Bankruptcy law and corporate investment decisions

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ABSTRACT

Major European countries have recently adopted bankruptcy codes that strengthen entrepreneurs' power to renegotiate outstanding liabilities. Renegotiation in bankruptcy allows lenders to increase recovery rates, however it also weakens the contract's ability to solve the moral hazard problem embedded in the production project. Hinging on this trade-off, I show in which circumstances a soft bankruptcy law that resembles Chapter 11 in the balance of lenders' and entrepreneur's rights encourages the choice of investments that privilege the achievement of long-term results. However, I also show that, in contrast to the common wisdom, soft bankruptcy can lead to the choice of investments that are biased towards the achievement of short-term outcomes.

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1. Introduction

The literature in the fields of law and economics has traditionally distinguished the American soft approach to bankruptcy from the tough one of European legislators. Recently, this dichotomy has been put at stake by a process of convergence due to the adoption, in major European countries, of bankruptcy codes inspired by American Chapter 11. The European Commission supported this process, based on the presumption that a harsh approach to failure would deter risk-taking, experimentation and innovation.

Consequently, major European countries (like France, Germany, Italy and Spain) have reformed their bankruptcy codes and the crucial novelty they introduced consisted in giving more power to the entrepreneur to restructure the terms of outstanding financial contracts and prevent the opening of a liquidation phase.[1] These days such reformed procedures are seriously challenged by the financial meltdown triggered in the fall of 2008 by the failure of major credit institutions, which has pushed a number of firms onto the verge of bankruptcy. Standard & Poor's reports that the European companies default rate in its speculative-grade category is risen to 10% in 2009 and 2010, from the average 3.2% over the last fifteen years. I contrib-

ute to the analysis of the recent bankruptcy reforms by showing when, in the presence of a problem of moral hazard, a bankruptcy law that facilitates the renegotiation of financial liabilities encourages the undertaking of long-term investments and when, contrarily to the common wisdom, it causes a problem of short-termism in investments, that is the choice of investment projects that privilege the achievement of short-term results.

I employ a principal-agent model with moral hazard, in which a cash constrained entrepreneur can choose to undertake either a short-term project or a long-term project. The short-term project returns a lower net present value than the long-term project. However, the long-term project exposes the entrepreneur to the risk of bankruptcy.[2] Bankruptcy can be of two types. Soft bankruptcy is designed as a financial renegotiation game that resembles Chapter 11 and the procedures recently adopted by European countries in the balance of lender and entrepreneur rights: on the one hand the entrepreneur has the right to ask for the opening of bankruptcy proceedings in front of a court and devise a restructuring plan, on the other hand lenders have the right to approve or reject the plan. Tough bankruptcy is designed to capture the main characteristics of the pre-reform regimes in France, Germany and Italy, where the

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[2] In order to make things more concrete, in what follows the short-term project is designed as a risk-free investment, like a government bond. Instead, the long-term project is an investment that may deliver high long-run payoffs at the cost of early failures, like the investments in R& D.

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resolution of bankruptcy proceedings exhibited a clear bias towards the liquidation of the distressed company (Brouwer, 2006).[3] My aim is to compare the impact of the soft bankruptcy game on firm's investment choices with respect to the tough bankruptcy benchmark, in which liquidation follows automatically in the case of project's failure.

To show that renegotiation in bankruptcy affects the optimal contract (and thus the investment choice), I prove that lender's behavior is characterized by limited commitment under a soft code. In the presence of continuation rents, financial renegotiation reduces the room for entrepreneur's punishment in the case of bad performance: even if the original contract prescribes project's termination, the lender allows production's continuation provided recovery rates increase. This mechanism is borrowed from the literature on the "soft budget constraint" problem (Dewatripont and Maskin, 1995; von Thadden, 1995; Kornai et al., 2003). However, while Dewatripont and Maskin (1995) and von Thadden (1995) focus on the *benefits* to a principal from the lack of commitment to remain tough with an agent, I show that in the presence of moral hazard limited commitment can also be *costly*.

In the model, the softening of lender's budget constraint generates the following trade-off. On the one hand, the renegotiation of the termination prescription increases ex post efficiency because the lender improves recovery rates, on the other hand it decreases ex ante efficiency because the prospect of renegotiation raises the agency rent that the lender needs to bear to restore entrepreneur's incentives. This trade-off is taken from the literature on mutually advantageous renegotiation (e.g., among the others, Fudenberg and Tirole, 1990), my contribution to this literature consists in providing an analysis of the effects of renegotiation on ex ante investment's time horizon: depending on whether recovery rates are able to offset the exacerbation of the incentive problem, soft bankruptcy can induce long-termism or short-termism in investment.

I model the short-term project as a safe outside option that is not affected by moral hazard. Regarding the long-term project, its value is affected by a moral hazard problem and it exposes the entrepreneur to the risk of bankruptcy.[4] In a setting with tough bankruptcy, contingent arrangements can be used to limit the incidence of the moral hazard problem—by punishing the entrepreneur after a bad outcome. If soft bankruptcy is introduced, and in the presence of continuation rents, contingent contracts are not renegotiation-proof: on the one hand, this dampens their ability to limit the moral hazard issue, on the other hand this allows them to deliver a larger payoff thanks to recovery rates. I show that, provided the increase in recovery rates is able to offset the exacerbation of the agency problem, long-term projects can still be implemented, otherwise soft bankruptcy causes a bias for short-termism.

The short-termism result goes against the conventional wisdom that soft bankruptcy stimulates entrepreneurship and risk-taking (e.g., Acharya and Subramanian, 2009), however it is consistent with the empirical evidence concerning the effects caused by the strengthening of entrepreneur's renegotiation power in bankruptcy on the cost of funding. A widespread empirical proxy for short-termism is the value of the interest rate spreads set by lend-ers on firms (Blume et al., 1980; Poterba and Summers, 1995): a higher cut-off value indicates higher pressure on a firm to achieve short-term results. Interestingly, Scott and Smith (1986) and Rodano et al. (2012) find that the introduction of stronger entrepreneur's protection to renegotiate outstanding liabilities in bankruptcy has lead to more costly funding contracts. Scott and Smith (1986) study the effects of the 1978 bankruptcy reform in the United States, Rodano et al. (2012) focus on the impact of the recent Italian bankruptcy reform. Both pieces of empirical evidence clearly support the short-termism result.

1.1. Related literature

An important strand of the theoretical literature on bankruptcy has modeled soft codes as an information revelation process in which the economic viability of the distressed firm is examined (Mooradian, 1994; White, 1994). This approach highlights the trade-off between the excessive liquidation caused by tough procedures and the excessive continuation generated by soft procedures.[5] For example, White (1994) investigates the role of bankruptcy as filtering device in a model with adverse selection and shows that bankruptcy can distort continuation decisions. My paper undertakes a different modeling approach by designing bankruptcy as a renegotiation game and focusing on the agency costs caused by lenient procedures in the presence of moral hazard.

Part of the received literature has focused on the benefits arising from Chapter 11 ability to solve the frictions caused by creditors' mis-coordination (Gertner and Scharfstein, 1991), instead I look at the inefficiencies caused by the conflicting interests between lender and entrepreneur in bankruptcy. Like in Bolton and Scharfstein (1996), I study the effects of a renegotiation game that is carried out between lender and entrepreneur. However, the aim of Bolton and Scharfstein (1996) is to determine the optimal number of creditors that is able to minimize the trade-off between entrepreneur's ex ante incentives to default strategically and the ex post efficiency costs generated by liquidation. Instead, in this paper I am rather concerned about the impact of renegotiation on firm's investment time horizon.

This article is also related to the literature that studies the "soft budget constraint" problem. Dewatripont and Maskin (1995) and von Thadden (1995) investigate the relationship between the "soft budget constraint" problem and investments' time horizon, concluding that *hardening the budget constraint may induce short-termism in investment behavior*. In these articles, it is shown that neglecting to re-finance the projects that yield a low outcome in the short-term hinders the implementation of both bad projects, and slow, but good, projects that are able to generate very high gains only in the long-run. Clearly, this is not efficient if the higher profitability of long-term projects offsets the losses caused by bad projects. As pointed out in the Introduction, my contribution to Dewatripont and Maskin (1995) and von Thadden (1995) consists in borrowing the tension between ex post and ex ante efficiency that is at the core of the literature on mutually advantageous renegotiation to show that in the presence of a problem of repeated moral hazard and renegotiation *hardening the budget constraint may induce long-termism*.[6]

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[3] With particular regard to Italy, Bianco and Romano (2009) document that the number of "in-court" restructuring agreements was almost insignificant in the pre-reform regime (accounting for 1% of the total number of opened procedures). At the same time, before the 2005–2006 reform, in Italy "out-of-court" renegotiation was inhibited by the risk of having the court-appointed trustee annul the agreement via claw-back provisions. All this resulted in a legal environment that greatly discouraged financial restructuring (Costantini, 2009).

[4] As will be clear later, the way I model the short-term and the long-term projects implies that, although the focus of the discussion is on long-termism versus short-termism, the conclusions of the paper are largely applicable to the analysis of the impact of bankruptcy on the choice between risky versus safe projects.

[5] This trade-off has also influenced the debate over the design of the optimal bankruptcy reform. See Hart (1995), chapter 7, for a comprehensive discussion on this topic.

[6] More specifically, my model differs from von Thadden (1995) insofar as I introduce a problem of moral hazard in both the first and the second period. Moreover, I depart from Baliga and Polak (2004), which also build on Dewatripont and Maskin (1995) by introducing a problem of moral hazard, because there authors employ a one-shot game to study the choice between monitored and non-monitored loans.