictivas, pero todas ellas se caracterizaban por la vinculación del término fracaso generalmente a la quiebra o desaparición de la empresa o la utilización de muestras pareadas de empresas fracasadas y no fracasadas, y no han estado exentas de críticas asociadas a los modelos utilizados, a las variables o a la selección de la muestra (Laitinen, 1991; Cybinski, 2001; Balcaen y Ooghe, 2006). Las distintas investigaciones han aportado conclusiones interesantes en relación con la crisis empresarial. Muchas de estas aportaciones son consecuencia de planteamientos que intentaron solventar algunas de las deficiencias metodológicas que tenían los iniciales estudios sobre crisis empresarial, como la utilización de técnicas deterministas que no permitían analizar el fracaso como un proceso continuo (Luoma y Laitinen, 1991; Catanach y Perry, 2001;

Shumway, 2001), el evidenciar problemas para distinguir el desenlace de las empresas en situación de crisis (Barniv *et al.*, 2002; Gilbert *et al.,* 1990; Poston *et al.,* 1994) o el no considerar que las situaciones de fracaso pueden entenderse en cualquier punto donde una empresa pueda tener serios o preocupantes problemas que introduzcan incertidumbre y riesgo en su futuro (Turetsky y McEwen, 2001).

En este sentido, en los últimos años, diversas investigaciones han introducido una variante sobre los modelos de predicción al considerar que los procesos de fracaso son continuos y que además no son idénticos para todas las empresas (Bardos, 2001). Trabajos como los de Laitinen (1991), Luoma y Laitinen (1991), Shumway (2001) o Laitinen (2005), introduciendo técnicas como el análisis de supervivencia, apuestan por escenarios que ya habían sido introducidos por otros autores como Argenti (1976): el fracaso tiene distintas fases y distintos patrones de fases. El estado de fracaso es idéntico para todas las empresas que fracasan, pero su evolución es diferente, y las variables explicativas comúnmente asociadas al proceso de fracaso varían dependiendo de la fase en la que la empresa se encuentre (Laitinen, 1993; Laitinen, 2005). Este planteamiento puede ser encontrado en otros estudios que han "catalogado" a las empresas en función del proceso que deriva en un desenlace determinado (Laitinen, 1991; Bardos, 1995; Abad *et al.*, 2007; Ooghe y Prijcker, 2008). La relación síntomas-fracaso ya no es directa, sino que el desenlace se hace depender de variables externas (entorno económico) e internas o estructurales (decisiones de gestión). En este sentido, algunos autores han sugerido, tal y como ya recogieron Bruno *et al.* (1987), que las empresas pequeñas parecen fracasar por problemas financieros mientras que las grandes empresas lo hacen por problemas asociados a la gestión.

Los síntomas que catalogan a una empresa en crisis son comunes en la mayor parte de los trabajos que han investigado sobre este tema. Hay determinadas variables que se repiten de forma significativa y que resultan evidentes a la hora de que la información económica y financiera contenida en los Estados Financieros refleje problemas en la salud de la empresa. Entre estas variables destacan Resultados negativos (en algunos casos se concretaba en Resultados de explotación), Fondo de Maniobra negativo, Cash-Flow negativo (en algunos casos se diferenciaba con el Cash-Flow de las operaciones), Patrimonio neto negativo o Pérdidas acumuladas en ejercicios

anteriores (Raghunadan y Rama, 1995; Geiger *et al.,* 1995, Mutcher y Williams, 1990; Mutchler, 1985). Ponemon y Shick (1991) realizan una selección inversa. Es decir, seleccionan aquellas que no tenían problemas cuando con dos o más años presentaban resultados positivos, suficiente Activo Corriente, Cash Flow de las operaciones positivo y positivos ratios de endeudamiento. Poston *et al.* (1994) utilizan también para clasificar empresas en crisis aquellas que tienen un ratio de solvencia menor a la unidad. Martin (2000) asocia como criterio de empresas que pueden encontrarse en una situación de dificultad (y ser susceptibles de recibir una calificación de gestión continuada en su auditoría), el criterio de rentabilidad de las acciones porque reacciona tanto a las características financieras como no financieras. Otros criterios seguidos son también que una empresa manifieste unos Beneficios de explotación menores que sus gastos financieros (Jostarndt, 2006). En la mayor parte de los casos la existencia de una situación de crisis era considerada cuando se combinaban varios síntomas de los anteriores, no obstante, en algunos trabajos como Mutchler, (1985), Mutchler y Williams (1990) o Raghunadan y Rama (1995), una empresa se consideraba en situación problemática al cumplir tan sólo alguno de ellos. Junto con los criterios anteriores también es usual utilizar la existencia de un informe de auditoría calificado en gestión continuada para catalogar a una empresas en crisis (Ponemon y Shick, 1991; Raghunadan y Rama, 1995) o para clasificarla a efectos de otorgar mayor evidencia a la situación por la que atraviesa (Mutcher y Williams, 1990).

Las variables seleccionadas anteriormente son simplemente síntomas de que una situación de crisis se produce. La cuestión diferencial son los factores latentes (Catanach y Perry, 2001) que subyacen a los mismos, es decir, las debilidades y deficiencias en la gestión de la empresa que se traducen en esa incapacidad desde el punto de vista económico o financiero. En este sentido, trabajos como los de Geiger *et al.* (1995) agrupan a las empresas quebradas en tres tipos dependiendo de sintomatologías asociadas a Cash Flow negativo de forma recurrente; pérdidas de explotación recurrentes o Fondo de maniobra negativo, asumiendo así que pueden existir estructuras diferentes subyacentes en los procesos de crisis. Esta distinción entre síntomas y causas es fácilmente visible también en los distintos trabajos que han investigado sobre crisis empresarial, cuando se han introducido como variables

explicativas de los modelos determinados ratios o variables como traducción numérica de las deficiencias. Neophytou y Mar Molinero (2005) hablan en este sentido de variables latentes que describen varios aspectos de una empresa; y con bastante consenso se hace referencia a dimensiones como: liquidez, riesgo, rentabilidad, calidad de los activos, liquidez, actividad o gestión.

El modelo de recuperación incorpora varias variables que pudieran ser catalogadas como capacitadores del distress. Estas variables son:

- la severidad de la situación de partida
- la capacidad de reacción frente a una situación de dificultades
- el tamaño de la empresa
- la actuación durante el periodo de crisis
- el estado post crisis.

En consecuencia, la estado post crisis evalúa la calidad del bienestar de las empresas considerando el riesgo de re-entrada en distress y discrimina los buenos performers de los mejores performers en la gestión de crisis. En un contexto de crisis, una empresa con buena performance sólo logra el objetivo (es decir salir de la situación de crisis) mientras que una empresa con la mejor performance se encuentra en un nuevo escenario sano, reduciendo al mínimo la probabilidad de volver a entrar en una situación de dificultad.

El enfoque de la Figura 1.1 encierra una cuestión principal: ¿Cuando una empresa se enfrenta a una situación de crisis, puede el deterioro evolutivo siempre ser revertido por medio de ciertas acciones estratégicas o el éxito puede estar afectado por los puntos fuertes/débiles de la estructura de la empresa? Utilizando un razonamiento metafórico, cuando una empresa se enfrenta a una enfermedad como dificultades financieras, ¿podría volver a un estado saludable sólo por medio de acciones terapéuticas o la cura depende de la ausencia de algunas características estructurales?

CAPITULO II. Patrones estructurales y evolutivos de las empresas en situación de crisis

En este capítulo se analizan las similitudes y diferencias entre las características estructurales de un conjunto de 526 empresas que se enfrentan a un cierto grado de dificultades financieras debido a la existencia de cierto grupo de síntomas generalmente aceptados. Este análisis puede ser visto a través de los cambios de situación de las empresas 10 años más tarde, según algunos de los indicadores del proceso de "gestión" de esta situación de crisis. Para valorar el proceso de "gestión de la crisis" se consideran tres dimensiones de análisis: a) situación económica y financiera en el primer año del análisis, b) capacidad de reacción y c) fortaleza de la situación. A los efectos del análisis, hemos optado por utilizar el escalamiento multidimensional (MDS), que proporciona una representación visual de la estructura de proximidades (es decir, las similitudes o distancias) entre un conjunto de objetos. Esta técnica también ha sido utilizada en otros trabajos que han estudiado el fracaso (Mar Molinero y Ezzamel, 1991; Mar Molinero y Cerrano-Cinca, 2001; Neophytou y Mar Molinero, 2004 y 2005). Esta metodología nos permite analizar los perfiles de las empresas en una situación específica de crisis financiera sin ninguna hipótesis a priori sobre las relaciones causales que pueden ser usados como predictores de la situación al final del período analizado. El objetivo final es explorar la posibilidad de la existencia de este vínculo a través del análisis del mapa de las empresas en dificultades y los cambios en sus posiciones, de acuerdo con su estructura económica y financiera y su situación inicial.

Teniendo en cuenta algunas de las ideas expuestas en el Capítulo I con respecto a los procesos evolutivos relacionados con las empresas en crisis se espera y conseguimos que:

1. Existen diferencias estructurales entre las empresas que presentan diferentes síntomas de crisis. Si el fracaso es un proceso continuo y, a veces degenerativo, podemos esperar que las empresas con graves síntomas de crisis están colocadas claramente separadas de aquellas que presentan una débil crisis, de acuerdo con las estructuras de sus variables.

2. El resultado, o la posición alcanzada por una empresa tras superar un período de crisis, es independiente de la condición de partida. Al final del período de análisis, las empresas estarán en una nueva posición de "crisis" o de "seguridad" en función de

    a. Las características estructurales, a pesar de los síntomas que mostraron al comienzo del análisis. Autores como Ooghe y Prijcker (2008) afirman que la diferencia entre los procesos de fracaso depende de los defectos de la situación inicial.

    b. El esfuerzo en la "gestión" de la crisis. Las empresas con un mayor esfuerzo en la actividad operativa pueden mejorar su situación a pesar de los síntomas iniciales que presentaban. En este sentido, Kahl (2001) y Routledge y Gadenne (2000) afirman que "la rentabilidad operativa" refleja el esfuerzo realizado durante una situación de crisis y determina el éxito del proceso evolutivo hacia la salida de esa situación.

CAPITULO III. Superar un declive en empresas con dificultades financieras. Factores determinantes del proceso de recuperación.

Los resultados del capítulo anterior han demostrado que la situación inicial de crisis de las empresas puede influir en el proceso de evolución. Ciertas situaciones de crisis débil parecen seguir una evolución natural en un sentido positivo, de tal manera que las empresas consiguen mantener sus circunstancias sin mayor esfuerzo, que posteriormente las colocan en un escenario seguro. En la misma línea, algunas situaciones de crisis fuerte parecen seguir un proceso degenerativo, manteniendo su posición inicial deficiente o incluso empeorando la situación. Sin embargo, los resultados también prueban que, en muchos casos, las empresas con diferentes síntomas de crisis comparten características estructurales que las hacen evolucionar en la misma dirección.

El modelo expuesto en el Capítulo I proponía que el estado post distress es una consecuencia de la gravedad inicial de la crisis, así como de ciertas características que

permiten actuar como herramienta de mejora o reductores de la resolución final de un proceso de crisis. Sin embargo, el modelo también incluye otra serie de factores, tales como las diferentes estrategias que pueden llevar una empresa a salida con éxito de la situación de crisis, o las cuestiones relacionadas con el comportamiento durante el proceso de crisis.

La evidencia recogida en los estudios expuestos en el capítulo I, en relación con el hecho de que las empresas que resuelven su situación de crisis muestran una alta rentabilidad durante el proceso de recuperación también se observa en los resultados obtenidos en el capítulo II. El retorno a un escenario saludable se asocia con la rentabilidad. Este asunto parece ser la garantía para mantener el nuevo estado.

El estado post distress evalúa no sólo si una empresa resuelve la crisis inicial, sino también la calidad del bienestar considerando el riesgo de que vuelva a entrar en crisis. Esta línea permite considerar un indicador de Fitness, que discrimina entre las empresas con buena performance de las empresas con mejor performance, las cuales se encuentran en un nuevo escenario saludable reduciendo al mínimo la probabilidad de volver a entrar en distress.

Este enfoque nos permite testar el modelo de recuperación de las empresas que se enfrentan a una situación de crisis cuando la condición del post crisis podría ser influida por variables específicas relacionadas con características estructurales iniciales de una empresa, así como de las estrategias empleadas durante el distress.

Continuando con los resultados exploratorios de los patrones evolutivos análisis financieros en una situación de peligro, y de conformidad con el modelo de recuperación expuesta en el capítulo I, testamos las siguientes hipótesis:

- *H1: El grado de severidad de las empresas en dificultades financieras está probablemente asociado con el estado post distress.*

- *H2: La capacidad de reacción de las empresas en distress se relaciona positivamente con una sana posición final tras el proceso de recuperación.*

- H3: El rendimiento durante el distress está positivamente relacionad con el bienestar del estado post distress.

- H4: Las estrategias de recorte tienen una influencia positiva en el desenlace de una situación de crisis.

- H5: El tamaño de las empresas en dificultades financieras está relacionada con la posición final después del proceso de recuperación.

Para testar las hipótesis propuestas, se utiliza la misma muestra de 526 empresas de Estados Unidos, identificadas como empresas que atraviesan una situación de crisis. Teniendo en cuenta el escenario más amplio de Poston *et al.* (1994), nuestro análisis se realizará durante los años 1993 hasta el año 2000. La economía de los EE.UU. ha experimentado una expansión económica en el período analizado. Según la Oficina Nacional de Investigación Económica (2001), un pico en la actividad de la empresa se produjo en la economía de los Estados Unidos en marzo de 2001. Un pico marca el final de la expansión y el inicio de una recesión. Por lo tanto, el año 2001 estuvo marcado por los acontecimientos tales como la burbuja Puntocom, la caída del Mercado de Valores, la pérdida de la confianza de los inversores en el Mercado de Valores o la aparición de fraudes corporativos y de gobierno corporativo. Los atentados del 11 de septiembre de 2001 también pueden haber sido un factor importante en el deterioro de la economía hacia una recesión. Los datos financieros para los años después de 2000 serían, en mayor o menor grado, influenciados por todos estos factores externos. Detener el análisis en el año 2000 podría ser más apropiado para la estabilidad del mismo.

Los resultados obtenidos sugieren que la posición final del distress puede ser explicada por algunas de las variables y en determinadas circunstancias. En primer lugar, la hipótesis de que la capacidad de reacción de las empresas en crisis se relaciona positivamente con el estado final después de la recuperación no ha sido confirmada. Sin embargo, los resultados muestran que la interpretación es diferente si consideramos el modelo global o si se analizan las industrias por separado.

En segundo lugar, y en contraste con otras investigaciones, el grado de severidad no determina un resultado negativo de la situación negativa o capacidad de

supervivencia en las condiciones adecuadas. De acuerdo con los resultados sobre la capacidad de reacción, es la capacidad estructural subyacente, y no los síntomas de distress, que determinan la forma en la que la empresa enfrenta la crítica situación por la que atraviesa.

Cuando se examina la diferencia entre los tiempos de recuperación (escenario de 3 y 8 años), puede considerarse que el largo plazo permite un resultado eficaz de una situación de crisis. En cuanto a la rentabilidad, a pesar de que es un factor importante ya que representa una situación de bajo riesgo, los resultados no fueron suficientes para afirmar que una continua performance rentable es una condición necesaria para superar una situación difícil.

Como era de esperar, el tamaño de la empresa influye en la evolución del distress. Las empresas grandes tienden a presentar una situación mejor y un menor riesgo después de la situación inicial de crisis. Sin embargo, en cuanto a la influencia de las estrategias de recorte, no hay evidencia suficiente para concluir que tiene una influencia positiva en los resultados de una situación de distress. Por último, la industria en la que una empresa está desarrollando su actividad tiene una influencia en el resultado de una situación difícil. Algunas características específicas del sector pueden contribuir o inhibir la evolución del proceso de recuperación y, como consecuencia en los resultados de las estrategias de las empresas para solucionar los problemas.

CAPITULO IV. Estrategias de RSC en empresas que se enfrentan a un declive

En los últimos años, "revolver" una situación de crisis ha sido de mucho interés en muchos trabajos de investigación cuyo objetivo es identificar los patrones que diferencian las compañías en situación de crisis que son capaces de resolver sus problemas con las que no lo consiguen. Estos estudios muestran que existen diferentes estrategias que pueden dirigir con éxito una empresa hacia la salida de la situación de crisis (Robbins y Pearce, 1992; Pearce y Robbins, 1993, 1994; Barker y Duhaime, 1997; Cascio *et al.*, 1997; Morris *et al*., 1999).

Por otra parte, también se han producido muchos estudios relacionados con la RSC y los resultados económicos y financieros de las empresas. Algunos de ellos han sido prueba de la asociación positiva entre las acciones de RSC y los resultados financieros, pero otros han encontrado pruebas de que esta relación era negativa o neutral (Aupperle *et al.,* 1985; Davidson y Worrell, 1992; Brown y Perry, 1994; Waddock y Graves, 1997; Griffin y Mahon, 1997; Dowell *et al.,* 2000; Hillman y Keim, 2001; Orlizky *et al.,* 2003; Brammer y Millington, 2008; Nelling y Webb, 2009; Jong-Seo *et al.,* 2010; Peters y Mullen, 2009; Mishra y Suar, 2010; Byus *et al.* 2010). Murphy (2002) realiza una revisión exhaustiva de los estudios que han analizado la relación entre comportamiento responsable y los resultados financieros, de lo que se concluye que existe una base sólida que demuestra una relación positiva entre la conducta ambiental responsable y un sólido rendimiento financiero. En cuanto a la conducta social, Margolis y Walsh (2001) afirman que la relación positiva con el desempeño financiero no puede asumir ni para todas las empresas ni para todo tipo de actividades sociales.

Los diferentes resultados de la investigación que estudian la RSC y la performance corporativa hacen posible afirmar que el comportamiento responsable no afecta negativamente a los resultados de una empresa pero no hay pruebas explícitas sobre el conseguimiento de resultados anormales. Como consecuencia de ello, aunque hay amplia evidencia que pruebe que la responsabilidad genera resultados positivos para las empresas, no hay una prueba irrefutable de una relación de causa y efecto (Schadewitz y Niskala, 2010). Por otro lado, la relación no tiene que ser necesariamente de la RSC sobre el rendimiento, sino también es plausible que la rentabilidad afecte a la RSC o que ambas situaciones pueden ocurrir (Devinney, 2009). En este sentido, algunos estudios afirman rendimiento financiero histórico de la empresa contribuye a las inversiones actuales en responsabilidad social, según la relación de causalidad entre ambos términos (Hillman y Keim, 2001; Xueming y Bhattacharya, 2006). Este enfoque se basa en considerar que los buenos resultados financieros permiten reorientar recursos excesivos a las actividades sociales. Esto significa que un buen rendimiento financiero deriva en prácticas socialmente responsables, por lo tanto, influyendo en los perfiles de RSC.

Sin embargo, si invertir en comportamiento responsable produce efectos positivos sobre el desempeño financiero futuro, el mercado debe evaluar este comportamiento para que los inversores recompensen el valor que se atribuye a las empresas socialmente responsables. De esta manera, las empresas que satisfacen a los stakeholders recibirán su apoyo. Esta opinión ha abierto una línea de investigación que trata de conectar las acciones de RSC con el valor de mercado de las empresas. A pesar de que estos estudios no son concluyentes, Statman *et al.* (2006) afirman que, aunque no exista una mayor valoración para ser socialmente responsable, no hay una penalización asociada a estos comportamientos. Sin embargo, una amplia gama de estudios han demostrado que las empresas socialmente responsables se valoran positivamente por el mercado (Cormier y Magnan, 1997; Graves y Waddock, 2000; Konar y Cohen, 2001; Orlizky *et al.,* 2003; Schadewitz y Niskala, 2010; Semenova *et al.,* 2010; Lo y Sheu, 2007). La inversión en comportamientos responsables puede ser entendida como un "producto" que se ofrece a los inversores, algunos de los cuales están dispuestos a comprarlo a pesar de que pueda suponer una reducción en el valor actual de sus flujos de efectivo u obtener menos beneficios en comparación con las empresas no responsables (Mackey *et al.,* 2007).

Incorporar acciones de RSC en un proceso de recuperación.

Una empresa que se enfrenta a una situación de dificultades financieras debe adoptar una serie de estrategias específicas con el fin de volver a un escenario saludable (Robbins y Pearce, 1992; Pearce y Robbins, 1993 y 1994; Barker y Duhaime, 1997; Castrogiovanni y Burton, 2000; Smith y Graves, 2005; Pretorius, 2008). En una fase de declive, y bajo la visión de una recuperación, tres aspectos son fundamentales: i) preservar la confianza y el apoyo de los accionistas; ii) mejorar la rentabilidad actuando sobre las ganancias; y iii) atraer fondos para el corto y mediano plazo en los casos en que la empresa presenta debilidades de cash flow o financieras. Es en esta zona, donde la RSC puede jugar un papel clave como estrategia a fin de apoyar un proceso de recuperación. En este sentido, Hernández-Murillo y Martinek (2009) afirman que ciertas acciones enmarcadas como comportamiento responsable pueden ser interesantes para las empresas porque pueden crear oportunidades para generar beneficios económicos adicionales por medio de los cuales un mal rendimiento económico puede restaurarse. Entre esos beneficios, los autores enumeran una mejor reputación, la

generación de beneficios por la diversidad de productos o la posibilidad de obtener una prima para los productos, de tal manera que se pueden convertir en otros beneficios en el futuro. Heal (2005) afirma que las acciones sociales y ambientales pueden aumentar los beneficios a largo plazo a través de una reducción en los costes de conflictos de intereses con la empresa, la reducción de los costes, la productividad de los empleados, y el valor de la marca que hace la empresa más atractiva para los inversores. Otras posibles ventajas podrían ser una mejor manera de obtener recursos, el aumento de la demanda de productos o una reducción de los costes del proceso de producción (Waddock y Graves, 1997; Sen y Bhattacharya, 2001; Konar y Cohen, 2001).

Las empresas que se enfrentan a una situación de dificultades financieras transmiten riesgos para los inversionistas, los cuales serán prudentes en el momento de aportar fondos a la empresa. Las acciones de RSC podrían ayudar a mitigar los riesgos financieros percibidos modificando las expectativas futuras y la imagen de la empresa. Los gerentes de empresas que atraviesan una situación de crisis en un momento determinado de tiempo, pueden tener un incentivo para invertir en acciones de responsabilidad social entre sus estrategias de recuperación con el fin de: i) complementar estrategias de eficiencia orientadas hacia la rentabilidad de la inversión; ii) reducir el coste de algunas de las medidas destinadas a desarrollar las estrategias de reducción de costes o iii) crear expectativas favorables que mitigan los resultados financieros débiles de sus ratios financieros. Por lo tanto, existen diversas motivaciones para realizar mayores esfuerzos "en beneficio" de la comunidad, a fin de compensar los malos resultados financieros publicados. Los directivos de las empresas en una situación de distress pueden tratar de "manejar" la imagen de la precaria situación financiera través de comportamientos responsables como una reacción a un conflicto discrecional en la organización. Esta actitud es una forma de dar fuerza a su futuro, de modo que los directivos puedan difundir sus expectativas de futuro a los inversores y al mercado. Sin embargo, una vez identificada una fase decreciente, no existe, a priori, un razonamiento claro sobre la forma en la que los administradores deciden integrar la responsabilidad social en el marco de las actividades que se llevarán a cabo debido a las diferentes posibilidades de acción y los posibles efectos de tales inversiones.

Enfoque de reputación y confianza

Las acciones de RSC pueden modificar la percepción del riesgo y, de forma indirecta, influir en las posibilidades de acceso a la financiación externa, así como el coste de capital que la empresa soporta. Diversos trabajos recogen la existencia de rendimientos positivos para las empresas que invierten en comportamiento socialmente responsable a través de una mejora en el coste de capital. Feldman *et al.* (1997) encontraron que las empresas que adoptan las acciones proactivas en el ámbito de la RSC experimentan una profunda reducción del riesgo de los inversores, lo cual puede conducir a un menor coste de capital. Fortalecer la imagen corporativa, mediante el aumento de la reputación hacia los stakeholders, mitiga el riesgo de tal manera que el comportamiento responsable se convierte en una mejor tasa de descuento, lo que permite un menor coste de capital (Miles y Covin, 2000; Heal, 2005; Lee *et al.,* 2009; Cheung *et al.,* 2010; Ghoul *et al.,* 2011). Esta ventaja de coste de financiación se pone de manifiesto en estudios tales como Goss (2007) que muestra que las empresas con malos resultados de RSC pagan un mayor coste de la deuda. Las empresas no son ajenas a esta relación dado que, como Devinney (2009) señala, junto con otros directamente implicados en el desempeño, una de las razones por las que las empresas y sus directivos están involucrados en las iniciativas de RSC es el impacto sobre el riesgo (coste de capital).

Según Godfrey *et al.* (2009), la RSC podría ofrecer un mecanismo de seguridad para las empresas con el fin de preservar sus resultados financieros. Algunas acciones de RSC crean el llamado capital moral o de buena voluntad., el cual mitiga la sanción que los stakeholders pueden realizar bajo eventos negativos. Estos autores argumentan que el capital moral no tiene ningún efecto en la generación de valor, sin embargo, preserva el valor económico de la empresa. En este sentido, las acciones de RSC condensan el efecto negativo entregando a la empresa el "beneficio de la duda".

El riesgo de responsabilidad.

En cuanto a la responsabilidad, la llamada teoría de la sanción social sostiene que las empresas están sujetas a las reclamaciones sobre aquellos comportamientos que no contribuyen al crecimiento y desarrollo de la sociedad (Devinney, 2009), en la medida en que no se están comportando dentro de las normas y las costumbres de las sociedades en las que operan. Reinhardt (1999) hace mención al riesgo de responsabilidad o daños a la reputación en el cual se debe considerar no sólo el riesgo de un evento adverso, sino también los costes asociados a las pérdidas que se producen. Las acciones responsables reducen al mínimo los costes de transacción y reducen el riesgo de conflictos jurídicos con ellos (Becchetti *et al.,* 2012). Como afirma Levine (2008), los programas de RSC garantizan el cumplimiento de las responsabilidades, gestionando el riesgo de reputación o legal al cual las empresas están expuestas en este contexto actual de necesidades de la sociedad. En este sentido, Hassel *et al*. (2005) también, afirman que la rentabilidad de la "ecologización", refiriéndose a la reducción de la contaminación del medio ambiente, reduce la futura responsabilidad ambiental.

El enfoque de vulnerabilidad económica.

El riesgo de vulnerabilidad económica está relacionado con la capacidad de una empresa para alinearse con su entorno. Las empresas sanas tienen mayor oportunidad de sobrevivir en un contexto de competencia permanente por medio de la continua adaptación al medio ambiente. Prácticas socialmente responsables permiten la mejora de competitividad de una empresa, la creación de oportunidades para generar beneficios económicos y diferenciar la empresa de sus competidores (Miles y Covin, 2000; Hernández-Murillo y Martinek, 2009). Así las empresas con buen desempeño se vuelven menos vulnerables a las situaciones adversas o a las fases de declive, lo que reduce el riesgo de no superar estas situaciones.

Buscando la mejora de los resultados es una característica de la primera etapa de las denominadas estrategias de eficiencia que son aplicadas por los gestores de las empresas que se enfrentan a dificultades y están fuertemente relacionadas con la recuperación de una situación estable (Robbins y Pearce, 1992; Campbell, 1996;

Routledge y Gadenne, 2000; Castrogiovanni y Burton, 2000; Smith y Graves, 2005). La relación positiva entre la inversión en RSC y resultados, y también entre un buen rendimiento y recuperación después de las crisis, permiten argumentar la existencia de incentivos para implementar acciones de responsabilidad social, entre las estrategias adoptadas por los directivos de las empresas que se enfrentan a dificultades a fin de iniciar un proceso de recuperación.

El enfoque de reducción de costes.

La inexistencia de un consenso sobre la investigación enfocada en la relación entre el rendimiento financiero y comportamiento social de las empresas permite evaluar la existencia de una relación bidireccional entre esos dos conceptos. De este modo, un incremento en desempeño social también puede ser interpretado como una actividad discrecional que se financia cuando la empresa tiene un exceso de fondos, es decir, un buen rendimiento financiero (Hillman y Keim, 2001). Adicionalmente, la teoría de recursos escasos (Miles y Covin, 2000) sostiene que ciertos comportamientos ambientales se implementan como consecuencia de buenos resultados financieros, lo que permite realizar inversiones adicionales asignando fondos, así como tomando las decisiones de inversión discrecional.

Las inversiones en el ámbito de la RSC también se han interpretado como un coste a expensas del valor de los accionistas, especialmente en los procesos relativos a ciertas dimensiones de la RSC. Estas dimensiones implican un considerable gasto económico con una gran repercusión en la actual cuenta de pérdidas y ganancias debido a la dificultad de cuantificarlas como actuaciones que generan beneficios futuros. Esta hipótesis está en línea con los resultados obtenidos por Lo y Sheu (2007) que indican que los inversores pueden ser reacios a las acciones de RSC de una empresa si consideran que estas acciones aumentan los costes operacionales y de producción.

El argumento anterior tiene sentido si consideramos que, como indican Hassel *et al.* (2005), que el mercado es de corto plazo y los inversores no consideran el impacto de largo plazo en sus decisiones. Así, según el enfoque de amenaza de los costes, las empresas con dificultades financieras, tienden a disminuir su inversión en determinadas

dimensiones de la RSC que los accionistas consideran como un gasto. Los directivos de estas empresas prefieren a "redirigir" los ingresos de la empresa en un corto intervalo de tiempo, reduciendo los costes y gastos que no producen beneficios inmediatos. Esta evaluación se basa en la paradoja de considerar acciones responsables como un coste o como una inversión y es más evidente en dimensiones relacionadas con la responsabilidad ambiental. Esta paradoja de la responsabilidad medioambiental - una oportunidad reduciendo costes futuros o la amenaza reduciendo los gastos corrientes, permite tener en cuenta que las estrategias seguidas por los gerentes de las empresas en dificultades no presentan una clara dirección a priori en esta dimensión. Siguiente Waddock y Graves (1997), podemos suponer:

- Asociación negativa: acciones vinculadas con el medio ambiente causan, por lo general, importantes costes que pueden ser difícilmente asequible para empresas en dificultades financieras. Las empresas inmersas en dificultades financieras, tienden a reducir este tipo de inversión.

- Asociación positiva: la falta de inversión en acciones de medio ambiente causa responsabilidad jurídica con sus costes asociados. Algunos de ellos están implícitos, como la percepción de los accionistas y futuros inversores, y a veces pueden superar los costes explícitos.

Sobre la base de los anteriores argumentos, nuestro propósito es analizar en qué medida las empresas que se enfrentan a situaciones de riesgo financiero incorporan la inversión en conductas responsables entre sus estrategias como un mecanismo para crear expectativas favorables para mitigar la debilitada imagen de algunos indicadores financieros. Vamos a estudiar los diferentes modelos de implementación de estas estrategias que están condicionadas por el grado de dificultades financieras y de las debilidades de esta situación, de modo que podamos mostrar los mecanismos de selección entre las distintas dimensiones que forman el constructo RSC en función de: i) los costes asociados a estas conductas responsables; y/o ii) el período en que se supone que debe obtener los rendimientos o beneficios de la inversión en RSC.

Es necesario considerar que la diferencia en la percepción de estrategias de RSC (costo amenaza u oportunidad de inversión) está asociado con el nivel o etapa de la crisis de la compañía o situación de distress. Si el origen de la crisis es una situación de desequilibrio económico hay una mayor tendencia a considerar las prácticas de RSC como una amenaza debido al efecto que tienen sobre los costes del ejercicio, ergo, se espera una relación negativa en este tipo de empresas. Por el contrario, si el origen de la crisis de la empresa es un desequilibrio financiero, es razonable pensar en una asociación positiva de la RSC como una forma de mejorar la confianza de los inversores y acreedores en el futuro.

Por último, centrándonos en las empresas con problemas financieros, se debe tener en cuenta la fase del distress en la que la empresa se encuentra inmersa. Las empresas que enfrentan una grave situación de crisis, derivada por muchos factores, es más probable que centren su prioridad en la supervivencia a corto plazo y cualquier iniciativa relacionada con las prácticas de RSC sería considerado como un coste negativo con impacto inmediato en el objetivo de la supervivencia.

CAPITULO V. Patrones en acciones de RSC para mitigar una imagen financiera débil.

El objetivo de este capítulo es evidenciar si las empresas que se enfrentan a situaciones de crisis incorporan la inversión en conductas responsables entre sus estrategias como un mecanismo para crear expectativas favorables que mitigan la debilitada imagen de algunos indicadores financieros. Para ello, vamos a realizar un análisis de las similitudes o diferencias en la actitud de las empresas hacia las acciones de RSE a fin de determinar si existe una relación entre esta actitud y la situación económico-financiera de la empresa.

El análisis de las similitudes y las diferencias en los comportamientos de la RSC se realiza mediante un conjunto de 392 las empresas clasificadas, en función de su estructura financiera, en empresas sanas y en crisis. El desempeño en RSC se calcula utilizando la calificación alcanzada por las empresas en la base de datos KLD, considerando las debilidades y las fortalezas obtenidas en las siete dimensiones de

KLD: comunidad, gobierno corporativo, diversidad, empleados, medio ambiente, derechos humanos y el producto. De esta evaluación, hemos optado por utilizar escalamiento multidimensional (MDS), que proporciona una representación visual de los patrones de proximidades (es decir, las similitudes o distancias) entre un conjunto de observaciones. Este estudio no empieza con una relación directa entre la crisis de empresa y algunas estrategias de RSC. La metodología MDS nos permite analizar los perfiles de las empresas en una determinada situación de dificultades financieras sin ninguna hipótesis a priori sobre las relaciones causales que se podrían utilizar como predictores del desempeño en RSC.

Teniendo en cuenta las argumentaciones del Capítulo IV, en relación con los incentivos de los administradores de las empresas que enfrentan algunos rey situación de dificultades financieras para invertir en las prácticas de RSE y de acuerdo a las características de la metodología que se va a utilizar, es de esperar que las posiciones de las empresas analizadas en el grafico puedan verificar lo siguiente:

- La inexistencia de diferencias estructurales de RSC entre las empresas que presentan síntomas de una crisis y las sanas. Si los administradores de las empresas en un proceso de declive usan los comportamientos responsables como una estrategia para "mitigar" la débil imagen que se manifiesta por sus datos económicos y financieros, suponemos que las posiciones de las empresas en las variables asociadas a la evaluación de su desempeño en el ámbito de la RSC es independiente de su estructura financiera.

Sin embargo, esperamos que el grado de severidad de la crisis vaya a marcar las diferencias en la actitud de la empresa hacia la responsabilidad social de las empresas y las inversiones en comportamientos responsables. De esta manera, la posición alcanzada por una empresa no es independiente de la condición de partida.

- La existencia de diferencias estructurales en el ámbito de las debilidades de RSC entre las empresas que muestran crisis y las sanas, teniendo en cuenta los argumentos del enfoque Coste Actual.

- La existencia de diferencias estructurales en comportamientos de RSC según las debilidades financieras de una empresa. Teniendo en cuenta el enfoque amenaza-

oportunidad, esperamos que exista una diferencia de posicionamiento entre las empresas que presenten deficiencias económicas y a las empresas que muestran debilidades financieras.

El comportamiento socialmente responsable se mide mediante la calificación de las empresas en cada una de las dimensiones de la base de datos Kinder, y Domini Lyndenberg (KLD). KLD es una herramienta ampliamente aceptada para medir las la responsabilidad social de empresas de Estados Unidos (Wood y Jones, 1995; Ruf *et al.*, 2001) ya que refleja realmente las acciones y comportamientos de la RSC y no se basa únicamente en la información publicada por las empresas (Iannou y Serafeim, 2010). KLD se utiliza en un gran número de estudios como Graves y Waddock (1994), Waddock y Graves (1997), Hillman y Keim (2001), Ruf *et al.* (2001), Siegel y Vitalino (2006), Hull y Rothenberg (2008), Kacperczyk (2009), Peters y Mullen (2009), Ioannou y Serafeim (2010), Melo y Galán (2010), Melo y Garrido-Morgado (2012), Bear *et al*. (2010), Boesso y Michelón (2010).

KLD evalúa la RSC considerando 7 dimensiones que representan el desempeño ambiental, social y de buen gobierno de las empresas (Comunidad, gobierno corporativo, diversidad, relaciones con los empleados, derechos humanos, el medio ambiente y producto). Cada dimensión se mide por medio de una serie de indicadores que representan las acciones positivas (como fortalezas) y las acciones negativas (como debilidades) con un sistema binario (0, ausencia; 1; presencia).

Llevamos a cabo el análisis teniendo en cuenta la puntuación global en fortalezas/debilidades, agrupando las evaluaciones individuales obtenidas en cada una de las dimensiones, así como la puntuación individual en cada una de estas dimensiones. Por lo tanto, hemos seguido el criterio utilizado por Griffin y Mahon (1997), quienes creen que la creación de un índice único que valora la fortaleza/debilidad de una empresa en una sola variable puede disimular las dimensiones individuales que son importantes para una empresa o industria y, también, el esfuerzo efectivo que una empresa realiza en cada uno de ellos. Sin embargo, a pesar de defender el enfoque, la variable de evaluación global se incluye con el fin de analizar en qué medida puede ser representativa de las posibles diferencias entre las empresas.

Los resultados evidencian la inexistencia de diferencias estructurales en RSC entre las empresas que presentan síntomas de una crisis y las empresas sanas, con respecto a los aspectos considerados como fortalezas en el ámbito de la RSC. En este sentido, la actitud responsable es inherente a la filosofía de la gestión y es independiente de la situación financiera, o los directivos de las empresas en un proceso de declive tienen, en efecto, una estrategia para "suavizar" la imagen que se muestra por sus débiles datos económicos y financieros por medio de un comportamiento responsable.

Por otra parte, hemos obtenido evidencia de que existen diferencias en la valoración de las debilidades. Las empresas en crisis están peor valoradas en cuanto a los elementos negativos que se incluyen en la KLD y esto podría ser una consecuencia de la tendencia a reducir los costes y las inversiones que pueden seguir debilitando a una ya de por sí deteriorada situación financiera. Estas empresas se caracterizan por una estrategia de RSC dirigida a invertir en conducta responsable con un alto nivel o impacto de reputación social, pero con un bajo coste de inversión, tal como es la diversidad de género.

CAPITULO VI. La inversión en Responsabilidad Social como estrategia para la recuperación de una crisis.

En el capítulo anterior hemos obtenido evidencia de que existen características estructurales subyacentes que marcan las diferencias y similitudes entre las empresas teniendo en cuenta el hecho de que tienen que hacer frente a una situación financiera precaria. Por medio del mapa consensual obtenida por MDS, que permite representar, al mismo tiempo, los individuos y las variables que se utilizan en el análisis, no podemos determinar si existen grupos de empresas que comparten el mismo perfil específico. Al mismo tiempo, la información disponible sobre las variables de RSE individualmente consideradas impidió su proyección en el mismo mapa con el fin de determinar las pautas de una manera más efectiva.

El presente capítulo se orienta hacia un análisis de los perfiles de RSC de las empresas de los EE.UU. con el fin de identificar los posibles clústeres para determinar si estos grupos son o podrían ser vinculados a la existencia de una situación de distress.

Al igual que en el capítulo anterior, empezamos con la existencia de un incentivo para la modificación del comportamiento responsable de las empresas ante una situación de crisis. Con respecto al capítulo anterior, las diferencias fundamentales consisten en:

- Una definición más precisa de las empresas analizadas.
  - ✓ Nos centramos en el análisis del segundo bienio dado que los resultados mostraron un cambio en la actitud de las empresas, independientemente de sus condiciones de crisis, a partir de 2001, y con una diferencia significativa entre los valores obtenidos en el año 2000 y en 2001. El hecho de que este cambio podría estar motivado por la incorporación en la base KLD de las 1000 empresas más grandes de EE. UU. en el año 2001, nos permite considerar más razonables tomar este año como referencia básica.
  - ✓ Realizamos un filtro adicional, de manera que en el año 2000 ninguna empresa presentaba síntomas de distress. De esta manera, nos aseguramos de que la diferenciación entre las empresas sanas y con problemas en efecto se produjo en el año t.

- Para la identificación del clúster, se seleccionó la metodología de los conglomerados en dos etapas que permite descubrir agrupaciones naturales de los individuos que son difíciles de observar en forma directa. Al mismo tiempo, permite obtener de manera automática el número óptimo de clústeres.

Para este objetivo, analizamos los patrones de comportamiento responsable para determinar las marcas de identidad de las empresas y estudiar si los perfiles de comportamiento podrían estar relacionados con la existencia de una situación de crisis.

El análisis se realiza sobre la valoración de comportamientos responsables de las 1000 empresas más capitalizadas en Estados Unidos en el año 2001, según la base de datos KLD. La información de la base de datos Thompson fue utilizada en la clasificación de las empresas en crisis, basándonos en las características económicas y financieras y los síntomas descritos en los capítulos anteriores. La coincidencia de las

dos bases dio como resultado 392 empresas. A fin de evitar influencias arrastradas por años anteriores, sólo las empresas que muestran una situación sana en el año 2000 fueron seleccionados de manera que la muestra final se compone de 248 empresas. De esta manera, nos aseguramos de que las empresas clasificadas como en crisis en el año 2001 vinieron de, al menos, un año de estabilidad.

La metodología de clústeres en dos etapas nos permitió explorar la posible existencia de aglomeraciones naturales de empresas, sobre la base de sus comportamientos responsables, que se caracteriza por la presencia o no de dificultades problemas. Los resultados muestran que la variable crisis, de hecho, así como el tipo y la gravedad de la misma, discriminan las empresas con actividades similares proactivas y/o reactivas. Además, estos patrones comunes son generalmente más destacados un año después de que la empresa ha identificado ciertos deteriorados indicadores económicos y financieros.

Las empresas en crisis obtienen una mayor valoración de los comportamientos calificados como positivos, pero también en las dimensiones de las debilidades comparadas con las empresas sanas. Este aumento de las valoraciones de las fortalezas sigue el mismo patrón que la observada para las empresas sanas, por lo que no puede ser derivado de que, en general, la apuesta en la responsabilidad es una consecuencia frente a la situación de declive.

Los comportamientos de las empresas en crisis han resultado estadísticamente diferentes, con respecto a las empresas sanas, en las acciones calificadas en sentido negativo. Sin embargo, el hecho de que estas diferencias se producen en los dos años del análisis no permite afirmar la existencia de una asociación entre la crisis y las acciones responsables.

CAPITULO VII. ¿Cambian las empresas su comportamiento en RSC cuando se manifiestan señales de crisis?

Los capítulos anteriores demuestran ciertos cambios en la actitud de las empresas frente a una situación financiera precaria, justificada por la existencia de incentivos para

los administradores para mitigar la débil imagen dada por la cuenta de resultados de la empresa. En algunos casos, el análisis sólo era exploratorio, tales como escalamiento multidimensional, y no empieza de una relación causal entre las variables. Sin embargo, los resultados obtenidos son una base útil para posteriormente proponer estas relaciones. Por otra parte, el análisis se realizó durante un año específico, siendo los primeros años de la década 2000, en coincidencia con el aumento en el número de empresas que constituyen la base de datos KLD. Este aumento en el número de empresas nos hace pensar que en los años después, las empresas se preocupan más por su valoración de RSC en esta base de datos. De esta manera, la inversión en acciones de responsabilidad puede ser considerada como un mecanismo para "ajustar" su imagen responsable hacia la sociedad.

En este capítulo, ampliamos el período de análisis de 2000 a 2007, lo que permite determinar en qué medida las evidencias obtenidas por un período de tiempo específico podría ocurrir en un período de tiempo continuo. De esta manera, mantenemos la cuestión básica: ¿Puede el comportamiento responsable actuar como un factor de mitigación de las empresas cuando cierta situación de dificultades financieras tiene lugar?

Considerando el enfoque de la disminución de la percepción del riesgo, si los inversores son cautelosos en la presencia de los riesgos financieros de una empresa, los factores atenuantes de una a priori poco atractiva empresa para los inversores están determinados por los posibles efectos que una inversión en RSC puede tener sobre el desempeño de la empresa (Orlitzky *et al.,* 2003). Se podría esperar que los gerentes de las empresas en dificultades financieras pudieran estar incentivados a realizar un mayor esfuerzo en el ámbito de determinados comportamientos de la RSC con el fin de mitigar los malos resultados financieros, para garantizar la confianza y el apoyo de los stakeholders cuando la supervivencia de la empresa podría estar comprometida. Basado en el planteamiento anterior, proponemos la siguiente hipótesis general:

- *H1: a pesar de los costes asociados, las empresas en distress tienden a invertir, o mantener su inversión en acciones de RSC con el fin de compensar su débil imagen financiera.*

En particular, derivando de esta primera hipótesis, también vamos a testar:

- *H1.1: a pesar de los costes asociados, las empresas en distress tienden a invertir, o mantener sus inversiones en acciones que tienen una repercusión directa en la generación de beneficios, para reestablecer su delicada situación económica.*

Bajo el enfoque de reducción de costes, las inversiones en acciones de responsabilidad también pueden ser interpretadas como un coste que afecta los beneficios futuros de una empresa. En el corto plazo, la conducta responsable aumenta los costes que influyen en forma directa en los resultados financieros (Belu, 2009). Por otra parte, podrían implicar una reorientación de los recursos necesarios para otros ámbitos pertinentes de la empresa que podría afectar la viabilidad de la empresa (Hillman y Keim, 2001). Sin embargo, el coste de ser responsable afecta de forma diferente en cada una de las dimensiones del comportamiento socialmente responsable, lo que hace que sea difícil estimar el posible impacto del coste de las acciones responsables. Este es el caso de las acciones ambientales o producto que implican, en la mayoría de los casos, una inversión asociada a I+D. La selección de la inversión en la estrategia de comportamiento responsable se determinará en función de su coste/beneficio.

Frente a los rangos de coste asociados a diferentes alternativas, proponemos que:

- *H2: Empresas que presentan síntomas de distress, redirigen su desempeño en RSC, mitigando en esas líneas que implican un mayor deterioro de sus cuentas, e invierten en acciones no costosas que permitan mantener el apoyo de los stakeholders.*

Por otro lado, teniendo en cuenta los resultados obtenidos en el capítulo anterior, hemos encontrado que, entre otras cuestiones:

- En algunos casos no hubo cambios en la conducta de las empresas en responsabilidad social entre el año catalogadas como en crisis y el año después. Este hecho indica que, en algunas ocasiones, las empresas ya habían puesto en marcha un cambio de comportamiento en el año en el que se esperaba que los indicadores

financieros fueran a ser débiles. Esta afirmación tiene sentido si tenemos en cuenta que las empresas saben de antemano cómo serán sus resultados de la actividad. En este sentido, cuando se espera que indicador negativo presente una débil imagen a los accionistas y a los stakeholders, las empresas tratan de mitigar esta imagen por medio de una adecuada valoración de acciones responsables.

- Se detectaron ciertas diferencias en función del tipo de crisis, asociadas a problemas económicos o financieros. Este hecho puede ejercer una influencia sobre el tipo de acciones donde la empresa invierte. Las empresas con una debilitada cuenta de resultados tratarán de desinvertir en las acciones costosas e invertir en aquellos aspectos que podrían promover los ingresos. Por otra parte, las empresas con dificultades financieras tienden a invertir en acciones de responsabilidad a los efectos de la reputación y la imagen con el fin de minimizar el riesgo estimado de presentes y/o futuros inversores.

- Por último, el sector donde las empresas operan normalmente también puede condicionar el mantenimiento de determinados comportamientos responsables, a pesar de los costes asociados y su repercusión en la situación financiera. Es el caso de las acciones en materia de medio ambiente, que pueden ser esenciales para la supervivencia "reputacional" en ciertos sectores comprometidos con el medio ambiente, o en sectores que dependen de la innovación de producto y de las necesidades de los clientes.

Teniendo en cuenta estos argumentos, proponemos las siguientes hipótesis:

- *H3: El comportamiento de RSC del año cuando los síntomas de distress se identifican tiene una influencia positiva sobre la conducta de RSC un año después.*
- *H4: Empresas que presentan síntomas de distress, reorientan su comportamiento de RSC dependiendo de la situación económica o las debilidades financieras que definen su crisis.*
- *H5: El sector donde operan las empresas influye en la reacción del comportamiento responsable, una vez que se ha detectado una situación de crisis.*

Los resultados indican que las empresas sanas presentan cambios en todos los bloques de año analizados mientras que las empresas en crisis tienden a aumentar su valoración de debilidades o reducir la intensidad de la valoración un año después de identificar los síntomas de debilidades económicas y financieras. Sin embargo, cuando se observan por separado, estas diferencias no se producen en todas las dimensiones de la RSC. A pesar de observar cambios en las empresas con problemas, éstos se pueden generalizar como un patrón que ocurre durante todos los períodos analizados. Las empresas en crisis mantienen su inversión en RSC, así las debilidades de RSC no empeoran a pesar del deterioro de su situación.

De hecho, se observa un incremento de las acciones en dimensiones no costosas tales como la diversidad y los derechos humanos, donde las empresas en distress muestran un comportamiento diferente de las empresas sanas. Las diferencias entre los dos grupos de empresas ya aparecen durante el año en el que se producen síntomas de la crisis, por lo tanto se puede afirmar que las empresas con problemas comienzan su cambio de actitud el año en el que se sospecha que van a incurrir en problemas económicos y financieros.

CONCLUSIONES

A pesar de los resultados de los modelos de predicción del fracaso, un grupo de empresas que presentan lo que en la literatura se conoce como síntomas de distress, continúan su actividad en el mercado 10 años después de la identificación de la crisis. El hecho más sorprendente es que ninguna de las empresas identificadas en una situación de dificultades al comienzo del análisis, entró en un proceso de quiebra durante el mismo, a pesar de sus elevados valores del índice de fracaso, como es el Z-score.

Este hecho permite tener en cuenta que el fracaso es un proceso reversible y que no es necesariamente degenerativo si la empresa es capaz de lograr un esfuerzo en sus resultados económicos. En el caso de una situación de crisis débil, las empresas tienden a mostrar una evolución natural durante la "salida" y pueden resolver el problema mediante simples decisiones de "rutina". El carácter "momentáneo" de estas situaciones puede ser una de las razones por las que estas empresas terminan en una situación similar al final del período analizado.

El lado más curioso de los resultados consiste en que las empresas que inician con una grave situación de crisis, presentando valores financieros críticos, han sido capaces de resolverla. La mayoría de las empresas con similares "degeneradas" estructuras económicas y financieras están más expuestas a un proceso evolutivo-degenerativo, aún así se mantienen en el mercado a lo largo de los años. La resolución de la situación crítica fue posible gracias al importante esfuerzo logrado por las empresas en los resultados económicos, que les ha permitido no sólo resolver la situación, sino también reforzarla.

Otra razón para resolver las dificultades fue el hecho de que las empresas con dificultades compartían características estructurales comunes con las empresas que mostraron menores y más leves síntomas de crisis. Este hecho nos permite afirmar que los síntomas sólo son manifestaciones de una situación subyacente. Las deficiencias y gravedad de la situación son los factores que determinan los cambios en la situación de crisis. La severidad de la situación inicial no tiene por qué ser un factor decisivo en el

desenlace de la crisis y las empresas con dificultades financieras con una notable capacidad de reacción y/o una sólida estructura financiera evolucionan principalmente hacia una zona sana.

Una vez que la existencia de las diferencias y similitudes se identificó, el siguiente paso fue identificar la relación que pudiera existir entre algunas variables de control como el tamaño, la industria, factores macroeconómicos, etc. y la posibilidad de revertir la situación.

Comprender qué factores influyen en el éxito de superar una situación de crisis es fundamental para mejorar el proceso de toma de decisiones de los directivos. Varias investigaciones han demostrado que las cuestiones tales como la gravedad de la situación inicial o el tamaño condicionan el proceso de recuperación. Por otra parte, implementar estrategias orientadas a la eficiencia también ha resultado ser fundamental para encontrar un camino mejor. De los resultados hemos obtenido que la posición final del post-distress puede ser explicado por determinadas variables y en determinadas circunstancias.

En primer lugar, la relación entre capacidad de reacción de las empresas y del estado final depende de si se considera el modelo general o los distintos sectores.

En segundo lugar, y en contraste con otras investigaciones, el grado de severidad no determina un resultado negativo de la situación o una capacidad negativa de supervivencia en las condiciones adecuadas. De acuerdo con los resultados de la capacidad de reacción, es la capacidad estructural subyacente, y no los síntomas de crisis, que determinan la forma en la que la empresa enfrenta la crítica situación por la que atraviesa.

Si se tiene en cuenta la diferencia entre los periodos de recuperación, se puede considerar que el largo plazo permite un desenlace eficaz de una situación de crisis. En cuanto a la rentabilidad, a pesar de que es un factor importante en representar una situación de riesgo bajo, los resultados no fueron suficientes para afirmar que el rendimiento constante es una condición necesaria para superar una situación difícil.

En cuanto al tamaño de la empresa, las grandes empresas tienden a presentar una mejor situación y un menor riesgo después de la situación inicial de crisis y la industria en la que las empresas desarrollan su actividad tiene una influencia en el desenlace de una situación de distress. Algunas características específicas de cada sector pueden contribuir o impedir la evolución del proceso de recuperación y, como consecuencia, en los resultados de las estrategias implementadas por parte de las empresas para resolver la crisis.

Además de las estrategias orientadas hacia la rentabilidad a través de las modificaciones de la estructura económica y financiera para superar una situación problemática, también consideramos la posibilidad de los directivos para "gestionar" la imagen débil de la situación financiera a través de las inversiones en acciones responsables como un mecanismo para proporcionar solidez futura a la empresa. De esta manera, no sólo los inversores, sino también el propio mercado estarían afectados por este comportamiento de las futuras expectativas de los directivos. No hemos obtenido diferencias entre empresas sanas y con problemas, en comportamiento responsable estructural en los aspectos considerados como fortalezas. Esto significa que las decisiones de gestión en comportamientos responsables son independientes de la situación financiera. Sin embargo, también podría significar que los gerentes de las empresas en declive tienen un comportamiento responsable estratégico para suavizar la imagen dada por sus débiles indicadores económicos y financieros.

Por otra parte, existen diferencias en la valoración de las debilidades por lo que las empresas en crisis obtienen peores valoraciones en cuanto a las dimensiones negativas incluidos en la base de datos KLD. Este hecho podría ser una consecuencia de la tendencia a reducir los costes y las inversiones en acciones que podrían seguir debilitando a una ya deteriorada situación financiera. Sin embargo, estas empresas siguen una estrategia de RSC dirigida a invertir en conducta responsable con un alto nivel de impacto o reputación social pero con un bajo coste de inversión, tal como la diversidad de género.

Como consecuencia, nos encontramos con que la variable crisis, de hecho, así como el tipo y la severidad de la misma, discrimina las empresas con patrones proactivo

y/o reactivos. Además, estos patrones comunes son generalmente más destacados un año después de que la empresa ha identificado ciertos deteriorados indicadores económicos y financieros.

Un año después de la manifestación de la situación de crisis, las empresas parecen tener un perfil común de comportamiento socialmente responsable, cosa que no se observó anteriormente. Sin embargo, la única característica que discrimina estas empresas del perfil general de empresas sanas es la debilidad en apostar por las acciones que pudieran fortalecer su posición medioambiental. Este hecho puede ser explicado por el coste asociado que estas acciones requieren y que pueden tener un impacto negativo añadido a una posición económica ya deteriorada.

Las empresas con problemas modifican su comportamiento responsable de tal manera que no se refleja en una mayor y positiva valoración general. Dichas empresas actúan sobre determinadas acciones. Con respecto a las debilidades, las empresas en distress no tienen un perfil específico distinto, sin embargo, su situación ha cambiado tras el inicio del estado de crisis, como si simplemente hubieran decidido unirse a los comportamientos más comunes entre las empresas, para evitar que se valoren negativamente.

Existen distintos perfiles cuando consideramos el tipo y el origen de la crisis, fundamentalmente diferenciando la existencia de un déficit en la cuenta de pérdidas y ganancias. Esta aglomeración podría estar relacionada con las estrategias implementadas por la empresa para el proceso de recuperación.

Las diferencias en el comportamiento responsable de las empresas con problemas desde el punto de vista de rentabilidad operativa y desde el punto de vista de la estructura financiera pueden ser causadas, en cierta medida, como consecuencia de dichas situaciones. Las empresas débiles en rentabilidad necesitan mejorar sus ingresos en el corto plazo y esto se puede observar en la tendencia a reducir los costes y en la inversión con un beneficio directo sobre la recuperación, en lugar de obtener una posición social.

En general, al analizar los factores que influyen en la estrategia final de RSC de las empresas, una vez los síntomas de distress se han identificado, nos encontramos con que las empresas sanas presentan cambios en todos los años analizados, mientras que las empresas en distress presentan una tendencia a aumentar su valoración en debilidades o reducir la valoración de las fortalezas, un año después de haber identificado los síntomas de debilidades económicas y financieras. Sin embargo, cuando se observan por separado estas diferencias no se producen en todas las dimensiones de la RSC. A pesar de observar cambios en las empresas con problemas, éstos no se pueden generalizar como un patrón durante todos los períodos analizados. Las empresas en distress mantienen su inversión en RSC, para no empeorar sus debilidades de RSC a pesar de su situación deteriorada.

Se observa un aumento en las acciones en dimensiones no costosas tales como la diversidad y los derechos humanos, donde las empresas con problemas muestran un comportamiento diferente de las empresas sanas. Las diferencias entre los dos grupos de empresas ya aparecen durante el año cuando se produce la crisis, por lo tanto, podemos afirmar que las empresas en distress inician su cambio de actitud el año en que empiezan a sospechar que van a incurrir en problemas económicos y financieros.

Las empresas en crisis reducen sus inversiones en acciones relacionadas con productos, uno de los aspectos más costosos y con importante repercusión en los deteriorados estados financieros. El mismo comportamiento se observó también en la dimensión de medioambiente. Si bien las empresas sanas tratan de reducir sus debilidades en esta última dimensión, para las empresas con problemas este hecho no se produce, durante el mismo período. En este sentido, la rentabilidad económica resultó relevante en determinados sectores y en las dimensiones más costosas de la RSC. De esta manera, se puede in cierto modo, confirmar que algunas de las inversiones en responsabilidad social se pueden realizar cuando hay certeza sobre la capacidad de la empresa de generar fondos e invertir.

Cuando los modelos de comportamiento responsable se aplicaron a dimensiones individuales y en función del sector, las diferentes variables analizadas fueron básicamente importantes. La variable sectores constituye uno de los aspectos que

pueden influir más en el incentivo de las empresas en dificultades financieras para mantener, aumentar o disminuir sus acciones en materia de RSC. Los sectores sensibles a la actitud de los stakeholders pero con deficiencias en la rentabilidad económica, intentan mantener la confianza de la sociedad a través de acciones que no afectan a su situación deteriorada.

Estar en distress o tener una situación estable es un factor independiente de los cambios observados en muchas de las dimensiones de RSC entre el año t y t+1. Como consecuencia de ello, a pesar de su situación problemática, las empresas en distress siguen apostando por las inversiones en RSC y en esas dimensiones que aparentemente son valoradas por el mercado en ese determinado momento. Las diferencias en los perfiles nos permiten afirmar que la inversión RSC es una cuestión que depende de la oferta y la demanda procedente de los mercados en ese determinado periodo de tiempo.

"Let me embrace thee, sour adversity, for wise men say it is the wisest course."

William Shakespeare

BIBLIOGRAFIA

Abad, C., Arquero, J.L y Jiménez, S.M. (2007), "El fracaso empresarial: características y tipos", Asociación Española de Contabilidad y Administración de Empresas, Madrid, *Accounting Review*, 38, pp. 63-93.

Agarwal, V. y Taffler, R.J. (2008). Comparing the Performance of Market - Based and Accounting-Based Bankruptcy Prediction Models. *Journal of Banking and Finance*, 32, 8, pp. 1541-1551.

Altman, E. y Hotchkiss, E. (2006), "Corporate Financial Distress and Bankruptcy", Wiley, Hoboken, New Jersey.

Altman, E. I. (1984), "The success of business failure prediction models", *Journal of Banking and Finance*, 8, pp. 171-198.

Altman, E.I., Haldeman, R.G. y Narayanan, P., (1977), "Zeta Analysis: A new model to identify bankruptcy risk of corporations", *Journal of Banking and Finance*, 1, pp. 29-54.

Altman, E. I. (1968), "Financial ratios, discriminant analysis and the prediction of corporate failure", *Journal of Finance*, Sept.

Argenti, J. (1976), "Corporate Collapse. The causes and Symptoms", MacGraw-Hill, London.

Aupperle, K. E., Carroll, A. B. y Hatfield, J. D. (1985), "An empirical examination of the relationship between corporate social responsibility and profitability". *Academy of Management Journal*, pp. 446-463.

Balcaen, S. y Ooghe, H. (2006), "35 years of studies on business failure: an overview of the classic statistical methodologies and their related problems", *British Accounting Review*, 38 (1), 63 -93.

Bardos, M. (2001), "Développements récents de la méthode des scores de la Banque de France", Bulletin de la Banque de France, 90.

Barker III, V.L. y Duhaime, I.M. (1997): Strategic change in the turnaround process: Theory and empirical evidence, *Strategic Management Journal,* 18 (1), pp. 13-38.

Barniv, R., Agarwal, A. y Leach, R. (2002), "Predicting bankruptcy resolution", *Journal of Business Finance & Accounting*, 29, 3&4, pp. 497-520.

Bear, S, Rahman, N. y Post, C. (2010), "The Impact of Board Diversity and Gender Composition on Corporate Social Responsibility and Firm Reputation". *Journal of Business Ethics*, 97 (2), pp. 207-221

Beaver, W. (1967), "Financial ratios predictors of failure. Empirical research in accounting: selected studies 1966", *Journal of Accounting Research*, 4, pp. 71-111.

Becchetti, L., Ciciretti, R. y Hasan, I. (2007), "Corporate Social Responsibility and Shareholder's Value: An Event Study Analysis", Federal Reserve Bank of Atlanta. Working Paper Series, Working Paper, 2007-6, April, pp. 2-33.

Belu, C. (2009), "Ranking corporations in terms of sustainable and socially responsible practices", *Sustainable Development*, 17 (4), pp. 257-268.

Boesso, G. y Michelon, G. (2010), "The Effects of Stakeholder Prioritization on Corporate Financial Performance: An Empirical Investigation", *International Journal of Management*, 27 (3), pp. 470-496.

Brammer, S. y Millington, A. (2008), "Does it pay to be different? An analysis of the relationship between corporate social and financial performance". *Strategic Management Journal*, 29 (12), pp. 1325-1343.

Brown, B. y Perry, S. (1994). "Removing the financial performance halo from *Fortune*'s "most admired" companies". *Academy of Management Journal*, 37, pp. 1347-1359.

Bruno, A.V., Leidecker, J.K. y Harder, J.W. (1987), "Why Firms fail", *Business Horizons*, March-April, pp. 50-58.

Burbank, R.K. (2005), "The Classic Five-Step Turnaround Process. Case Study of ProdiGene, Inc", *The Journal of Private Equity***,** 8 (2), pp. 53-58.

Byus, K., Deis, D. y Ouyang, B. (2010), "Doing Well by Doing Good: Corporate Social Responsibility and Profitability", *SAM Advanced Management Journal (07497075)*, 75 (1), pp. 44-55

Campbell, S.V. (1996), "Predicting bankruptcy reorganization for closely held firms", *Accounting Horizons*, 10 (3), pp. 12-25.

Cascio, W., Young, C. y Morris, J. (1997), "Financial consequences of employment-change decisions in major U.S. corporations", *Academy of Management Journal*, 40 (5), pp. 1175-1189.

Castrogiovanni, G. y Bruton, G. (2000), "Business turnaround processes: reconsidering the role of retrenchment", *Journal of Business Research*, 48 (1), pp. 25-34.

Catanach, A.H. y Perry, S.E. (2001), "An evaluation of the survival Model`s contribution to Thrift Institution Distress Prediction", *Journal of Managerial Issues*, 12 (4), pp. 401-417.

Cheung Y.L., Tan W., Ahn H.J y Zhang Z. (2010), "Does corporate social responsibility matter in Asian emerging markets?", *Journal of Business Ethics*, 92, pp. 401-413.

Cormier, D. y Magnan, M. (1997), "Investors' Assessment of Implicit Environmental Liabilities: An Empirical Investigation". *Journal of Accounting and Public Policy*, 16, pp. 215–241.

Cybinski, P. (2001), "Description, Explanation, Prediction the Evolution of Bankruptcy Studies?", *Managerial Finance*, 27 (4), pp. 29-44.

Davidson, W.N. y Worrell, D.L. (1992), "The effect of product recall announcements on shareholder wealth". *Strategic Management Journal*, 13 (6), pp. 467-73.

Devinney, T.M. (2009) "Is the Socially Responsible Corporation a Myth? The Good, the Bad, and the Ugly of Corporate Social Responsibility", *Academy of Management Perspectives*, May, pp. 44-56.

Dimitras, A.I., Zanakis, S.H. y Zopounidis, C. (1996), "A survey of business failures with an emphasis on prediction methods and industrial applications", *European Journal of Operational Research*, 90, pp. 487-513.

Dowell, R. V., Siddiqui, I. A., Meyer, F. y Spaugy, E. L. (2000), "Mediterranean fruit fly preventative release programme in southern California", pp. 369 - 375. *In* K. H. Tan [ed.], Area-wide control of fruit flies and other insect pests. Penerbit Universiti Sains Malaysia, Pulau Pinang, Malaysia.

Feldman, S. J., Soyka, P.A. y Ameer, P.G. (1997), "Does improving a firm's environmental management system and environmental performance result in a higher stock price?", *Journal of Investing*, 6, pp. 87-97.

Freeman, R. E. (1984), "Strategic Management: A Stakeholder Approach". Boston: Pitman. Print.

Geiger, M.A., Raghunandan, K. y Rama, D.V. (1995), "Reporting on going concern before and alter SAS n 59", *The CPA Journal online*, 53.

Ghoul, S., Guedhami, O., Kwok, C. y Mishra, D. (2011), "Does corporate social responsibility affect the cost of capital?", *Journal of Banking and Finance*, 35 (9), pp. 2388-2406.

Gilbert, L.R., Menon, K.I. y Schwarz, K.B. (1990), "Predicting Bankruptcy for firms in Financial distress", *Journal of Business Finance and Accounting*, 17 (1), pp. 161-171.

Godfrey, P. C., Merrill, C. B. y Hansen, J. M. (2009), "The relationship between corporate social responsibility and shareholder value: An empirical test of the risk management hypothesis". *Strategic Management Journal*, 30, pp. 425–445.

Goss, A. (2009), "Corporate Social Responsibility and Financial Distress". ASAC.

Goss, A. (2007), "Essays a corporate social responsibility and financial performance", York University. Dissertation, York University, Canada.

Graves, S. B. y Waddock, S. A. (2000), "Beyond built to last: stakeholder relations in the built to last companies". *Business and Society Review*, 105 (84), pp. 393-418.

Griffin, J. y Mahon, J. (1997), "The corporate social performance and corporate financial performance debate", Business and Society, 36 (1), p. 5

Harker, M. y Harker, D. (1998), "The role of strategic selling in the company turnaround process", *The Journal of Personal Selling & Sales Management*, 18 (2), pp. 55-67.

Hassel, L., Nilsson, F. y Nyquist, S. (2005), "The value relevance of environmental performance", *European Accounting review*, 14 (1), pp. 41-61.

Heal, G. (2005), "Corporate social responsibility: An economic and financial framework", *The Geneva Papers*, 30 (3), pp. 387-409.

Hernández-Murillo, R. y Martinek, C. (2009), "Corporate Social Responsability Can Be Profitable". *The Regional Economist*, April, pp. 4.5

Hillman, A. J. y Keim, G. D. (2001), "Shareholder value, stakeholder management, and social issues: What's the bottom line?" *Strategic Management Journal*, 22, pp. 125–139.

Ho, L-C.J. y Taylor, M.E. (2007), "An Empirical Analysis of Triple Bottom-Line Reporting and its Determinants: Evidence from the United States and Japan", *Journal of International Financial Management and Accounting*, 18 (2), pp. 123-150, Available at SSRN: http://ssrn.com/abstract=990124 or doi:10.1111/j.1467-646X.2007.01010.x

Hotchkiss, E. S. (1995), "Post-bankruptcy performance and management turnover", *Journal of Finance*, 50, pp. 3-21.

Hull, C. y Rothenberg, S. (2008), "Firm performance: the interactions of corporate social performance with innovation and industry differentiation". *Strategic Management Journal*, 29 (7), pp. 781-789.

Ioannou, I y Serafeim, G. (2010), "The impact of Corporate Social Responsibility on Investment Recommendations". Harvard Business School Accounting and Management Unit Working Paper No. 1507874, pp. 11-17, Available at SSRN: http://ssrn.com/abstract=1507874 or doi:10.2139/ssrn.1507874

Jong-Seo, C., Young-Min, K. y Chongwoo, C. (2010), "Corporate social responsibility and corporate financial performance: Evidence from Korea". *Australian Journal of Management*, 35 (3), pp. 291-311

Jostarndt P., (2006), "Financial Distress, Corporate Restructuring and Firm Survival: An Empirical Analysis of German Panel Data", Dissertation Universität München.

Kacperczyk, A. (2009), "With greater power comes greater responsibility? Takeover protection and corporate attention to stakeholders". *Strategic Management Journal*, 30, pp. 261–285.

Kahl, M. (2002), "Economic Distress, Financial Distress, and Dynamic Liquidation", *Journal of Finance*, 57, pp. 135-168.

Kahl, M. (2001), "Financial Distress as a Selection Mechanism: Evidence from the United States", Anderson School, Finance Working Paper No. 16-01, Available at SSRN: http://ssrn.com/abstract=288361 or http://dx.doi.org/10.2139/ssrn.288361

Konar, S. y Cohen, M. (2001), "Does the Market Value Environmental Performance?", *Review of Economics and Statistics,* 83 (2), pp. 281-309.

Krueger, D.A., y Willard, G.E. (1991), "Turnarounds: A process, not an event", *Academy of Management* Best Papers Proceedings, pp. 26-30.

Laitinen, E.K. (2005), "Survival Analysis and Financial Distress Prediction: Finnish Evidence", *Review of Accounting & Finance*, 4, pp. 75-90.

Laitinen, E.K. (1993), "Financial Predictors for different Phases of the failure process", Omega, 21 (2), pp. 215-228.

Laitinen, E.K. (1991), "Financial ratios and different failure processes", *Journal of Business Finance and Accounting*, 18 (3), pp. 649-673.

Lee D.D., Faff R.W. y Langfield-Smith K. (2009), "Revisiting the Vexing Question: Does Superior Corporate Social Performance Lead to Improved Financial Performance?", *Australian Journal of Management,* 34 (1), pp. 21-49.

Levine, M.A. (2008), "The Benefits of Corporate Social Responsibility". *New York Law Journal*. August 13.

Lo S.F. y Sheu H.J. (2007), "Is Corporate Sustainability a Value-Increasing Strategy for Business?" *Corporate Governance: An International Review*, 15 (2), pp. 345-358.

Luoma, M. y Laitinen, E.K. (1991), "Survivan Analysis as a Tool for Company Failure Prediction", *Omega*, 19 (6), pp. 673-678.

Mackey, A., Mackey T.B. y Barney J.B. (2007), "Corporate social responsibility and firm performance: Investor preferences and corporate strategies", *Academy of Management Review,* 32, pp. 817–835.

Mar Molinero, C. y Serrano-Cinca, C. (2001), "Bank failure: a multidimensional scaling approach", *The European Journal of Finance*, 7, pp. 165-183.

Mar Molinero, C. y Ezzamel, M. (1991), "Multidimensional Scaling Applied to Corporate Failure", *Omega*, 19 (4), pp. 259-274.

Margolis, J.D., y Walsh, J.P. (2001), "People and Profits? The search for a link between a company's social and financial performance". Mahwah, NJ: Erlbaum.

Martin, R.D. (2000), "Going-concern uncertainty disclosures and conditions: a comparison of French, German and U.S practices", *Journal of International Accounting Auditing & Taxation*, 9 (2), pp. 137-159.

McWilliams, A. y Siegel, D. (2001), "Corporate social responsibility: a theory of the firm perspective", *Academy of Management Review*, 26, pp. 117–27.

Melo, T. y Galán J.I. (2011), "Effects of corporate social responsibility on brand value." *Journal of Brand Management*, 18.6, pp. 423-437.

Melo, T. y Garrido-Morgado, A. (2012), "Corporate Reputation: A Combination of Social Responsibility and Industry". *Corporate Social Responsibility and Environmental Management*, 19, pp. 11–31. doi: 10.1002/csr.260

Miles, M. y Covin, J. (2000), "Environmental Marketing: A Source of Reputational, Competitive and Financial Advantage", *Journal of Business Ethics*, 23, pp. 299-311.

Mishra, S. y Suar, D. (2010), "Does Corporate Social Responsibility Influence Firm Performance of Indian Companies?". *Journal of Business Ethics*, 95 (4), pp. 571-601.

Morris, J, Cascio, W. y Young, C. (1999), "'Downsizing after all these years: Questions and Answers about who did it, how many did it, and who benefited from it", *Organizational Dynamics*, 27, pp. 78-87.

Moulton, W.N. y Thomas, H. (1993), "Bankruptcy as a Deliberate Strategy: Theoretical Considerations and Empirical Evidence", *Strategic Management Journal*, 14 (2), pp. 125-135.

Murphy, C. J. (2002), "The Profitable Correlation Between Environmental and Financial Performance: A Review of the Research". Document commissioned by Light Green Advisors, Inc.

Mutchler, J.F. y Williams, D.D. (1990), "The relationship between audit technology, client risk profiles, and the going-concern opinion decision", *Auditing*, 9 (3), pp. 39-45.

Mutchler,J.F. (1985), "A Multivariate analysis of the auditor's going-concern opinion decision", *Journal of Accounting Research*, 23 (2), pp. 668-682.

National Bureau of Economic Research US Business Cycle Expansions and Contractions (2010). Public Information Office, available at http://www.nber.org/cycles/US_Business_Cycle_Expansions_and_Contractions_20100920.pdf

Nelling, E. y Webb, E. (2009), "Corporate social responsibility and financial performance: the 'virtuous circle' revisited". *Review of Quantitative Finance and Accounting*, 32 (2), pp. 197-209, DOI: 10.1007/s11156-008-0090-y

Neophytou, E. y Mar Molinero, C. (2005), "Financial ratios, Size, Industry and Interest Rate Issues in Company Failure: An Extended Multidimensional Scaling Approach", Working Paper 100, Kent Business School.

Neophytou, E. y Mar Molinero, C., (2004), "Predicting Corporate Failure in the UK: A multidimensional Scaling Approach", *Journal of Business Finance & Accounting*, 31 (5), pp. 677-709.

Ooghe, H. y Prijcker, S. (2008), "Failure processes and causes of company bankruptcy: a typology", *Management Decision*, 46 (2), pp. 223 – 242.

Orlitzky, M., Schmidt, F. L., y Rynes, S. R. (2003), "Corporate social and financial performance: A meta-analysis". *Organization Studies*, 24 (3), pp. 403– 41.

Pearce, J.A. y Doh, J.P. (2002), "Improving the Management of Turnaround with Corporate Financial Measures", *Academy of Management Proceedings*, b1-b6.

Pearce, J.A. y Robbins, K. (1994), "Retrenchment remains the foundations of business turnaround", *Strategic Management Journal,* 15, pp. 407-417.

Pearce, J.A. y Robbins, K. (1993), "Toward improved theory and research on business turnarounds", *Journal of Management*, 19, pp. 613-636.

Peters, R, y Mullen, M. (2009), "Some Evidence of the Cumulative Effects of Corporate Social Responsibility on Financial Performance". *Journal of Global Business Issues*, 3 (1), pp. 1-14

Ponemon, A. y Shich, A.G. (1991), "Financially distressed companies and auditor perceptions of the twelve characteristics of decline", *Auditing*, 10 (2), pp. 70-84.

Poston, K.M., Harmon, W.K. y Gramlich, J.D. (1994), "A test of financial ratios as predictors of turnaround versus failure among financially distressed firms", *Journal of Applied Business Research*, 10 (1), pp. 41-57.

Prahalad, C.K. y Hamel, G. (1994), "Strategy as a field of study: Why search for a new paradigm?", *Strategic Management Journal,* 15, pp. 5–16.

Pretorius, M. (2008), "Critical variables of business failure: A review and classification framework", *Sajems Ns 11*, 4, pp. 408-430.

Raghunandan, K. y Rama, D.V. (1995), "Audit reports for companies in financial distress: Before and after SAS Nº 59", *Auditing*, 14 (1), pp. 50 -16.

Ravi Kumar, P. y Ravi, V. (2007), "Bankruptcy prediction in banks and firms via statistical and intelligent techniques – A review", *European Journal of Operational Research*, 180, pp. 1-28.

Reinhardt, F. (1999), "Market Failure and the Environmental Policies of Firms. Economic Rationales for "Beyond Compliance" Behavior". *Journal of Industrial Ecology*. 3 (1), pp. 9-21

Robbins, K. y Pearce, J.A. (1992), "Turnaround: retrenchment and recovery", *Strategic Management Journal*, 13 (4), pp. 287-309.

Routledge, J. y Gadenne, D. (2000), "Financial distress, reorganization and corporate performance", *Accounting & Finance*, 40, pp. 233–259.

Ruf, B.M., Muralidhar, K., Brown, R.M., Janney, J.J. y Paul, K. (2001), "An empirical investigation of the relationship between change in corporate social performance and financial performance: a stakeholder theory perspective", *Journal of Business Ethics*, 32, pp. 143–56.

Schadewitz, H. y Niskala, M. (2010), "Communication via responsibility reporting and its effect on firm value in Finland". *Corporate Social Responsibility and Environmental Management*, March/April, 17 (2), pp. 96-106.

Schnietz, K.E y Epstein, M. (2005), "Exploring the Financial Value of a Reputation for Corporate Social Responsibility During a Crisis", *Corporate Reputation Review*, 7 (4), pp. 327-345.

Semenova, N., Hassel, L.G., y Nilsson, H. (2010), "The value relevance of environmental and social performance: Evidence from Swedish SIX 300 Companies", LTA 3/10, pp. 265-292

Sen, S. y Bhattacharya, C. B. (2001), "Does doing good always lead to doing better? Consumer reactions to corporate social responsibility". *Journal of Marketing Research*, 38 (2), pp. 225-243.

Sheppard, J.P. y Chowdhury, S.D. (2005), "Riding the wrong wave: Organizational failure as a failed turnaround", *Long Range Planning*, 38, pp. 239-260.

Shumway, T. (2001), "Forecasting Bankruptcy More accurately: A simple hazard Model", *Journal of Business*, 74 (1), pp.101-124.

Siegel, D.S. y Vitalino, D.F. (2006), "An empirical analysis of the strategic use of corporate social responsibility". *Journal of Economics and Management Strategy,* 16 (3), pp. 773-792.

Smith, M. y Graves, C. (2005), "Corporate turnaround and financial distress", *Managerial Auditing Journal*, 20 (3), pp. 304 – 320.

Statman, M., Thorley, S. y Vorkink, K. (2006), " Investor Overconfidence and Trading Volume", *The Review of Financial Studies*, 19 (4), pp. 1531-1565, doi:10.1093/rfs/hhj032.

Sudarsanam, S. y Lai, J. (2001), "Corporate financial distress and turnaround strategies: An empirical analysis", *British Journal of Management*, 12, pp. 183-199.

Turetsky, H. y Mcwewn, R.A. (2001), "An Empirical Investigation of Firm Longevity: A model of the Ex Ante Predictors of Financial Distress", *Review of Quantitative Finance and Accounting*, 16, pp. 323-343.

Waddock, S. A. y Graves, S. A. (1997), "The Corporate Social Performance-Financial Performance Link" *Strategic Management Journal*, 18 (4), pp. 303-319.

Wood, D. J. y Jones, R. E. (1995), "Stakeholder mismatching: A theoretical problem in empirical research on corporate social performance". *International Journal of Organizational Analysis*, 3, pp. 229-267.

Xueming, L. y Bhattacharya, C.B. (2006), "Corporate Social Responsibility, Customer Satisfaction and Market Value", *Journal of Marketing,* 70, pp. 1-18.