



University Faculty :*Economics and Business* **Subject Matter:** *Corporate Finance*

Financial Distress and Bankruptcy:
Tools for preserving the Soundness of
Financial System

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Academic Year 2014-15

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Acknowledgments

“Economics is social science” or better *“Economics studies the behavior of rational individual under conditions of scarcity”*(Classical Economics Theory)

I still remember these two concepts that are printed on my first mammoth book of “Principle of Economics” by Frank and Bernanke authors besides the fact that these ones are still imprinted on my mind. But can we infer that another source that determines the path of actions adopted by an innocent individual can be uncertainty of events? Who is such individual? Economists, that give always promptly answers to existential questions, say “an individual is an agent with well-defined goals and preferences that try to fulfill them as best as he/she can”. Well, these remarked quotations do not come only from the economic theory that I hardly study by-hearth; these are notions that I have experienced in real life since my starting freshman year at University and, generically, during my young life. Surprisingly, I exactly acted in the way in which economists describe the human behavior of agents with their economic models: I initiated the academician course of Economics and Finance class because of my well-defined Preferences (English teaching lessons combined with the appealing presence of subject matters like Management or Business Law and other ones that were interrelated with the field of social science) out bounded my not very well defined goals at times in which my high school experience ended (originally I was concerned with the idea that my ideal carrier would be one interrelated with Medicine or Medical studies in general; nowadays instead I am convinced that the risk that I have undertaken previously is going to have an optimal return in terms not only of the employability and job opportunities tomorrow but also of more dynamic ways of reasoning and understanding the continuously changing environment); moreover, I have suffered during my academic-run since the high opportunity costs involved in the choice to study in another city far from my hometown that had completely revolutionized my previous lifestyle and the way of interactions with the other unknown people; moreover, homesick was the worst plague of such paining costs; but the risk is worth the return that every individual is going to gain, thus also the pain, at the end, is remunerated with compounding method. In perpetuity. This is what I get from Corporate Finance class. In fact, it seems necessary, and not only sufficient condition for surviving the competitive context, being Strong and investing today because of the discounting effects tomorrow that decrease value in continuum; in addition, taking all the opportunities at hand, never regretting what have been done in the past and still we are doing at the present because casuality of events in the near future could damage what you had rationally well

disposed in mind to do. This is because the rational individual is aware of the fact that he has to deal with uncertainty. He can prevent many worst outcomes that could come from randomly walking events but he cannot avoid the existence of the risk because the latter is essential ingredient of the system. This is against the Nature of things and an innocuous individual is always subordinated to it; even the one with the highest impetus of undertaking morally hazardous actions is fated to be a short-lived winner or a loser. The Highest risk corresponds to the Highest return as well as the Highest proportioned loss. Hence, the solution is always in the middle. Equilibrium means safety and certainty. Equilibrium is the hardly-loved concept by Pareto and other theorists toward which economic market is always addressed. Even if it means stagnation or, economically speaking, steady state. Hence these represent appealing conditions for individuals with risk-averse aptitudes that prefer to stay in comfortable static circumstances rather than extremely evolving ones. Unfortunately, I believe that when I have decided to chose economics and business class I assumed (unconsciously) the typical aptitude of risk-lovers investors in the market; Usually I exploit rationality in all the cases, but evidently ,at the time of the choice, I did not fear uncertainties and losses that instead I have continuously and enormously faced during my student experience in University. However, at the end , these ones were and are still are remunerated by non monetary quantifiable terms of self satisfaction.

Surely, I can also infer predictions about future events.. but since I am a sincere fellow of the economist Veblen according to whom t he actions are dominated by consistent amount of uncertainty , I feel confidential to use the inflationated dictum : “*Who knows?*”

Definitely, if I would have the possibility to re-take a choice concerned with my academician studies, I ‘m going to retake Economics and Business class again forever.

Alessandra Patti

I would express my personal gratitude toward my supervisor, Prof. J. Carmassi for having support me during the writing activity upon my thesis. Besides, I am thankful for the degree of trust that he gave me in projecting such opera, his willingness to help as well as courtesy that have demonstrated. My Corporate Finance classes will be the ones that I will miss more.

A.P

Preface

The decision to write a dissertation upon financial distress and bankruptcy is derived from my personal enthusiasm in constantly figuring out parallel stories on economic entities and human ones; Ideally, financial distress, and ultimately bankruptcy, are generally associated to the idea of a firm that is reaching the final stage of its existence, represented by its lost in economic hegemony in the market and its inevitable decline. In human terms, this economic stage is translated in the parallel human death. Interestingly, this event of corporate and/or human death has the same source of origin: uncertainty. In financial term, uncertainty is associated to the notion of risk. Risk that can be further distinguished in systematic and unsystematic one. The difference consists in the fact that one can be controlled and eventually resolved by mathematical tools, meanwhile the other ones follow a random walking course of action that cannot be avoidable, since it is also an essential ingredient for the well functioning of the entire system. However, the aim of this dissertation consists in identifying the problem at hand (financial distress and bankruptcy's causes), estimating its consequences, adopting tools for preserving the soundness of the system in which uncertainty and certainty variables exist and eventually curing distortions with remedies suggested by the traditional financial theory and more modern approaches. In doing this, this dissertation investigates whether such distressed event, that hit the stability of the firm, reflected in turn into whole system, is mainly determined by endogenous and controllable variables or exogenous ones; for that purpose, Chapter II of this dissertation discuss two possible further sources of distress: one is dominated by the uncertainty and is the Risk involved in making investment activity, meanwhile the second one is represented by financial leverage activity that is determined by the firm itself, and if it engages into excessive debt financing activity, at the end its control over debt escapes and the firm triggers default. Hence, in dealing with these two likely events that cause eventually bankruptcy, the dissertation provides valid tools to be used as remedies. In fact, these latter strategies must deal with certainty and uncertainty components, offer temporary solutions for the establishment of a temporary equilibrium. Interestingly, another insight reported is the one that considers the advent of distressing condition even with positive connotation, since it permits to a distressed firm to reshape eventually its own structure on more stable and safer basis thereafter; hence, this latter condition is the materialization of what the philosopher Schumpeter called the "creative- destruction" process. Finally, chapter III arguments discussions regarding the efficacy

of the method adopted in lieu of insolvency; specifically, it contains two rhetorical questions that tend to clarify and give more specifications upon the results achieved before and through the previous two parts; ultimately the answers provided are the further sustainment of entire content of dissertation and give more authoritative and supporting connotations to the whole theory constructed. The main source from which financial distressed conditions arise is represented by uncertainty that strongly influences the pathway of action of the same certainty variables. The financial distress appears to be a mechanism of natural selection where, in a competitive scenario, the dominant agent is the stronger firm, with more efficient regulatory and operational schemes, high profitability and returns in addition to a discrete amount of debt, against the weaker one, with lower profitability, returns and highly indebted, that is more vulnerable to suffer losses that may address it toward the final stage of its subsistence. Finally, the last paragraph offers a personal formulation and application of an ideal model that would be applied following a dynamic and innovative two fold approach : ideally, it consists in dealing simultaneously with the certain and uncertainty components that determine distressed situation, and once detected these ones, it is necessary intervening with an easy and quick call in action technique, adopting approaches (as reorganization or liquidation) that are best suited to the occurring circumstances, curing the already contaminated scenario and maintaining the overall wealth of the system.

Corporate Finance

My **Efforts** are devoted to :

My mother , **Luciana**

My brother, **Mario**

My Grandmother , **Maria**

My Uncle, **Caterina**

“I love them with increasing return of self-realization”.

A.P.

CHAPTER 1

Describing Financial Distress and Bankruptcy phenomena that hit the stability of the financial market.

Introduction

Chapter 1 is intended to offer an overview of causes and consequences that characterize the event of financial distress and specifically bankruptcy; this latter mechanism is then presented and analyzed from corporate finance, legal and statistics perspectives ; in addition, the last paragraph of Chapter 1 provides a question that gives a preview of the main argument presented in Chapter 2: “which is the efficient remedy to be adopted for granting the soundness of the financial system?” Interestingly, an answer to this question can be deducible by issues analyzed by Chapter 1; uncertainty is the main factor that shapes the general financial context and remedies to be adopted have to deal with it; hence, the efficient tool is the one that provide satisfactory solutions combining certainty elements with uncertainty ones.

1.1 Which are the main factors that create distortions into financial system?

Bankruptcy and other related failures are deemed to be consequences rather than causes of distortions that occur into the current financial market. Actually, many economists have investigated the major sources that contain the seeds for boosting defaulting events into financial system and interestingly have noted from their empirical studies that these latter are mainly shaped by the advent of mixture of macroeconomic (such as low interest rate and low inflation rate as well as the business cycles and the economic fluctuations) and financial distorted events; Thus, these latter are vivid expressions of weaknesses that are present into a system that instead strives for being strong. Hence, there are many elements that are deemed for being the main causal factors that turn out to inevitably provoke also the failures of the entities into the market . First, deregulation procedure of financial markets in conjunction with the Globalization have created the formation of a more complex and intertwined system where the advent of default of a to-big-to-fail entity could have dangerous impacts even on the stabilities of the other single economic entities present into the system as well as the entire environment (spill-over effect). Second, the development of financial innovation in recent periods , coming from the advancements made by the financial theory and the radical change of infrastructure of the market, has increased the complexity and scale of network of interconnection among financial entities, creating beneficial as

well as negative situations experienced from these latter; for example, the increase of financial expertise and knowledge for utilizing OTC derivatives and other securitization remedies have permitted the firm to adopt strategies that tend to achieve highest returns as well as consistent amount of risk, thus hampering the stability of position of these entities and, in turn, damaging also the equilibrium of the others with which the distressed company has a strong relationship. Third, considering the increased interconnection among economic actors into the market, regulatory standards have largely been believed that if each financial institution remained sound then the whole system could remain sound; however this latter approach adopted by these ones has underestimated the implications for the existence of risk that, in the case of its over-occurrence, inevitably, is one of the major component implied into financial activities performed and the one that destroys immediately the value created during a traditional business process. Fourth, connected with the underestimation of the magnitude of risk and the negative consequences that the same event creates, the inability to predict the occurrence of failures was determined also by the adoption of less strict and insufficient regulatory plans for managing risky activities; hence, mis-management of risk and inability to efficiently implement regulatory frameworks have shaped and even increased distortions inside the system, disrupting the harmonious sound of the latter. Fifth, the incapability for giving a likely prediction on the failures occurrences by Credit Rating Agencies have mislead different entities, since they heavily relied on outcomes provided by these credit agencies, taking super –excessive risky activities. Finally, the whole context in which a business operates is dominated by risk which is increased in the moment in which one of its economic agents behaves hazardously. However, when an economic agent becomes aware of the possibilities of failures and he engages in less lending activities that tend to slow down the normal actions of the credit market, even creates equal distortions upon the equilibrium of the same. On the other hand, the opposite approach consisting of engaging into much leveraged business activities will lead to disastrous failure events since too much risk escapes from the control of the rational agent, thus over-soaring even financial regulatory constraints. In addition, since for simplicity banks are not mentioned but actually they are the propulsive elements for granting equilibrium as well as causing distortions with a wrong implementation of their supervisory frameworks as well as the regulatory remedies, the mis-use against the proper use has create even large dis-aligned conditions that have concurred to the creation of a mis-balance of equilibrium into Financial System. Hence, the incapability to manage the uncertainty of macroeconomic events combined with excessive risk taking behaviors by economic agents could be summarized as two wide and major causes for the occurrence of financial instability of the entities and the context in which these take part.

1.2 Definition of Financial Distress and Bankruptcy

Technicians and economists in general prefer to specify the meanings and the usage of the terms Financial Distress and Bankruptcy in the events in which these latter occur; actually, these two terms could possibly be considered to have exactly the same significance; surely, they indicate both the occurrence of the defaulting events, the possibility to cease a business activity as well as the implementation of recovery options, but their range of definition varies broadly. First, the advent of financial distress indicate a circumstance in which the firm faces 1) the problem of having suffered a cash-shortage from assets' side and/or 2) the value of liabilities that is consistently higher than the values of assets, thus the entity enters in trouble when it has to pay obligations due to its creditors. On the other hand, Bankruptcy indeed has a more narrow definition that re-enter into the broad specification of the costs of financial distress; It can be defined as a legal mechanism for allowing creditors to take over when the decline of assets' value triggers an economic default; in fact, bankruptcy occurs when the stockholders exercise their right to default. This latter principle implies that, when the firm suffers financial troubles, stockholders exploit the limited liability conditions and decide to leave the distressed entity into the hands of its creditors and the creditor that is going to undertake the troubled firm become the new stockholder meanwhile the old one is left with nothing.

Moreover, a widespread financial literature has developed a more specified explanation for the usage of terms related unsounded financial situations, and the meaning of these can be blurred with the sphere of significance of Bankruptcy term but indeed they have their own literal as well as their procedural significance; hence, although terms as "failure", "insolvency" and "default" are used interchangeably, they have mild differences in practical applications. First, the term "failure" indicates that the rate of return is consistently lower than the prevailing rates on similar investments; hence, the revenues generated by business operations are not enough to cover the costs and the average returns of investments is continually below the firm's cost of capital. Secondly, the term "insolvency" indeed indicates a chronicle and negative performance suffered by the entity when its total liabilities exceed a fair valuation of its total assets; thirdly, the term "default" indeed indicates the ongoing contracting relationship between creditors and debtors, the obligations of the second toward the former and that obligations must be fulfilled otherwise the defaulting part is subjected to coercive powers of regulatory authorities. In fact, these are retained to be the only

entities capable, in the event of default, to grant a proper use of regulatory frameworks against abuses of insolvency cases.

1.3 Bankruptcy described by Corporate Finance Viewpoint: Capital Structure Model, Costs, Payout Policies

Is the financial distress and type related defaulting events consistently dangerous for the prosperity of the life of a firm as well as the soundness of the whole system? Interestingly this question have been subjected to different subject matter of economics that have further investigates and tries to resolve problems when defaulting events occurs. Corporate Finance is the field of economics with the aim to provide valid answers to specific and technical questions hence, it has been demonstrated how effectively the advent of bankruptcy and any distressed event could seriously damage the entire entity as well as giving approximately quantitative estimation on value lost into the market. Specifically, Corporate Finance investigates causes, analyzes possible consequences and determines methods to be adopted that pretend to be possible remedies for preventing and curing distortions eventually occurred.

It is common knowledge that financial distress is excessively costly and investors worry about it; in fact, their worry is reflected into the current market value of securities of the firm. Thus, cost of financial distress are negative respect to the enhancement of the overall value of a firm, that in turn this latter constitutes the the priority rule for all the value maximize investors into the market. Hence, the following formula is a proof for showing the inverse relationship existing between distressed events and the overall value of a firm:

$$\text{Value of Firm} = \text{value if all-equity-financed} + PV(\text{tax shield}) - PV(\text{costs of financial distress})$$

In fact, from analytical perspective, increasing costs of financial distress by one unit of measurement turns out to be associated on average with a one unit decrease in value of the firm, ceteris paribus.

The other variables presented into such equation are, indeed, positively correlated: it means that increasing or decreasing their values is associated with a symmetrical impacts on the value of the firm; for example, the increase in the usage of the equity financing method is positively associated with a symmetric increase in the overall value of the firm as well as an increase in the

present value of the tax shield is positively correlated to. But, at such situation, that equation is also a representation of the decision that the firm has to take upon its capital structure (“Trade-Off Theory” of Capital Structure) : the firm may decide to increase its own value by increasing equity-financing method as well as the present value of tax saving; interestingly, borrowing activities that are consistently improved will lead to a conspicuous increase of the costs of financial distress that, ultimately, will counterbalance the effects created by the increase of borrowing activities, reducing the excessive risk taken and creating the optimal equilibrium condition upon its capital structure.

As previously mentioned, the cost of financial distress can be approximately quantified by financial and other type related mathematical tools; however, these costs can be predicted but never precisely defined; also because these expected quantifiable costs are just part of a more broad range of costs of financial distress that encompasses also the non-quantifiable ones; for example, the risk can be considered to be part of the non-quantifiable cost of financial distress although many economists and other researchers have developed theories that try to make objectively quantification of this latter element. On the other hand, a conspicuous number of scientists have tried to focus on more specific way for measuring the effective costs of financial distress and more specific bankruptcy costs. In fact, the traditional theory of Corporate Finance has made a precise distinction between **direct** and **indirect costs** of bankruptcy. The former are related to legal and administrative procedures for bankruptcy legal processes (attorneys’ fees, administrative legal fees etc) . The latter indeed, are more difficult to be measured but are extremely important to be taken into account since managing a bankrupt firm is too difficult. As well as the consequences that are derived from bankruptcy events are not easily quantifiable in terms of psychological stress and mental illness that individuals of the firm’s staff could suffer, hence entering a destabilizing process that has very disastrous effects on the whole society.

Furthermore , time and effort exert by regulatory authorities , that ménage properly the business actions for the coordination of procedures to implement for solving the bankruptcy case, must be considered important financial indirect distress costs ; in fact, the legal court runs many routine business decisions, such as the sale of assets or investment in new equipment; besides, in performing such activities they use the diligence of the prudent business regulator for obtaining efficient final results. Regulatory authorities use also a conspicuous level of patience that demonstrate especially when the proposal to reform and revive the firm are thwarted by impatient creditors that want to seek only the cash that derives from the assets’ sales or liquidation of the entire firm.

Furthermore, trying to sum up the direct with the indirect costs of bankruptcy is impossibly practical to do. Surely, the overall costs are consistent for large firms since these latter must face complex and lengthy legal procedures in event of financial distress; perhaps the best evidence to this fact is the reluctance of the creditors to force bankruptcy for the multiple consequences that then are derived from it. In principle, they would be better off seizing the agony of the entity by selling its assets; instead, creditors often overlook defaults in the hope of nursing the firm over a difficult period.

On the other hand, many creditors worry the cases in which firm suffers bankruptcy because of that possible event of suffering damages since their absolute priority condition over repayments of debt toward them could possibly be violated. However, not every firm that gets into trouble goes bankrupt. As long as the firm has the ability to repay the interest on its debt, it may be able to postpone bankruptcy even for many years. Eventually the firm may recover, pay off its debt and escape bankruptcy together. But the mere threat of financial distress can be costly to the firm for different reasons. First, customers and suppliers are extra cautious about doing business with a firm which has suffered certain financial disease or mis-behaved fairly in the past. In addition, customers worry about resale value and the availability of service offered by the previous distressed firm. Secondly, suppliers are unwilling to offer services to distressed and not high reliable firms; and potential employees are unwilling to sign on and existing staff slipping away from their desks for job interviews. Luigi Zingales' thesis that high financial risk appears to reduce firms' appetites for business risks is confirmed by an empirical research conducted by himself that demonstrated that in the more recent financial scenario deregulation spreads a wave of competition and restructuring procedures in which the winning participants are the conservatively financed companies vis-à-vis the highly indebted firms..

Besides, the proposition whether a firm enters financial troubling situation or not has a very important implication also on the clash of conflicts of interest eventually arise among bondholders and stockholders: in fact, financial distress become costly especially when these agents (specifically stockholders) engages into actions that try to maximize their own self-narrow interest at the entire expenses of the creditors of the firm and the overall value of the firm itself. Actually, there are five well-know games that are worth mentioning to be indicated as unfair ways of behaving by stockholders and that represent evidently the situations in which creditors suffers consistent losses due to greediness of intent for maximizing their own profit.

The first game played by the stockholders of levered firms is "**Risk Shifting**" which consists in the fact that individuals previously mentioned gain consistent amount of profit as business risk

increases. Furthermore, financial managers who act strictly in shareholders' interests (and against the interest of creditors) will favor risky projects over safe ones, taking also riskier projects with negative NPV's, disregard the possibility to jeopardize not only the business activity itself but also the surrounding scenario in which the business activity takes places. Hence, this way of acting makes this strategy of capital budgeting costly not only to the entity in question but also to the financial system as whole. However, when the stockholders follow their narrow self-interest, they make errors of commission when taking projects that reduce the overall market value of their firm. Also, conflicts of interests that these agents can suffer are committed by errors of omissions. In fact, during the normal business activity cycle where the risk is hold constant, any increase in firm value is shared among bondholders and stockholders. Hence, the value of any investment opportunity to the firm's stockholders is reduced because the benefits of this latter are shared between bondholders and stockholders. Thus it may not be in stockholders' self-interest to contribute fresh equity capital and sharing the opportunity of gaining profit. Stockholders hardly desire to enjoy profit without sharing benefits with creditors. The situation of **Refusing to contribute Equity Capital** and share profit is problematic one for all levered firms but it became a serious concern when firms enter into financial distress, since the greater the probability of default, the more bondholders have to gain from investments that increases the firm value; " hence the greater will be the conflicts arise with the bondholders.

Furthermore, Corporate Finance describes many other strategies engaged by stockholders when they decide to play unfair games against creditors in the event of financial distressed:

The first form of strategy , **Cash In and Run**, resembles to follow the pattern of action of "refusing to contribute equity capital" game in reverse where the stockholder are reluctant to invest money into a firm in financial distress but are more prone to withdrawn money out , in the form of cash dividends, when bankruptcy seems inevitable.

The second game can be considered to be a sort of "creative accounting" game, in which the aim and the scope of **Playing for Time** strategy is designed by stockholders that want to omit the real conditions of their troubled firm, thus making accounting changes that hide the true extent of financial trouble, encouraging false hopes of recovery, or by cutting corners of maintenance, research and development etc, make the years' operating performance look better and create a fictitious condition that ultimately could mislead creditors on the real financial status of the troubled firm.

Finally, the third strategy used by stockholder for gaining at the expenses of the old stockholders of the firm is called **Bait and Switch**. This strategy is not always use when financial distress occur. However, the procedure starts with the adoption of conservative policy, issuing limited amount of

safe debt but then, the policy is changed and switched toward one that permits to issue more debt that make riskier conditions into the markets.

These strategies, although they are objectionable and controlled by many regulatory authorities into financial market, are widely used separately or in a destructive combinations.

Hence financial distress costs encompasses direct, indirect and also unfair policies adopted by stockholders that before the occurrence of the defaulting events that destroy the value of the previous healthy entity, desire to reap the remaining values inside. The decline in value comes out of the shareholders' pockets hence they want to gain what is possible before the overall value is going to disappear.

But, without considering the exogenous factors that possibly influence and favorite the advent of financial distress, is it possible to consider that also endogenous elements, such as the behavior of stockholders and of the other organization's members being major responsible for the occurrence of the defaulting event of the same entity? Surely, engaging into risky activities, as well as into self-interested actions, playing at the expenses of the system as whole ... possibly cannot be considered to be a wise path of action to follow for prevention of bankruptcy . Nor for preserving one.

In light of these events, it seems clear that time and efforts are constantly required to Regulatory frameworks for monitoring and preventing any such abuse upon the system. Different remedies can be indicated such as limiting the borrowing activities to levels at which the firm's debt is safe or close to it; in such situation, Banks and other financial lenders make rationing on the amount that they will lend or imposing restrictions on the company's actions that could damage their safe positions. On the other hand, it could be wise restrict the capacity of the firm to sell its assets and imposing constraints on investments outlays except with the lenders' consent. Despite that other precautionary actions can be applied, cost-benefit analysis indicates however that these are always cost to be sustained and , irremediably, such costs are proportionate to the magnitude of problem to be solved; for example, monitoring and accounting expenses are necessary for avoiding and preventing any typology of irregularity in doing business activities, but at the same time these increases the difficulty regard the firm's debt-equity decision as tradeoff between interest- tax shield and the costs of financial distress.

As it has been demonstrated , the overall value of the firm is determined by the capital structure (empirical evidence has enter in a stark contrast with was formulated by Miller and Modigliani theory of Capital structure) that it intends to adopts; Corporate Finance displays a competing **Pecking Order Theory** that ranks the preferences of the firm regard the economic sources that it has to use in order to finance its business cycle activities. In doing a ranking list cataloguing the

preferences of the firm respect the sources eventually used for financing its activities, it has been demonstrated that 1) each firm prefers internal source of financing, 2) the dividend payouts are adapted to the investment opportunities made and 3) internally generated cash flow may constitute a source for investing in securities (if internal cash flows are consistently higher than capital expenditures) and 4) if all the previously mentioned conditions are not met, then the firm itself will opt to adopt an external finance source, issuing the safest security; in doing this, it starts with debt first, then possible hybrid securities such as convertible bonds, or, as alternative option, equity as a last resort.

However the Pecking Order Theory tries to give a possible explanation on why the most profitable firms generally borrow less and indeed less profitable firms issue debt. In such theory, the attraction of the interest tax shield is assumed to be second order. However, debt-ratios are subjected to continuously changes especially when there is imbalanced internal cash flow, net of dividends and real investment opportunities. Highly profitable firms with tend to lower the debt ratio because they are willing also to reduce the amount of risk. Indeed less profitable ones, will tend to exploit the leverage effect for reaching the levels of the profitable ones because of the scarcity of their internal funds. Hence, this explain why many firms, despite the fact that financial distress is always a worried situation, could possibly engage activities that turn out be transformed into serious losses. Hence, Corporate Finance through the Pecking order theory provide a valid explanation on the reasons that leads the firm to choose the leverage effect to auto-finance itself even at the cost to engage into excessive risk..

In a research held by economists Rajan and Zingales¹ published on a study of debt vs equity choices made by large firms in Canada, France, Germany, Italy, Japan, UK and US for analyzing the path of the behavior of the debt/equity ratio, they have observed four important factors, listed below, and made important considerations :

- 1)Size: Large firms tend to have higher debt ratios respect the smaller ones.
- 2)Tangible assets: Firms with high ratios of fixed assets to total assets have higher debt ratios.
- 3)Profitability: More profitable firms have lower debt ratios.
- 4)Market to book: Firms with higher ratios of market to book value have lower debt ratios.

These results convey good news for both the trade-off and pecking order theories. Trade off enthusiasts note that large companies with tangible assets are less exposed to costs of financial

¹ R. Brealey, S.C. Myers, F. Allen "Principles of Corporate Finance" McGraw-Hill Irwin 11th edition

distress and would be expected to borrow more since they feel comforted to be secured by their physical assets in case of defaulting event. Pecking-order advocates indeed stress the importance of profitability principle, arguing that profitable firms use less debt because they can rely on internal financing. They consider the market to book ratio as an alternative indicator of profitability of the firm itself.

However, it is important to notice that both theories are right but they are applied differently: in fact, it seems that the pecking order works best for larger firms that have access to public bond markets. And that such firms rarely issue equity. In fact, they prefer internal financing as a main source of funds. On the other hand, smaller, younger and growing firms are more likely to rely upon equity issues when external financing is required.

The pecking order is also a consequence of asymmetric information and agency costs that ultimately create favorable circumstances for financial slack. Actually the pecking-order theory stresses the value of financial slack. Having financial slack means having cash and other marketable securities, readily salable real assets, and ready access to debt markets or to bank financing. Without sufficient slack, the firm may be forced to choose between issuing undervalued shares, borrowing and engaging into risky activities. However, financial slack has also a dramatic consequence that turns out being a negative aspect: any surplus of cash or credit creates a condition of temptations for the managers to overinvest or to follow an easy corporate lifestyle.

1.4 Legal framework for defining and managing the Bankruptcy procedures in US and Europe

Uncorrupted, closed system is a scenario which can be difficult to be found today; as empirical evidence suggests indeed current world is one in which corruption, distortions, unfairness are major actors that concur to the “unsoundness” of a contaminated world. In fact, in such corrupted context, the winner is the strongest and the less strong indeed is subjected to the hegemony of the former; starting from this latter consideration it seems necessary to define a legal and regulatory framework that try to constantly monitor activities, make punishments toward agents that infringe such rules and try to protect the victims from any abuse of powers exert by the stronger entities.

Hence, legal framework appears to be a useful vehicle for curbing the advent of Bankruptcy, but more specifically, provides a more stringent regulatory framework that efficiently prevent actions that could be causes of financial distress. Agency problems, moral hazard, risky attitude of investors are deemed to be major sources of failures and fighting against them means reducing the possibility of occurrences of these latter.

American Bankruptcy Law is the most evolved form of regulatory frame applied to the case of bankruptcy cases occurred and still occurring in US ; the default rules and general procedures are implemented by the Federal Law. The US bankruptcy law was enacted in 1898, in 1938 and again 1978; thus, this legislative framework pretends to be more sophisticated since it has experienced different improvements made each time with the new released versions of bankruptcies acts.

The first reform , the Bankruptcy Legal Act of 1898 was the most innovative at the time of its introduction since it demonstrated the intention to adopt a uniform legal framework applicable to different states with their own legislations; the aim was to create a uniform system in which the general bankruptcy procedures seems to be applied effectively in equal way. After such act, during 1993, was enacted “The Chandler Act” that introduced substantial modifications to the previous acts. First, it introduced specific procedures to be fulfill in case of bankruptcy, Liquidation and Reorganization, and defined the scope of their applications; Second, removed the necessity to get the unanimity agreement of all creditors for creating a plan of restructuring action. Third, it empowered the SEC of critical evaluation powers for approving business reorganization plans. Years later, the US Congress created the Bankruptcy Reform Act of 1978 which revised administrative, legal, procedural and legal sides of corporate and personal bankruptcy filings in the States. In addition, on April 20,2005 the US Congress enacted a revised bankruptcy act denominated “Bankruptcy Abuse Prevention and Consumer Protection Act of 2005 (BAPCPA) that have introduced substantial innovative aspects consisting in a less debtor-friendly procedures to be adopted in case of failures, following the path of action similar to the one adopted by EU member states.

In general, the broad American legislation facing the American Bankruptcy procedures to be adopted in the defaulting events follows the Bankruptcy Legal Code that contains valid guidelines to be applied in different events; specifically, the Code makes references of treatment of that case under six special sections that are respectively:

- 1) Chapter 7, that contains normative procedures to be conducted in cases of liquidation of assets both personal or of the firm.
- 2) Chapter 9 contains procedures for dealing with the special form of municipal Bankruptcy characterized by the presence of municipal debt.
- 3) Chapter 11 contains norms that can re-design a reorganization plan for a distressed firm, without the necessity to cease its existence; the Chapter 11 offer special procedures through

which is possible to preserve the ongoing concern of the business activity, avoiding the destruction of value of the same.

- 4) Chapter 12 contains the same procedures contained by Ch. 11 but are addressed toward household audience.
- 5) Chapter 13 provide guideline for rehabilitation and plan for reaching solvency throughout payments that are made with the income of the insolvent individual.
- 6) Chapter 15 contains ancillary applications to the previous chapters describer above; in addition, give an important attention for case of foreign insolvency condition and type-related events.

As the previous chapters contained into the American Bankruptcy Code describe, the major legal procedures adopted by the American Authorities in the event of bankruptcy are Reorganization and Liquidation. The latter is more drastic method of resolution respect the former. In fact, Liquidation occurs when the firm considers worthless spending energies for rejuvenating its own system and indeed retains to be more effective sell all of its assets, pays the debt and with the remaining liquidity generated , re-invests into new activities or redistributes it as a form of dividends among shareholders. On the other hand, re-organization is a form of “second chance” for giving opportunity of recovery to distressed firm; in fact, it consists in planning a strategy that permits the firm to re-gain its previous wasted value, maintaining Godwill and overall value that has previously created; this latter seems to be the most reasonable strategy to be implemented since it will opt for not wasting all the efforts and previously results already done/achieved.

On the other part of the Ocean, the European Bankruptcy Law which is applied by the EU member states presents similarities and differences with the American one. First, the main distinction relies upon the fact that the European Bankruptcy law has more credit-friendly orientation instead of the American one that provides more stringent burdens upon shoulders of creditors and has a more friendly debtor approach; Second, EU states present apparently a more uniform legislative as well as economic structure, completely different from the one fragmented that is adopted by US countries that indeed rely on a more severe and pronounced separation of Ownership and control economic structure ; this characterization of system may also confirm the fact that US has experienced larger and sever crises respect the ones experienced by European States (in addition to the fact that OTC markets are more developed into US, and larger companies and larger investment banks are several respect the ones in the EU countries, critical thinking may suggests also that separation of ownership and control may implies more agency problems and

moral hazard and the effects of these latter could be more mitigated under a uniform structure that tries to maintain a sovereign control).

However, EU commission has always tries to adopt procedures that seem very similar to the ones adopted in US. For example, after the introduction of Chapter 11 in the American Bankruptcy Code that introduced the Reorganization Principle, giving a second chance for a distressed firm to rehabilitate itself, also EU has created its own Chapter 11 that introduced the same procedure applicable to all the members states. In fact, the aim of the EU Commission is to create an efficient insolvency procedure for curing the events of distress, enhancing the recovery of the damaged system and preventing or preserving the soundness of this latter; thus, the relevance of implementing a smart and efficient insolvency procedure represent the EU Commission commitment to boost investments, financing and growth of the market. In addition, the Commission retains that Insolvency law in general and restructuring procedures in particular are not only a matter to be faced when a company is winding up its activity but also these rules are important throughout the lifetime of a business, as they inform investment decisions and therefore businesses' access to funding².

On May 2002, the Council Regulation (EC) No. 1346/2000 on insolvency cases in Europe entered into force. It defines the “lex concursus” that determines all procedural and quantitative effects of the insolvency proceedings in the EU community. However the Regulation is limited in its scope since there is not an effective unitary framework that is uniformly applied to the members states; this because of the diversity of the legal framework that each EU state has. In fact, basic elements of a countries' insolvency law frameworks still differ widely from country to country. Starting from this latter considerations, in recent years an academic group of fifteen academicians coming from ten EU countries³ and guided by Sebastian Kortmann (University of Nijmegen) have studied the possibilities to reconcile the legal different bankruptcy procedures under a unique scheme of action for Insolvency cases and applicable indifferently to all member states. Hence the final outcome was the creation of the “Principle of European Insolvency Law” that have been presented at the European Commission in Bruxelles, providing guidelines for harmonization of the Insolvency strategies to be applied in each European state. The working group has presented a list of issues that these Principles deals with that are :

² Source: [tps://ec.europa.eu/commission/2014-2019/jourova/announcements/insolvency-law-europe-giving-people-and-businesses-second-chance_en](https://ec.europa.eu/commission/2014-2019/jourova/announcements/insolvency-law-europe-giving-people-and-businesses-second-chance_en)

³ Belgium, Denmark, England, France, Germany, Italy, Luxembourg, The Netherlands, Scotland, Spain. EU-Member States Austria, Finland, Greece, Portugal and Sweden are not represented.

- §1 Insolvency proceedings
- § 2 Institutions and participants
- § 3 Effects of the opening of the proceeding
- § 4 Management of the assets
- § 5 Obligations incurred by, and fees of, the administrator
- § 6 Treatment of contracts
- § 7 Position of employees
- § 8 Reversal of juridical acts
- § 9 Security rights and set-off
- § 10 Submission and admission of insolvency claims
- § 11 Reorganization
- § 12 Liquidation
- § 13 Closure of the proceeding
- § 14 Debtor in possession

This set of Principles is briefly explained by a General Commentary⁴ that tries to develop the vision, the mission and the scope of the principles and possible results that could be derived in the moment in which the same principles are applied. However, these principles represent the pure willingness of authoritative entities to establish and reinforce a robust degree of stability, thus granting the soundness of the European Financial System .

Among the EU member states, it is worth doing a brief discussion upon Italian Bankruptcy Law⁵ that is one of the most sophisticated among the other EU member states, since it has more administrative procedures to be applied in case of Insolvency.

Italian Bankruptcy Law has its own story that began in 1940, when there was the idea to unify the commercial law with private one and the project was known as the “Great Calamandrei” as the name of the jurist that had encouraged this change. As a result, the legal content related to Insolvency cases flowed into a legislation of its own right named “Royal Decree” of 16 March 1942 n.26 known as the “Bankruptcy Law”. The original text of this decree was written by some members of the Committee for the Commercial code: Professors Alberto Asquini, Salvatore Satta, Alfredo De Marisco, Gaetano Miraulo and James Russo. The Committee had agreed to draw

⁴ 4 Written by professors McBryde (Scotland) and Flessner (Germany)

⁵ Source: <http://www.jus.unitn.it/cardozo/review/business/Insol.html>

bankruptcy law enforcing the procedure of liquidation rather than re-organization aimed to expel the insolvent entrepreneur from the market and liquidate the assets of his distressed business activity. procedure is contained into different sources of Law as : Article 2221⁶ of Italian Civil Code⁷¹, the Insolvency Act 1942, “Large Company in Crisis” Legislation 1999 (the so called “New Prodi Law”) with the subsequent decree amended called “Law Marzano” after the Parmalat Co. Insolvency Case. The interesting aspect of the Italian Bankruptcy Law consists in the fact that the current procedures adopted by the Italian legal system in events such as general financial distress and bankruptcy are creditor-friendly and court-based.

Under Italian law, there are several arrangements that render possible the reorganization procedure after insolvency case has occurred. One of the most common form of reorganization strategy is the “Concordato Preventivo” or “Deed of arrangement”. The process is initiated with a petition, made up of creditors that are for a minimum of 100% secured and remaining part is instead at 40% unsecured, and the same process can work in a pre-pack for part of the business but it is bureaucratically ended in liquidation. Another typology of arrangement is “Amministrazione Controllata” or the so called “Moratorium”; this procedure is only available to debtors who, despite having sufficient assets, have liquidity problems which are expected to be resolved within a relatively short period of time. In fact, the moratorium has a duration of up to 14 months and applies to debts incurred before the filing of the petition for the initiation of the procedure. In this case, the debtor retains responsibility for the management of his day-to-day activities, but under the supervision of the court. Furthermore, in order for requiring a moratorium procedure, a debtor must submit a petition to the court . The petition presented by the debtor must be supported by a written document that specifies:

- 1) A statement of the debtor's assets and liabilities;
- 2) a schedule of the debtor's creditors, and
- 3) a detailed proposal for the order of payment to creditors.

Once the court has assessed that the insolvency problems faced by the debtor are only temporary, the debtor may apply for a moratorium. Another procedure that is retained to be

⁶ Italian CC 2221 art: “entrepreneurs carrying on a trade excluding public entities and small business, are subjects, in the case of insolvency procedures and the failure of the courts, to the provisions of special laws”

“special” and applies in cases to which is necessary to deal with companies of national or regional economic importance is “Amministrazione Straordinaria” or Extraordinary Administration. This statute provides for transferring activities of a company in financial difficulties to another company as a going concern, rather than the mere provision for the winding-up of operations.

To qualify for Extraordinary Liquidation a company must meet the following requirements:

- 1) owe banks and social security institutions an amount greater than its paid-up capital, as shown in its most recent financial statement, and approved by the general meeting of shareholders;
- 2) owe not less than 1 billion lire, but not more than 20 billion lire in the form of concessionary loans.
- 3) be insolvent; that is, after the company has failed to pay three months' wages to its employees.

The court must verify the existence of such circumstances, and, usually after consultation with the Department of Trade and Industry, will issue an order declaring the company insolvent. This order transfers the responsibility for the liquidation of the debtor company to the Department of Trade and Industry, and stays all legal actions by creditors in respect of the company. The court order may cover not only the debtor company, but also any direct, or indirect holding company, subsidiaries, or any affiliated subsidiaries of a common holding company, or any companies which are lenders to, or guarantors of the debtor company, or any other company from amongst those categories listed above, where the amount involved exceeds one-third of the total value of the debtor's assets.

The court order may apply to such companies if they are insolvent, but they need not satisfy the three "qualifying" conditions already mentioned. Should any of the companies have already been declared in bankruptcy, the order of the court will be formally revoked and the affairs of those companies will be handled as part of the administration of the main debtor company.

Furthermore, the Italian Bankruptcy Code provides also valid “Exit Mechanisms” that are applicable for cases already mentioned; however all of them share a common goal that consists in the achievement of the “satisfaction” of all the creditors derived from repayments of debt; however, the application of exit mechanisms to “Concordato Preventivo” can drift on for many years while the 40% unsecured not being met on payout and the court moving the company into bankruptcy. In “Amministrazione Controllata”, indeed, the exit strategy follows the agreement of the creditors to

the moratorium and the satisfaction of the moratorium terms or the expiration of the two years. Italian Bankruptcy law is designed according its complex legal framework thus bankruptcy procedures seems to be less practical to be executed.

1.5 Compared Data for showing Bankruptcy events in US and Europe

From a personal research that I have conducted using the OECD.org database for finding data on bankruptcies or type-related events or, countries capital structure-policy adopted for understanding their overall indebtness upon the system, I have found data on “Financial corporation debt to equity ratio” showing the percentage of the d/e ratio on a sample of 20 OECD countries for the year 2014, I have interestingly noted that the number of countries engaged into leveraged activities for financing its own business activity is tremendously increase; the bar chart reports that the first country that has the highest ratio is Greece with 10.8, followed by Australia with 8.7, Chile with 7.7 and Korea with 7.0 ; the country with the lowest point of debt/equity ratio is Hungary with 1.2. The average is 4.72. Countries that are within the average are Germany with D/E equals to 4.5, Norway and Portugal with D/E equals to 4.3 ⁸

Table 1⁹. Numbers of corporate insolvencies in some Western European countries and the US, 2008-2012

Western Europe	2008	2009	2010	2011	2012
Austria	6500	7076	6657	6194	6266
Belgium	8476	9382	9570	10224	10587
Denmark	3709	5710	6461	5488	5458
Finland	2612	3275	2864	2944	2958
France	49723	53547	51060	49506	48340
Germany	29580	32930	32060	30120	28720
Greece	359	355	355	445	415
Ireland	773	1406	1525	1636	1684
Italy	6498	8354	10089	10844	12311
Luxemburg	590	698	918	961	1033
Netherlands	4635	8040	7211	6176	7373
Norway	3637	5013	4435	4355	3814
Portugal	3267	4450	5144	6077	8605
Spain	2528	4984	4845	5910	7799
Sweden	6,298	7892	7546	7229	7737
Switzerland	4222	5215	6255	6661	6841
UK	16,268	19,908	17,468	18,467	17,748
Total Western	149,675	178,235	174,463	173,219	177,685

⁸ Data described above are available at: OECD (2015), Financial corporations debt to equity ratio (indicator). doi: 10.1787/a3108a99-en (Accessed on 24 September 2015)

⁹ OECD (2010), “Measuring Entrepreneurship”, OECD Statistics Brief, No. 15, www.oecd.org/dataoecd/50/56/46413155.pdf

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Table 2¹⁰: : Numbers of corporate insolvencies in some European countries and the US, 2008-2012

Central and Eastern Europe	2008	2009	2010	2011	2012
Bulgaria	ND	ND	700	685	1285
Croatia	ND	ND	1501	4878	7000
Czech Republic	ND	ND	5559	5880	7723
Estonia	ND	ND	504	623	588
Hungary	ND	ND	17487	30757	36274
Latvia	ND	ND	2407	813	867
Lithuania	ND	ND	1496	1302	1354
Poland	ND	ND	685	762	881
Romania	ND	ND	21692	22650	21974
Slovakia	ND	ND	830	870	866
Slovenia	ND	ND	510	575	595
Total Eastern Europe	No Data	No Data	69895	69895	79407
US	43456	60837	56282	47806	40075

The following data provide valid results that verify the validity of the research conducted personally using the OECD Datasets and withdrawing conclusion upon the countries that use financial leverage for financing its own business activities (hence engaging into too much risk) against the ones that prefer internal generated funds or other sources more certain and riskless (for example Hungary of Netherlands); Hence, comparing the OECD data relative to 2014 with the ones provided by the tables above that analyze Insolvency occurrences during period 2008 -2012, similar trends could be detected ; First, in the valuation analysis of Insolvencies cases in Europe, the tables provide a wise distinction for results held respectively in Western European Countries and Eastern European ones ; on average, both parts of the European Continent have experienced an increase in the number of insolvencies, with a consistently higher number of insolvencies cases in western countries (177.685 in 2012) respect to cases happened in East Countries (79.407 in 2012);

From Western Europe perspective, in 2012 the highest number of Corporate Insolvency cases has occurred in France (>48 000), followed by UK (>17000), and Italy (>12000); meanwhile the lowest number of Corporate distress was registered in Greece (<500); Overall, the trend was of general increase in the number of insolvencies cases in all the western EU countries in the time period which

¹⁰ Source provided by :http://www.creditreform.com/fileadmin/user_upload/CR-International/local_documents/Analysen/Insolvencies_in_Europe_2014-15.pdf

spans from 2008 to 2012; the peak of the insolvency cases was particularly suffered during the 2009, followed by a mild decrease in years thereafter.

From East Europe perspective indeed in 2012 , the highest number of Corporate Insolvency cases has occurred in Hungary (>35000) followed by Romania (>20000); meanwhile the lowest number of case was registered in Estonia (<600); Overall the trend was of general increase of the number of insolvencies occurred during period 2010 to 2012 (since no data available from 2008).

Comparing these data on European Insolvency cases with the US ones , we can easily infer that US countries tend to experience lower insolvencies cases respect the European countries, especially Western ones (one possible explanation could be a more stringent regulatory framework adopted that try to reduce insolvencies cases) and that have experienced a conspicuous number of distressed events in the year 2009, when financial crisis occurred and US were the epicenter of such financial turmoil that spread all over the world.

Recent Data (2013-2014 from OECD Database) have demonstrated that, overall, the seeds of recovery of the European economy seems to be likely to happen; in fact, in recent years, the number of insolvencies cases has slowly decreased in all the European countries. Despite that fact, Greece and Italy seems to follow a different pattern of behavior (2015); specifically, Italy has registered an increase n the number of corporate insolvency cases in conjunction with an increase in the overall amount of unemployment rate¹¹ (almost 12.8% > 7.8% as average displayed by OECD countries). Even suicide rates have consistently increase. And these latter can be considered as the unquantifiable costs of financial distress and insolvency cases in general; when failures occur, these have a strong impact not only reflected in the lost of economic value of the firm that cease to exist but also into human costs since failures of a business encompass dismissal procedures of the members of the organization, that become unemployed and that in turn become psychological stressed and frustrated and hence decide to liquidate even themselves. A dramatic parallel situation with the liquidation of a distressed firm.

¹¹ OECD (2015), Unemployment rate (indicator). doi: 10.1787/997c8750-en (Accessed on 25 September 2015)

1.6 What are the major consequences faced by entities and market after distressed events?

When Financial distress occurs and, specifically, bankruptcy appears to be inevitable, the corporation will have two opportunities at hand: evaluating whether it is possible to engage into a reorganization plan, making all the possible efforts for seeking recovery from a situation that isn't worst at all, or, if its end seems to be more necessary than sufficient, the company will decide to end procrastination of its ending, hence will decide to seize its agony immediately; Hence, in that case, the corporation will follow liquidation procedures that will turn the existing assets into money, paying all the debts incurred during its existence; however, if money was sufficient enough to repay the debt (rare phenomenon), then the remaining monetary amount could be evenly split among the shareholder of the past business activities. Hence as a quantifiable consequence of the liquidation procedure is that at the end, the shareholder may or may not receive money left over after the destruction of value. However, there's part which is beyond the quantifiable method for estimating effectively the costs that a liquidation procedure creates thereafter its occurrence ; certainty, such costs are the human costs, the pain suffered for becoming unemployed, the sickness and mental distress of the unemployed previously hard workers that determine the non-quantifiable costs of financial distress. These latter have very dangerous implication on the overall stability of the entire system. Overall the consequences that a distressed firm suffers are several: first, the distressed firm has lost its reliability and reputation among the other firm into an industry, especially when its failure was due to unfair pattern of actions; Second, banks and other creditors are iper-cautious in the event in which possibly the shareholders of the previously distressed firm decide to start up another business activity and decide to undertake borrowings. Third, even suppliers fear to enter into contact and dealing with individuals previously engaged into business activities of a distressed firm; hence the lost of reputation in the market has strong impact on the economic agents of the system, both consumers (thus they become skeptics regard the overall quality of products/services that eventually a new business with the organizational members of the previous distressed firm provide, sales will never reach excessively satisfactory levels, sales could be turned out being not strictly positive...) and producers. Overall skepticism is the attitude addressed toward the distressed firm and its members. Hence, these indirect bankruptcy costs make the perception of distress into a reality. This latter condition was demonstrated also by an interesting

study held by an economist ,Opler¹², that from his empirical researches draw the conclusion that magnitude of these costs account for a range from 10 to 25% of firm value.

1.7 Which is the optimal strategy for restoring the Soundness of the Financial System?

So far, there have been analyzed several aspects of financial distress and bankruptcy events; in fact, having identified the general external causes that hit the soundness of the financial system that, in turn, are reflected into the destabilization of unit of integrity of the entities inside the system itself, then having identified the advent of financial distress and the bankruptcy, and the treatments of this latter mechanism from three different subject matters (Corporate finance, Law and Economics and Statistics), and having determined the causes that of such events as well as the consequences, what is left is dealing with possible remedies that can be adopted when failures occur . Thus, the soundness of the financial system can be preserved only with the adoption/implementation of specific remedies that turn out to fit in perfect way the situation that they have to threat and the broad context in which they have to be applied.

For this purpose Chapter II will provide valid examples of strategies/cures for granting the harmonious equilibrated existence of the whole system. The tools to be used are practical and applicable to real quantifiable situations (value assessment criteria) and theoretical ones, based substantially on probability framework (risk assessment criteria based on probability frames). However, in Chapter I, even in the explanation of causes and consequences for the occurrence of the distressed event, the presence of the Uncertainty component is always involved and the same element dominates the whole financial ,and even human ,scenario. Thus, a proper tool is deemed to be efficient if effectively reduces the influence that the Uncertainty component exerts over broad events that made up the financial scenario.

¹² Opler, T. and S. Titman, 1994, Financial Distress and Corporate Performance. Journal of Finance 49, 1015-1040

CHAPTER 2

Tools for preserving the Soundness of the Financial System. A comparison between traditional and modern methods applied.

Introduction

Chapter II analyzes the tools that can be used for preserving the harmonious sound of the system, knowing also the presence of uncertainty component; hence, first it will analyze the nature of risk that dominates the market and it will discuss the point according to which understanding the systemic risk is the key for shaping new effective remedies to be adopted in lieu of insolvency cases; once that the source of uncertainty is detected, Chapter II discusses on endogenous sources and resources that trigger the stability of system, and eventually several remedies are suggested to be applied for solving different problems risen. Besides , Chapter II investigates deeply the strong interaction between certainty an uncertainty spheres that turn out to have also a micro and macro dimensional relation in the financial system. Furthermore, the core of its discussion relies on the method adopted in assessing risk presence into the market, viewing a compared model made up of traditional and modern approaches used for predicting right investment choices and avoidance of failures. In addition, an interesting relationship existing between bankruptcy and financial leverage effect is discussed; Chapter II ends with a focused topic related the possible remedies to be adopted for reducing the probability of defaulting events' occurrences and the precautionary techniques to be used against these latter ones.

2.1 Identifying the nature of the Risk into the market.

Financial market is a multivariate environment of continuously interconnected individuals that make advantageous transactions; however, investors and other legal entities are not the only agents that interact in such context, but also risk and other uncertainty actions are legitimately deemed to shape the context itself and dealing with its agents, creating conditions that may hamper the equilibrium (soundness) of financial world ; specifically, investors are continuously facing the risk element especially when they decide which is the best investment that

they could make in order to increase their returns in the market. Hence, they must understand the nature of the risk which they are dealing with and eventually adopting strategies that can reduce the probability to engage into too excessive risky activities that ultimately can be turned into failures. Thus, in order to avoid failures for firm, investors must be careful about investments that they decide to undertake. Hence, studying risk is the starting point that permits them to make advantageous choices.

Risk can be defined as the chance that the expected return of an investment will be different. Thus, Risk is associated with uncertainty and its presence is, despite the fact that it could be not properly desired, also necessary for the natural functioning of the financial market. Corporate finance identifies the existence of two types of risk that can be distinguished according their sources and the possibility to be diversified: Systematic and Unsystematic ones. Systematic Risk, also known as “market risk” or “un-diversifiable risk” is associated to unpredictable events that suddenly occur upon entire market that cannot be easily controlled nor eliminated through diversification; only hedging procedures seem to be partial remedies to mitigate the effects that the occurrence of these events could creates. On the other hand, Unsystematic Risk, known also as “specific risk”, “diversifiable risk” or “residual risk”, is the uncertainty that has as original source the firm itself and it could be reasonably diversified.

In addition, in order to measure the risk, investor uses two natural indexes coming from econometrics field that are Variance and Standard Deviation. The variance is the expected square deviation from the expected return and is defined by the formula: $\text{Variance}(r_m) = \text{expected value of } (r_m - E[r_m])^2$ where r_m is the actual return and $E[r_m]$ is the expected return; besides, the Standard deviation is simply the square root of the variance formula ($\sqrt{\text{Variance}(r_m) = \text{expected value of } (r_m - E[r_m])^2}$). Hence, through these two formula, an investor has the possibility to know approximately the spread of the investment choices to be taken.

2.2 Tools for investigating and curing endogenous and exogenous causes that trigger stability of a system.

As noted earlier, Risk has two main different sources that can be defined as “endogenous” and “exogenous” ones. Accordingly its categorization, Risk can be managed or not using the method of diversification. This actually represent a consequence once the investor identifies the typology of risk which he is dealing with. However, it could be very interesting to know which are the tools used for investigating and curing the endogenous causes as well as exogenous ones that creates the possibility of arising of risk that in turn affects respectively the financial integrity of the firm and market. The

endogenous causes that represent a valid source of rising risk are mainly connected with organizational activities held inside a company; specifically, mis- coordination, mis- conduct of the members of firm, asymmetric information, moral hazard and other well-know agency problem, poor monitoring procedures ... are all possible sources of risk that hamper the prosper life of the business activity; hence, preventing them means, by transitivity property, preventing also the rising of excessive risk that could negatively impact the existence of the same entity. For avoiding problems of mis- management nature, the best tools to be used are strict regulatory frameworks that punishes severely mis-conduct of the agents and rewards instead the merits as well as fair and transparent practices held inside the organization. Strict regulatory frames , incentives and meritocracy built-in system can be a successful tool that try to limit negative cases that can be practically avoidable.

Besides, the already mentioned tools are more easy to be adopted and to be used respect the ones that indeed are used for investigating the exogenous causes and possibly curing the adverse outcomes that derive when these events suddenly happen; exogenous causes that hamper the stability of the entities because these latter are subjected to the influence exerted by the external environment, can be indicated to be macroeconomics variables such as inflation, deflation, business cycles, fluctuation in combination with events even created by human beings such as wars or dominated by nature such as famines or health diseases.

Hence, the practical tools that can be used even if applied to restricted situations that can be easily managed, couldn't be sufficient enough to fight against this combination of forces. Thus, making inferences and predictions, following the past trends, constantly gathering up-to-date information upon the economical but also social conditions of the overall market and avoiding unreasonable actions (wars for example) may represent the only activities that a rational individual has to perform and eventually adopt precautionary measures that permit him to be insured against the occurrence of the worst outcomes.

2.3 Micro and Macro-economical dimensions of Financial Distress .

Endogenous as well as exogenous causes lead to the creation of circumstances that demonstrate how micro and macro environments are perfectly intertwined and correlated: one influence the other and viceversa. A policy adopted inside a micro context has also a conspicuous impact on a broad context when such entity entertains relationships with external ones. Hence, the advent of financial distress and bankruptcy events into micro context has also important implication on the macro context . In a oligopoly or monopoly environment, the occurrence of bankruptcy could be a closed event characterized

by the liquidation of the business activity without affecting consistently the surrounding context; on the other hand, if the financial distressed event is likely to occur into high competitive market, then the distressed firm that ceases to exist could damage (or favorite) the others firms into the industry thus creating very consistent consequences that affect the entire macro system.

As an economist explained, Hendel, assuming a competitive environment as the context in which the almost distressed firm is operating, in the event in which the firm is highly indebted, it has two face two decisions (restructuring or liquidation procedures) in order to seek a recovery or to cease its existence; but before taking the drastic remedy of its own liquidation, the distressed firm can adopt possibly remedies that can ultimately lead it to seek recovery such as the adoption of a more aggressive pricing strategy ; such strategy will permit it to sell its products below the cost margin in order to create an immediate liquidity that could possibly drive it to achieve recovery. However, with this aggressive pricing policy the distressed firm becomes able to capture part of the market share to competitors that, in turn, will be seriously damaged because of their losses suffered ; thus, even competitors will engage into a destructive aggressive pricing policies in order to compete with the distressed firm and turn down its hopes for recovery from distress.

In general, bankruptcy of a large company can possibly shock the entire national or world economy. An example was also proved by empirical data that described how the occurrence of the bankruptcies that hit the Enron co. and WorldCom had an adverse impact upon the whole American economy as well as the rest of the world economy; in fact, it was demonstrated that the event of bankruptcy of large corporations hits the economy of the country, changing profoundly the patterns of consumption of its consumers (GDP indicators tend to decrease) hence lowering its growth level, plus an increase in the number of unemployment rate, hence creating negative consequences suffered by the society (crime, poverty, mis organization..), plus an increase in financial instability, uncertainty, further insolvencies and other type-related of adverse events that in turn spread out and , since their nature of epidemic contagions, inevitably affect the health of the other economies worldwide (domino effect).

Perhaps, the evidence has demonstrated that little things shapes the larger ones. Thus, curing and preserving the well functioning of the former has a strong implication also in the proper functioning of the latter one. In fact, using this inducting approach, it can be concluded that a regulatory policy may prevent events of financial distress if it used on fair-grounded basis both in micro environment and in macro environment, hence reducing the number of uncertainties that are more likely to occur in this last scenario .

2.4 Traditional Risk-Assessing methods compared with Modern risk evaluation approach: making the right investment

Traditional risk assessing methods are ones that are mainly based on probability frameworks since these models deal with estimations of risk. An example is provided by “The Efficient Portfolio” –model idealized by H. Markowitz in 1952. Ideally, the firm could suffer financial distressed condition and eventually bankruptcy due to bad investments’ decisions taken during business transactions by its investors. In fact, one possible cause of default may be derived from the fact that the investors at the time in which the firm’s investment decisions were necessary to be done, indeed, were taken poorly and without awareness respect to estimation of return and risk that these offered at that time. Hence, in order to avoid such problem, rational investors, that are aware of the difficulties that the firm could potentially suffer subsequently, are looking forward taking a well diversified portfolio, that offers them the opportunity to reap the highest possible amount of return for any given level of risk.

Thus, a good investment is one that is made upon a portfolio well diversified, meaning that the specific risk is eliminated through diversification technique and that the risk of the entire portfolio depends on the market risk of the securities included in that portfolio¹³. These latter are the two basic assumptions with which Markowitz has constructed its own model.

The variability of each single security contained into the portfolio is measured by Variance and Standard deviation formula. Diversification implies that these variability indicators must be kept lower as possible. Hence, once the investor knows how to calculate the spread of each security, he has the possibility to determine the Expected Return and Variance of the whole portfolio .

Formula for Expected Portfolio Return:
$$E(R_p) = \sum_i w_i E(R_i)$$

Formula for Portfolio Variance:
$$\sigma_p^2 = \sum_i w_i^2 \sigma_i^2 + \sum_i \sum_{j \neq i} w_i w_j \sigma_i \sigma_j \rho_{ij},$$

Where $\rho_{X,Y} = \frac{\text{cov}(X,Y)}{\sigma_X \sigma_Y}$ is the Correlation formula expressed as the ratio of covariance over standard deviations. Actually the covariance, hence the correlation coefficient, is an important indicator of correlation relation among securities contained into portfolio; for most part stocks tend to move together,

¹³ Bradley, Myers and Allen . “Principles of Corporate Finance”, 10th edition, pag. 174

hence the correlation coeff. is positive as well as covariance; indeed, if the stocks are unrelated, their correlation coeff. would be zero as well as covariance. Finally, if they move in opposite direction, correlation coeff. would be negative such as covariance. Hence, the greatest payoff derived from diversification is represented by the portfolio that has its own securities negatively correlated.

A rational investor easily understands that the gain from the diversification strategy depends on how highly correlated the stocks are. If the stocks move in the same lockstep, then there are not gain from diversification; meanwhile, if the stocks move in opposite directions, the portfolio would have no risk.

However, considering securities in isolation from the market is not a wise choice. In fact, the risk of a portfolio depends also on the market risk of the securities contained in it. This “sensitiveness” of the stocks to market movements is called Beta. The Beta coefficient is expressed as the ratio between covariance with the market and variance of market. Stocks that have Betas >1.0 tend to magnify the movements of the market; meanwhile, stocks with Betas between 0 and 1.0 tend to move in the same direction as the market. Thus Beta is one of the major component that define the reaction of the portfolio component to movements upon the market.

Markowitz carefully inserted all the elements inherent the measurement of return and risk into his model that consisted in showing the combination of the two components along an “efficient frontier” where ultimately allocated the efficient portfolio that were offering the highest return for any given level of risk or the lowest risk for any given level of return. The rational investor should opt for picking one of them.

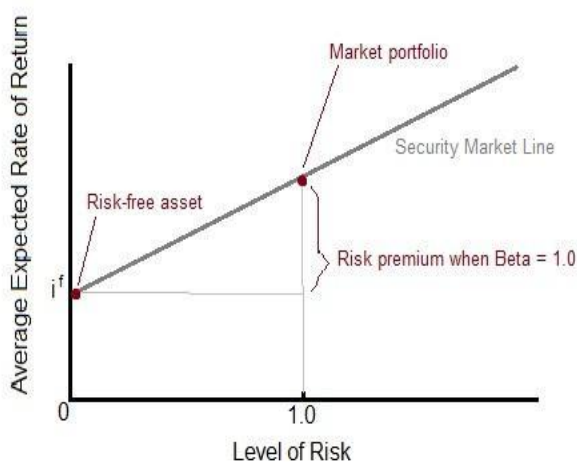
Based on this premises, Jack Treynor (1961) William F. Sharpe (1964), John Lintner (1965) and Jan Mossin have constructed the CAPM model, which constitutes a very useful tool for managing the expected return-risk outcome of a portfolio; specifically, the CAPM is used for pricing an individual security or portfolio; it takes into account the notion of the market risk premium that is considered as the difference between the return on the market and the interest rate ($r_m - r_f$); focusing on the main idea that is provided by the CAPM model, the expected risk premium varies in direct proportion with the coefficient Beta; thus

Expected risk premium on stock = beta x expected risk premium on market

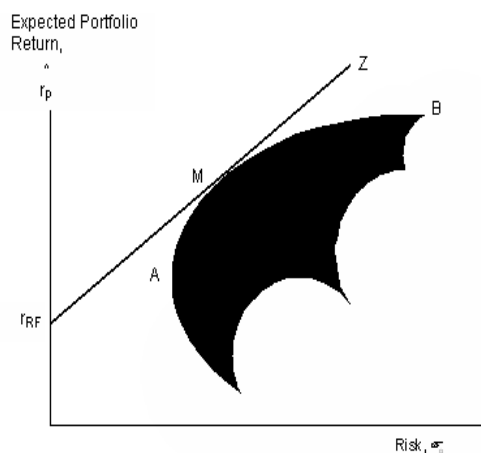
$$\text{Or } (r - r_f) = \beta(r_m - r_f)$$

This formula has an explicit message that consists in the idea that an investor has the possibility to hold a mixture of the market portfolio and risk free loan ,thus obtaining an expected risk premium of $\beta(r_m-r_f)$. Besides the rational investor will never hold a stock that has an expected risk premium below $\beta(r_m-r_f)$. Thus, as risk involved into the investment decision is going to increases also the expected return will increase proportionally; CAPM in fact, says that the risk premium should increase in proportion to beta and the efficient portfolio that a rational investor should take are the ones that lie on the upward-sloping security market line (SML)(fig1).

SML and CAPM model (fig 1)



Markowitz Efficient Frontier (fig 2)



The already presented models are just generalization of most complex versions. The aim of this paragraph of Chapter II is to provide more summarized analytical tools that must offer insight on how the investor behaves and ought to behave in the moment in which he faces investment decisions and eventually give an proof for recognizing bankruptcy as a consequence generally occurred when an investor makes the wrong investment into the market; in addition, the model offers guidelines for undertaking right investments, since these latter are only ones that promise conspicuous amount of return for any given level of risk; thus, these methods must be used carefully even for reducing amount of risk eventually undertaken by investors during their decision- making process. The interesting fact that makes these models sophisticated consists on the presence of analysis of risk compared with the return that the eventual investment promises. Well, these same models, however, were developed in a period that, compared to the present era , were applied in completely different economic situations ; the past economic context was surely less complex respect nowadays one, where OTC operations and several

type-related trading activities on the stock market are more developed and have increased in sophistication; besides, the application of these already presented models was fast and almost immediate in the past respect to the present , taking into account the fact that the investor's decision was more simple to be undertaken respect what the investor's of nowadays context has to face, because of multiplicity of investment choices opportunities that he could pick because of introduction of more modern and advanced technical tools in the stock market plus changes of investors' attitudes and priorities to be reached. However these already presented models are the basics and caterpillar of traditional finance theory for analyzing the risk component that could averse the decision of making investments. Hence, these models could be taken into account as valid points of reference for the development of more modern ones eventually more suited to the dynamics of new context in which these same could be applied.

In addition to the Markowitz' and CAPM model, economists have developed others models that are more focused on the analysis of the risk component. Specifically, a more in-depth approach to the risk component analysis is offered by the **APT** or **Arbitrage Pricing Theory** studied by S. Ross. The premise from which the analysis of the model starts is more realistic one; it assumes that the return of each stock contained into the portfolio depends partly on pervasive macroeconomics factors and "noise", these latter to be defined as unique of the company for which the model is applied. The return is expressed with the following equation:

$$\text{Return} = a + b_1(r_{\text{factor1}}) + b_2(r_{\text{factor2}}) + b_3(r_{\text{factor3}}) + \dots + \text{noise}$$

The theory does not give specifications of what the factors are; these ones belong to broad category of macroeconomics variables that affect the equilibrium conditions of wide system (for instance inflation, unemployment rate, deflation etc); the noise indeed represent the firm-specific source of risk; the difference between "factors" and noise" as a source of risk consist in the facts that the former cannot be diversified respect the latter that indeed can be reduced or eliminated through diversification. This statement has important implication in considering how much the risk in this model affect the risk premium on the stock: the model provides evidence that macroeconomics factors affect the expected risk premium on a stock , meanwhile the specific risk does not.

A variant to the APT model that had more simplified and immediate analysis was offered by researches conducted by Fama and French (**Fama and French Model**). They developed a three-factor model for estimating the expected return of an investment; the only difference with the previous model consisted into the fact that Fama and French were precisely defining the three major factors that ,according their own researches, were considered important in determining the expected return of a stock; specifically these categories were : Market factors (defined as return on market index minus risk free interest rate), Size factor (return on small firm stocks less return on large-firm stocks) and Book-to-market factor (return on high book-to-market-ratio stocks less return on low book-to-market-ratio stocks).

Fama and French equation take the form of:

$$r - r_f = b_{\text{market}}(r_{\text{market factor}}) + b_{\text{size}}(r_{\text{size factor}}) + b_{\text{book-to-market}}(r_{\text{book-to-market-factor}})$$

Hence, ultra cautious investor that decide to adopt this model of analysis before making his investment decision, should follow a three step processes of evaluation: 1) identifying the three factors already provided by the model 2) estimating the risk premium for each factor , determining which one has a more strong impact and 3) estimating each factor sensitivities and finally add up the results.

It is worth noticing that the main part of stability of the financial system depend upon investment choices undertaken by financial investors; hence, right investment decisions have positive impacts on soundness of the whole context. However, the sound system is comprehensive both of certainty and uncertainty elements. The perfect sound is just a balance of the two forces. The ability of the investor consists in giving equal balanced estimations of the two elements for preserving the entire equilibrium of the system.

The traditional theory and methods already mentioned are giving valid insights regard the way in which the right investments into financial market must be made. However ,a more modern approach is used , especially when an investment decision must be evaluated and undertaken, consists in evaluating the fact that the company cost of capital is considered as the right discount rate to be used into investments that have a level of risk equals to the overall business activities. Specifically the company cost of capital is the expected return on a portfolio of all the company's existing securities. The value of

the entire firm is determined by the sum of its debt and equity components , $V=D+E$; These elements are all market values and the market value of equity is larger than the book value. Hence the company cost of capital is expressed by the following mathematical expression :

$$\text{Company cost of capital} = r_d D/V + r_e E/V$$

representing a sort of blending effect between cost of equity and cost of debt; for this reason, the already presented expression is called the WACC (weighted average cost of capital). The more difficult task in using such expression consists in deriving the cost of equity; this goal is reached by the CAPM model. The cost of equity is considered to be the expected rate of return to investors in the firm common stock, and in turn the CAPM model states that such expected rate of return is equal to the risk-free interest rate plus a risk premium that depends on beta and the market risk premium.

Thus, a rational investor that has to take an important investment decisions, first evaluates the present conditions in which his investment decision must be made (evaluate the macro context and draw conclusion upon which factors could positively or negatively influence its eventual choices), then evaluates the risk of the investment projects that he wants to undertake and plans strategies to be adopted and the alternative resolutions in cases in which difficulties in applying these ones arise. Surely, different investment project has different level or risk, and this latter varies continuously. However, in dealing with it, for simplicity, financial investors and managers assume that the risk involved in each different investment activity will be the same in the future , hence they will use a single risk-adjusted discount rate. Although uncertainty interacts almost always with financial transactions performed by firms, investors that use a step-by-step approach in order to make not hazardous investment decisions could in part reduces the possibility of the occurrence of defaulting events for the firm for which they are operating.

2. 5 Traditional Risk-Assessing methods compared with Modern risk evaluation approach: financial leverage and bankruptcy

Making wrong investment decisions and do not take into account the fatal occurring of risk in every business activity, may constitutes basic premises that favorite distressed events, specifically also bankruptcy. But another source which could ultimately be defined as a potential source from which the seeds of firm's self-destruction are contained is represented by the debt-financing method of a company.

In fact, the overall value of a company is (as already discussed) defined to be a mix of debt and equity. Many firms that are unable to generate internal cash funds and exploiting them for financing its business activities, use debt for funding their initiatives. Hence, raising debt will tend to increase the overall value of the firm, since this latter will become able to perform the business activities that had intention to perform previously. This effect is called financial leverage and is said to increase as the company raise the level of debt. However this action is too risky and should be undertaken if and only if the company believe that its return on assets (ROA) will be higher respect the interest on the loan that they have undertaken. In fact, in case in which the ROA does not exceed the amount of interest on the loan to be repaid, the firm will losses on return on its equity and profitability. Thus, if the debt is further risen and the company is unable to make repayments of interest on loan, leverage is not valuable strategy anymore, instead having further increased the amount of debt appears hazardous and fatal action for the life of the firm itself. When excessive leverage effect could lead to eventual disastrous event, the company can engage also into deleveraging strategy that consists in reducing the leverage ratio or specifically, payoff the debt that is indicated by the balance sheet of the firm in question. But also this method has destabilizing effects on the equilibrium of the financial systems. Hence, the leverage effect should be used in precautionary way, taking into account all the possible positive and negative effects that this can eventually create on the whole system.

So, what would be suggested to do in the event in which the firm decide to use the leverage method for sustaining its growth? What action should be followed in order to preserve the equilibrium of the system?

Well, first it could be better that the financial leverage method is adopted by larger firm with consistent amount of tangible assets, since these latter are a form of guarantee against debt to be repaid when the firm starts to rise it. Second, it should be provided a threshold parameter above which increasing leverage could become riskier. In addition this parameter's value should fit the characteristics of the firm that is exploiting the leverage (size of the firm, ROA, ROE, profitability etc). Third, the firm must have a well defined investment project and must be sure that such project prospects per se positive returns; this latter reason renders the project worth of the action of incurring in leveraging for funding it. Forth, the leveraging method should be applied in periods of stable economic conditions otherwise, during recession periods, the method could result excessively dangerous.

To summarize, the event of financial distress and specifically of bankruptcy, could occur with or without the presence of financial leverage effect . However, if a firm engages in this latter action, it consistently increases the possibility to incur into defaulting events. In fact, one immediate and plausible consequence of increasing borrowing activities is represented by the predictable advent of bankruptcy. Supposing that a firm has engaged into excessive level of debt; then, the negative effect of this latter outstanding action consists in the fact that the firm has raised both the scale of its business activities as well as the probability of losses that works the ground for bankruptcy : in fact, reduced revenues (excessive risk aptitude tends to destroy the company's reputational concerns on reliability since an insolvent firm is not reliable), lowered valuation and returns are the classic premises for the fatal end of an entity.

2.6 Possible remedies to be adopted in the event of Financial Distress

Financial Distress represents the quasi- final stage of a previously healthy life of a firm; Bankruptcy is the irremediable consequence for not having adopted remedies before that defaulting illnesses, that hit the entity , make worse. In fact, before that bankruptcy seems to be unavoidable, the firm may decide to undertake actions that try to give a second chance for re-establishing a sound existence. Among these actions, the first optimal remedy that could be adopted is restructuring. This is one effective method for restoring value that has been lost by the firm once financial distressed event has occurred. The main goal of restructuring, in fact, consists in maintaining alive the business without the destruction of any of the value previously created as well as its human resources. In doing so, the major tasks that it has to accomplish are the repayment of the debts incurred and, alternatively, the replacement of the debt with fixed interest by securities that have residual payoff¹⁴.

Hence, in order to reduce the debt, the possible solutions that can be adopted are 1) raising new capital 2) renegotiating terms with creditors and 3) merging procedure with another company. The first remedy is applied when the firm decides to sell part of its assets, increasing liquidity and permit it to repay its outstanding obligations; then, the second remedy indeed is a sort of “reformulation” of the previous agreed terms between creditors and debtors; an example may be represented by re making an agreement upon extension of the maturity of the debt, or providing a reduction of the required interest or principal payment on the existing debt or an exchange of the debt on equity ; finally, the merging action allows the weak company to seek a recovery and to restore value thanks to the aid provided by the shoulders of the

¹⁴ Gilson et al. (1990, 325)

strongest company with which the weaker one has decide to merge. However, this latter approaches re-enters in what is defined financial side of restructuring; indeed, there exists another type or restructuring that is effective and it is the operational one; the operational restructuring , in fact, consists in the rejuvenation or completely change of the government/organizational body of the entity. In case in which defaulting events occur, the management board is completely replaced by a new one, that is deemed to have the proper skills and competences for restoring value of the distressed firm. The replacement of the management board is called management turnover¹⁵. Empirical search have demonstrated that, after management turnover occurs, the firm again runs for re-establishing its supremacy into the market. However, restructuring has both positive and negative aspects; these latter are represented by the fact that restructuring procedure requires also to cut off all the unnecessary costs among which, from the firm's perspective, there are encompassed also wage contracts. In fact, many employees are laid-off with a consequent drop into the employment rate and its related negative effects on the entire wealth of the community . What is gained in economic terms is lost in human ones.

Hence, there are many other strategies that could be adopted in order to cure the event of financial distress. Surely, the internal re-organization of the distressed firm is the most effective remedy that enables the firm itself to directly see the results of its recovery. Recovery may be reached also through the implementation of a more stringent monitoring procedure upon any financial action that the firm wants to pursue; for example, in the case in which the firm uses the leverage method for boosting its productivity or growth, it could be plausible that regulatory authorities pose limits in the moment in which the firm undertakes excessive risk.

Furthermore, the event of financial distress is also encouraged by moral hazard and asymmetric information; the classic problem of agency cost is solved with a call in action of regulatory authorities and many punishment procedures that try to inhibit every imprudent action made by managers/shareholders and other organization's members. Against asymmetric information, indeed, the most effective actions that advocate the principles of transparency and fairness are implemented by accounting boards and other type-related accounting institutions that enact specific accounting rules ,necessary for granting the reliability of financial statements provided by the company; otherwise , the accounting board is going to harshly punish those whom submit "creative" accounting-related statements.

¹⁵ Gilson (1989, 243)

Chapter 3

Discussion on the Efficacy of Tools adopted in lieu of Insolvency

Introduction

Rhetorical questions provide answers that clarify and give further explanations to the cases already presented in Chapter II. Chapter III contains also my “capital” contribution for idealizing a new approach that could be used for managing both certainty and uncertainty components’ influence over eventual distressed situations that a firm experiences. A final verdict upon my presented “idea” will be drawn by my descendants.

3.1 Is Bankruptcy event mainly determined by certainty or uncertainty components?

Bankruptcy is a consequence derived from a process that involves the gradual loss in value of the firm. Hence, bankruptcy could resemble also a remedy for accelerating the corporate death of an entity that has experienced defaulting events and seems excessively troubled for starting a recovery process that eventually enables it to restore its prior value. Thus, firms and management-organizational units look at bankruptcy as the last resort remedy to be engaged in cases in which the firm’s recovery seems unlikely to occur, since its occurrence is also associated with consistent costs in addition to destruction of value. Corporate bankruptcy resembles a process that derives from rational circumstances as well as events dominated by uncertainty. Thus, the rational dimension is represented by the fact that the firm rationally believes that it will be unable to pay-off its debts and to seek recovery in alternative ways, hence it prefers to liquidate itself for the repayment of all its own debts and any claims that creditors have against it; hence, this latter action is the result of a reasonable and thoughtful consideration made by the firm itself for its own welfare; on the other hand, the irrational dimension of bankruptcy is represented by the fact that this latter mechanism is just a consequence that derives from a more complex process, that encompasses also activities influenced strongly by the interference provided by uncertainty component, such as risk and/or general unpredictability of events, that are unavoidable elements, existing in the whole financial context. Hence, as the question whether bankruptcy is mainly determined by certainty or uncertainty elements arise, the plausible answer would be: both of the two components

determine this results. Empirics have demonstrated that every rational investor deals with uncertainty (risk) component and , although he assumes an extra-cautious behavior for avoiding disastrous results , the unpredictability of events could reserve him different payoffs than those expected by him . Ideally, a rational investor, after having evaluated the probability of the occurrence of positive events coming from the investment that he has decided to undertake, the profitability of the same, the size, the scope and the time in which the investment's opportunities will last, designing a plan of alternative actions, may faces other problems that are risk-related, thus not easy quantifiable, observable nor controllable, that could negatively (or positively) compromise overall value of the investment made. When macroeconomic variables changes significantly (such as rate of interest, inflation etc) these ones influence strongly many individual-related activities; for example, when inflation occurs, the consumers reduce consumption, hence the firms earn less and this fact ultimately reduces its internal generated fund which provides to valid source for its own financing ; hence the firm starts to borrow increasing the debt component for financing business activities; but, it is common knowledge that a firm that continues consistently to borrow will end up in default , unless it has optimal amount of assets that may cover debts incurred. If the total amount of its assets is not sufficient enough to cover its own debts, the firm is defaulting and , in worst situation, goes bankruptcy. Hence, this hypothetical story demonstrates a chain effect affecting events experienced by the firm until bankruptcy ; this latter is caused mainly by a change of exogenous variable that exerts its influence over the market and its interaction with certainty component (represented by firms dealing with the change of macroeconomic variable) .

Definitely uncertainty component has a strong impact in determining distressed events. Thus, uncertainty shapes the way in which the firm organizes itself, both internally and externally, and ultimately determines its own existences and eventually its own end. Finally, uncertainty challenges also the efficiency of strategies adopted by rational entities for dealing with it.

3.2 Financial Distress: Destructive Process or Instrument of “Natural Selection”?

Although financial distress could be associated as an event with only a negative characterization , this event ,instead, contains per se positive aspects that, almost paradoxically, demonstrating that destructive event means also creative one (thanks to Schumpeter's studies, this sentence could assume an authoritative remark plus higher degree of reliability). In fact, a trouble firm suffers distress because of its weakness in performing business activities into a competitive market dominated mainly

by stronger firms that are striving for its own gain. Hence, in this game, the winner is the one that remains alive with a sufficient return on its investments and a discrete amount of debt, meanwhile the weakest one is the succumbing part to the dominator also because it has taken excessive risky actions making it more vulnerable to its competitors and to general competitive environment, especially when economic difficulties arise; thus, financial distress event plays almost a role of natural mechanism of eliminating the weaker part from a scenario dominated mainly by stronger firms.

Besides, financial distress occurrence seems plausible being retained also “natural” because this latter mechanism has carries also positive effects affecting both the firm, that is suffering temporary losses, and the whole market; the reason is that the weaker entity, in the event of financial distress and prior to eventually bankruptcy, re-organizes itself and adopts strategies that will permit it to restore its value that has previously lost; hence, the entity become more efficient respect previous time. This turns out be positive not only for the business that still remains on going but also for the entire industry in which it operates, since there is not a waste of value. Hence, paradoxically, financial distress, that incentivizes re-organizational procedures, ultimately gives to the firm the opportunity to experience a second chance-form of recovery and increase in its efficiency, profitability, investing business activities etc. Based on these premises, it is plausible also to retain that financial distress is a mechanism that encourages an efficient reallocation of resources (for example capital) unexploited in the market; this ultimately generates cash-resources movements that rejuvenate the financial system. The whole system become sound and tends to converge to and remain in equilibrium; hence, drawing conclusions, it is worth to affirm that financial distress is a natural and necessary process operating into financial system for granting its soundness.

This destructive process has in se the basics for creating a stronger system, transforming weakness in strengths and threats in opportunities.

3.3 Remedies in lieu of insolvency have perpetual effects for granting soundness of financial system?

A sound financial system is an efficient market dominated by rational components as well as random walking events. Hence, rational and irrational components are strongly interconnected. This ultimately constitutes the general idea of a highly dynamical context in which the agents interact among each others. Thus, interrelated relations among them may generate positive as well as negative results. In the former situation the firm is presumed to conduct a safe business activity and its position is stable

and sound inside the competitive market; meaning also that the strategies and the possible remedies adopted by it are well as fitted well to dynamical changes of the context, that ultimately permits its own survival into competitive market; the latter instead, could be characterized by situation in which the possibility of default occurs and the remedies that it adopts are several but their efficacy is ultimately tested by firm's survival in such competitive market. Thus, remedies are infinite and can be used in various ways. Different remedies leads to different results and adopting them do not necessary mean that the problem is extinguished in perpetuity. On the contrary, the effects provided by a remedy depend upon the context in which it is applied. Assuming a real scenario that changes continuously, as this latter changes also the remedy to be adopted in such reality must be changed. For example, a distressed firm that is disenchanted of its own recovery may opt to adopt the drastic solution of liquidation of its own assets; but this remedy may be changed as the situation changes; in fact, if the distressed firm in question is ultimately acquired and merged by another more stable one, the remedy of liquidation, that it wanted intentionally to adopt, become useless, and the new merging changed event gives an opportunity to this weak firm to seek a temporary recovery. Hence, remedy changes as the context in which it is applied changes as well. Remedies to be adopted are also suited to the characteristics of the firm that want to apply these ones; hence, the effectiveness of these latter ones is shaped upon elements of the firm such as size, scale of business, type of industry etc. that are highly variable, thus providing a remedy that can subsequently deemed to be variables well.

It is difficult discovering a remedy that gives a perpetual solution to an event experienced by financial market since this latter is consistently mutable. Hence, considering cases of insolvency, a remedy adopted against it may provide solution just on temporary basis. The firm that adopts restructuring or liquidation remedies reduces threats for stability of the system but these have not perpetual lasting effects since interchangeable events force the same firm to use new strategies more suited to the changed context.

3.4 Suggestions on dynamic remedies to be adopted in lieu of insolvency.

In light of these events presented above, it can be easily inferred that an optimal remedy has not long lasting effects neither can definitively extinguishes uncertainty, since this latter is deep-rooted into the system and, in general, is a natural component of the environment itself, thus unavoidable one.

Hence, apriori there is not absolute remedy to be implemented rather a relative one that would potentially reduce causes that adverse the harmonic sound of an equilibrated system. Preventing is better than curing, hence a wise entity would prefer to adopt strategies that predict the likelihood of defaulting events and, then, enforce precautionary measures for fighting against components that may resemble endogenous and exogenous sources of risk. Endogenous variables may be easily estimated and controlled respect to exogenous ones that, instead, must be evaluated according more sophisticated probability frameworks. For this latter purpose, throughout history, in dealing with risk, many economists have developed mathematical frameworks that try to capture the possible effects that exogenous events can cause. Examples are provided by models developed by economists like Beaver and Altman that applied univariate and multivariate linear analysis respectively for the prediction of corporate failures, assessing the financial risk components.

Specifically, the first method was mainly based on econometrics single-variable regression model and was constructed upon the general idea that “*the larger the amount of liquid assets, the larger the amount of cash flow of operation, the smaller the risk of default*¹⁶”; on the other hand, the second one, that was provided by Altman (the so called Z-score), was more accurate in giving estimated results and was mainly based upon evaluation of several variables identifying the sound condition of the firm in the industry (such as profitability, liquidity, leverage, solvency, and activity of firm) by testing their statistical significance; in addition, the linear regression encompasses control variables for reducing problems of multicollinearity and biased estimations of results.

The general Altman’s linear regression equation is defined as:

$$Z = \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 \dots + e$$

Where the variables (X= independent var. and β_i $i=1,2,3 \dots$ being correlation coefficients) represented are expression of relations of:

Z= overall index or score

X_1 =working capital over total assets

X_2 = retained earnings over tot. assets

X_3 = earnings before interest and taxes to tot. assets

X_4 = market value of equity to book value of tot. liabilities

¹⁶ Beaver (1966, 80).

X_5 = sales to tot. assets

e = error term

Hence, the model provided is used for deriving the Z value, also called Z score. Once the Z value is derived, a further analysis with these latter term will be conducted: the Z test, that consists in comparing this Z value with a threshold value, at the end will determine whether the firm will or not suffer financial distressed situation. If the firms' Z score is higher than the threshold value, the firm is financially sound and the possibility for incurring in default seems far from being real. If, instead, the Z score is lower than the threshold value, the firm is not sound, hence the probability to fall in default appear to be higher.

Once a firm has obtained valid unbiased information and risk assessment measurements, and once the proximity of firm's position respect the event of failure is recognized, the entity itself continues to experiment methods that could eventually permit it to adjust its profitable position accordingly. It is possible to indicate different approaches used by each firm according to different circumstances and proximity to default in which these are placed.

The following two cases are examples provided by me upon the application of the Altman's econometric models combined with more dynamic corporate remedies of reorganizational procedures adopted by entities that are going to/or are suffering situations of financial distress. Hence, more fast and efficacy way to fight against distressed condition that lead to bankruptcy consists in adopting a two-fold approach, focusing on both exogenous risk assessment analysis and endogenous evaluation criteria for redeploying resources, avoiding waste of value.

Case 1: **Z score > threshold value** (the firm is not already in financial distress). Thus, supposing that the firm in question is a multinational company that is not far from seeking financial distress; once that it has estimated the probability of occurrence of its own default, the entity will use precautionary measures, such as limiting borrowings, sales of assets for generating internal cash flows for repaying debts, reducing its organizational costs, rebuilding the management board (substituting administrative body especially), and redesigning its business plan to be implemented, for avoiding the worst situation and allowing it to seek the reestablishment of its past hegemony. Thus, in this specific situation, the firm calculates on preemptive basis a new strategy to be adopted and the same that eventually will permit it to restore value by increasing its profitability with enlarged sales revenues and minimized costs, avoiding the direct experience of suffering a decreasing downward spiral process addressed

toward bankruptcy.

Case 2. **Z score < threshold value** (in econometric terms, this result is not statistically significant that means that the null hypothesis that the firm is facing financial distress is not rejected; it means that this hypothetical firm is suffering a condition of financial distress, thus it maybe in proximity of bankruptcy). Hence, supposing that the entity is question is a medium-sized business enterprise that is suffering a condition of default due to excessive financial leverage activity that has mislead it to undertake excessive risk, increasing consistently debt to be paid. Hence, the distressed firm is already experiencing the decrease of the overall valuation of its activity. The instrument for making predictions about the estimation of time of occurrence of the defaulting event appears useless since distress has already hit the firm. In that general situation of emergency, what is really needed is a call into action. In fact, the only remedy that it has to adopt is to cure the illness in which is fallen. Two strategies should be the more effective ones: re-organization and/or liquidation. Before declaring bankruptcy, the entity may opt for a second chance of survival into competitive market: engaging in management turnover and general restructuring of its trading activities. and substituting more skilled management board, adopting cutting-costs methods (laid off workers and other expenses that are “superfluous” from firm’s perspective), selling firm’s assets, increasing monitoring, reinforcing regulatory frameworks ... all of these presented actions would help the distressed firm to fill its temporary unsound condition, turning this latter into a safer one. Otherwise, supposing that the same firm is aware of the fact that it will never be in strength to seek a recovery through reorganization, at the end it will prefer to liquidate its business activity as going concern; hence, the cash flows generated by sales of its assets will be mainly addressed toward its creditors and, in the event in which any surplus remains, shareholders eventually.

Furthermore, the efficacy of the method consists mainly in the length of time necessary to be applied. Generally, short-time length application remedy is the most effective one since it detects immediately the illness and stop it before this spreads out its contagious effects in the market, hampering the overall wealth of the system. Second, a remedy is more efficient if it adopts a comprehensive approach that encompasses both theoretical and practical frameworks, that induce suggestions regard the actions set on a “to do list”; third, effectiveness comes also by valuating properly the final outcome achieved and comparing it with the condition prior to default: more similar final compared payoffs appear to be , more reliable is the remedy adopted by the firm. Then, a two-fold approach seems reasonable since it is applicable to a dynamic context that is dominated by apparent two opposite spheres:: one ,which is the certainty sphere, that is manageable, quantifiable and controllable through mathematical and theoretical frameworks, meanwhile the other ,uncertainty sphere, that is mere predictable, non quantifiable, idealized and described only by theoretical frameworks. Hence, this approach has in se advantageous premises that

enable it to deal with uncertainty and certainty components simultaneously, addressing them toward equilibrium in financial context. This model does not discriminate the uncertainty component but, indeed, recognizes to it a propulsive role necessary for starting whatever business activity inside the market. Drawing conclusions, the ideal tools for preventing the soundness of financial systems are the ones that try to encompass per se theoretical explanations for the occurrence of the distressed event , understanding causes and consequences , and, simultaneously, the one that advocates practical calls in action to be applied at the immediate occurrence of the analyzed insolvency problem, in order to avoid also contagious effect , to limit further decrease in value of the company ,to preserve value and to redeploy potential resources unexploited for boosting the efficiency of the firm's and society's structures.

Conclusive remarks.

The cyclical occurrence of crisis and type-related phenomena that hamper constantly the stability of well-sounded financial system, financial distress and the worst ultimate stage of its proceeding activity, bankruptcy, have been studied and evaluated year per year by economists. The aim of their researches was, and still is, to recognize a valid remedial tool that can effectively understand causes, evaluate consequences, and reasonably implement an ideal pathway of actions that ultimately would result to be an effective one. The stability of the context is determined by the balancing effects of two opposite forces: certainty and uncertainty of events. One affects the other. One interact with the other simultaneously. Hence, the context in which these two components operate is complex and what is needed is a sophisticated model that try to deal with both of them for preserving harmonious sound of the system. In the event of financial distress, the risk is the uncertainty component and this latter shapes the context in which the firm operates; hence, once that the firm deals with the risk (predict possible future losses or recoveries) and understands sources from which this latter comes, evaluates consequences, then it will adopt a remedy adapted to the previously findings, hence maximizing its endogenous variables (profitability, liquidity, sales revenues, management turnover) for restoring its previous economic hegemony. Thus, a deductive method, as mentioned above, implies the usage of a two-fold strategy that deals simultaneously with certainty-uncertainty events from theoretical and practical perspectives. Specifically, theory must be implemented in fast and easy-to-use calls in actions that immediately detect the original source of the problem, cure it and finally try to restore value and/or stability condition of the whole system already affected by financial distress. Hence, the efficient tool is one that creates favorable conditions for preserving soundness of the entire financial system. However, its remedial effects are only temporary because these ones are derived from strategies that are constructed upon dynamic realities. As reality changes, also the strategies adopted must be changed since become useless for the already changed scenario. The financial distress phenomenon can be defined to be a downward addressed spiral event where the ultimate stage is represented by bankruptcy; the process ideally starts from deterioration of performance of the usual activities held by the entity (for example a reduction in revenues from sales) with a worsening of effects (since revenues are reduce, internal generated funds will not grant valid source of financing, hence the firm starts to

borrow) until these ones lead the firm to reach an unavoidable condition to declare bankruptcy (liquidation of business assets with the cease of existence of any of its components); but there are also cases in which there would be a second chance of survival for the firm before declaring bankruptcy: it consists in applying re-organizational procedures that ultimately will help the firm to seek recovery, without necessarily destroying any value created during its business life cycle. Interestingly, liquidation and any other destructive procedure may have per se the potential of recreating more efficient and stronger conditions upon which the financial system can rely and preserve its equilibrium in a safer way.

Definitely, the remedies adopted in lieu of insolvency are the ones that must transform weaknesses of internal system in strengths, and threats of external system in opportunities.

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