Past and Future of the Bankruptcy Law in Brazil and Latin America*

Aloisio Araujo++

EPGE/FGV **a**nd IMPA

e-mail: **aloisioa@fgv.br**

Bruno Funchal+

EPGE/FGV

e-mail: **bfunchal@fgvmail.br**

June 20, 2005

Second Draft

Comments welcome

* The authors would like to thank Eduardo Engle, Sara Castellanos and Ronald Fischer for their comments at the 11th Economia Panel Meeting at David Rockefeller Center for Latin American Studies at Harvard University.
++ EPGE/FGV and IMPA, email: aloisioa@fgv.br.
+ EPGE/FGV, email: bfunchal@fgvmail.br. I am grateful to FAPERJ for their financial support.

Past and Future of the Bankruptcy Law in Brazil and Latin America

Abstract

This paper studies the Bankruptcy Law in Latin America, focusing on the Brazilian reform. We start with a review of the international literature and its evolution on this subject. Next, we examine the economic incentives associated with several aspects of bankruptcy laws and insolvency procedures in general, as well as the trade-offs involved. After this theoretical discussion, we evaluate empirically the current stage of the quality of insolvency procedures in Latin America using data from Doing Business and World Development Indicators, both from World Bank and International Financial Statistics from IMF. We find that the region is governed by an inefficient law, even when compared with regions of lower per capita income. As the theoretical model predicted, this inefficiency has severe consequences for credit markets and the cost of capital. Next, we focus on the recent Brazilian bankruptcy reform, analyzing its main changes and possible effects over the economic environment. The appendix describes difficulties of this process of reform in Brazil, and what other Latin American countries can possibly learn from it.

JEL classification: G33; K40; K00

Keywords: Bankruptcy; Financial Distress; Legal System; Law and Economics

I – Introduction

The modern economic theory recognizes more and more the relevancy of the legal and institutional structures for the good functioning and development of the economy. The present paper works specifically on the law that governs the bankruptcy procedure of corporations, its characteristics and effects over the economic environment, besides the recent reforms that occurred in Latin America focusing specially in the Brazilian case.

Firms take debts for several different reasons. One important characteristic of this act is that such firms wish to repay their debts with their future gains. But, there is always the possibility, for some reason, of

no fulfillment of such repayment promise. The bankruptcy law is concerned with what happens in such circumstances.

In the absence of a bankruptcy law, creditor has two legal procedures at his disposal. First, in the case of secured loan, creditors can seize the firm's assets that serve as collateral for their loans. Second, in case of unsecured loans, creditors can go to the court asking to sell some of the firm's assets. However, this method of debt collection runs into difficulties when there are many creditors, and the debtor's assets do not cover his liabilities (i.e. when the firm is insolvent). Under these conditions each creditor will try to be the first to recover his debts. This uncoordinated race of creditors may lead to the dismantlement of the firm's assets, and to a loss of value for all creditors.

Given this situation, it is in the collective interest that the disposition of the debtor's assets be carried out in an orderly way, via a centralized bankruptcy procedure.

In a perfect world, there would be no need of a bankruptcy law because individuals could solve this problem via contracts, i.e. the debtor could specify as part of the debt's contract what would happened in case of default (like the division and the procedure). Writing such contracts is in fact very difficult, since debtors may acquire new creditors and assets as time passes, and it may be very hard to specify how the division process should change as function of such adjusts. Besides, in practice contracts like this are not written. Therefore, the bankruptcy law provides a default option for this problem of contract incompleteness.

To summarize the role of the bankruptcy law, we can say that it works to avoid problems of uncoordinated debt collection and contract incompleteness in a situation of no repayment of debts. But how the bankruptcy law should look like? Most countries have two bankruptcy procedures, one for liquidating assets of failing firms and another for reorganizing failing firms.

Bankruptcy-liquidation procedures are very similar in the most developed countries. When a firm files for bankruptcy liquidation, the bankruptcy court appoints a trustee who shuts the firm down and sells its assets. This could be done in different ways: sale of the business, or its productive units, or piecemeal sale of its assets, depending on the demand and which option maximizes the value of the company's assets. The

Absolute-Priority Rule determines how the proceeds of sale are divided among the claimants. It specifies what claims are paid in full according to an order defined by the bankruptcy law of each country.

However, when capital markets are imperfect, which is very common in developing countries, the best managers may not be able to raise the cash necessary to buy the firm. The firm may be inefficiently dismantled, and its assets sold cheaply. Therefore reorganization provides a good alternative for countries that have problems in their capital markets. An additional explanation[1] for the loss of value in liquidation is that when a firm in financial distress needs to sell assets, its industry peers are likely to be experiencing problem themselves, leading the asset sales to prices below value in best use. Hence, in cases where asset specificity and the correlation of returns across the firm are high, reorganization is likely to maximize the insolvency return instead of liquidation.

An alternative solution for the liquidation procedure, especially for firms financially distressed[2] but not economically inefficient[3] is the reorganization procedure, where there is no actual sale of the company's assets. There are different approaches to choose between both proceedings. Some countries (like Germany, France and England) prefer to give the exclusive control of the proceeding to an outside official, who makes the initial decision whether the firm will be liquidated or remain in operation while a reorganization plan is formulated. Other countries choose to supervise the manager with an impartial and independent administrator, who assumes complete power if management proves incompetent or negligent or has engaged in fraud or misbehavior. And finally there are countries (like the U.S.) that give managers the right to choose between filing for bankruptcy liquidation or reorganization, together with exclusive power to propose a reorganization plan.

Once the reorganized procedure is chosen over liquidation, there is a conflict between the secured creditors' right to claim their collateral versus the goal of reorganizing the firm. In order to reorganize successfully, it must retain assets, which are crucial to its operations, but secured creditors often wish to

[1]See Shleifer and Vishny (1992)
[2] A firm is in financial distress when the value of its debts exceeds the value of its total assets.

claim these assets. In some countries this conflict is resolved in the firm's favor by applying an automatic stay to secured creditors (like U.S.), making the reorganization process more appealing. This protection varies from one country to another, with some not applying it, like the United Kingdom and Germany, thereby weakening or even eliminating the possibility of reorganization.

The next step is to provide the reorganization plan that specifies how much each creditor will receive in cash or claims from the new firm. An appropriate majority of creditors should be required to approve a plan. Assuming that reorganizing the firm causes it to be worth more than its assets would bring in liquidation, usually the reorganization procedure provides a framework within which creditors and managers (with equity holders) bargain over the distribution of the extra value and eventually adopt a reorganization plan, otherwise if there is no agreement the firm is liquidated.

The law leaves the division of the reorganized company's value to a process of bargaining among the classes of participants. Each class of equity holders and debt holders whose interests are not aligned must vote to approve a reorganization plan, which should include a division of value. The outcome of this bargaining process often diverges from the legal rights of the classes since managers and shareholders have some bargain power. It should be noted that violations of absolute priority rule usually happen in the reorganization procedure.

Ideally the bankruptcy law should provide a good balance between liquidation and reorganization procedures, in such a way that minimizes the so-called *Filtering Failure* problem. There are two different cases of filtering failure problem: the first is when economically efficient firms in financial distress are liquidated but should be reorganized (its value would be bigger in reorganization), which is called *Type I Error*; the second is when economically inefficient and financially distressed firms are saved in reorganization but should be liquidated, which is called *Type II Error*. Avoiding filtering failure problem

[3]A firm is economically efficient if the best use of its capital is the current use, and it is economically inefficient if the value of their assets is greater in some other use.

makes the efficiency of the economy higher since the good firms will stay alive and the bad ones will be closed, passing its assets to firms with higher efficiency.

A good design of bankruptcy law's procedures may influence in different ways the establishment of a healthy environment of business. From an ex-post efficiency perspective, a Bankruptcy Law should maximize the total value of the company. The positive effect is over the cost of capital that is reduced when the bankruptcy procedure maximizes the pay-off that creditors receive from insolvent firms. There is also an ex-ante efficiency produced ex-post the firm enters bankruptcy. From an efficiency perspective, what matters is not only for the total bankruptcy value to be as large as possible but also the division of its value among the participants. An ex-ante efficient bankruptcy law is capable to produce rights incentives over managers' decisions, in both the initial period of firm's life and after the firm goes to financial distress. Bankruptcy procedures should penalize managers adequately in bankruptcy states. Without any adverse consequence at all, there is very little incentive to work hard in the early stage of firm's life to pay their debts. This incentive has implications in the portion of insolvent firms that is reduced when this incentive is well provided. In the period post-insolvency, the management will tend to give rise two inefficient bankruptcy decisions: first, undertaking excessively risky investments as a means of avoiding bankruptcy; second, delaying filing for bankruptcy looking to extract pecuniary gains as much as possible. A good insolvency system reserves some portion of value in bankruptcy for managers and shareholders to motivate actions in favor of efficient investment and timing decisions.

Notice that all mechanisms cited above contributes to increase the expected return of creditors, or by raising the return in bankruptcy states or by diminishing the probability of bankruptcy, reducing the cost of capital in the economy. Since an ex-ante objective of bankruptcy law should be to maximize the project option set that creditors want to finance, lower capital costs is fundamental to reach this goal.

La Porta et al (1998) study empirically the impact of different bankruptcy laws in financial markets. The authors found that countries with a bankruptcy system that give a higher protection to creditors have better and broader functioning financial markets than countries where the legal system provides weaker

support to creditors. They argue that better legal protections provide a high expected return in bankruptcy states, enabling the financiers to offer entrepreneurs money at better terms. Levine et al (2000), studying the second-order consequence of changes in bankruptcy law, found a strong link between financial development (that could be boosted by changes in bankruptcy law) and growth. Their results suggest that, for example, if Brazilian financial market increases in 10%, Brazil could grow 0.6% faster per year. The reason for this effect on growth comes from the reduction in the cost of capital, promoting entrepreneurship by the creation of new firms and investments, and therefore fostering the economic growth.

The severe economic crises experienced by Latin American countries in the early 80's served as a natural experiment to alert that most of them need to reform their bankruptcy system. Bergoeing et al (2002) compare the recoveries of the Mexican and Chilean economic crises in the early 80's. Chile realized an administrative reform of the bankruptcy management service in 1978; the 1982 bankruptcy reform law clearly defined the rights of each creditor and replace public officials with private officials. The old law do not provide for an efficient and timely administration of bankruptcy because it relied on poorly paid public officials and highly bureaucratic procedures. In contrast Mexico had an obsolete and unwieldy bankruptcy law from 1943 in place until 2000. The authors concluded that despite many similarities in initial conditions, such as appreciation of real exchange rates, large current-account deficits, inflation, and weakness in the banking sector, the reform of bankruptcy procedures in Chile had effects both on the incentives to accumulate capital and on the efficiency with which that capital was accumulated. Both effects are crucial to explain that the differences in recovery paths is due to earlier Bankruptcy Law reforms in Chile that generated a faster recovery.

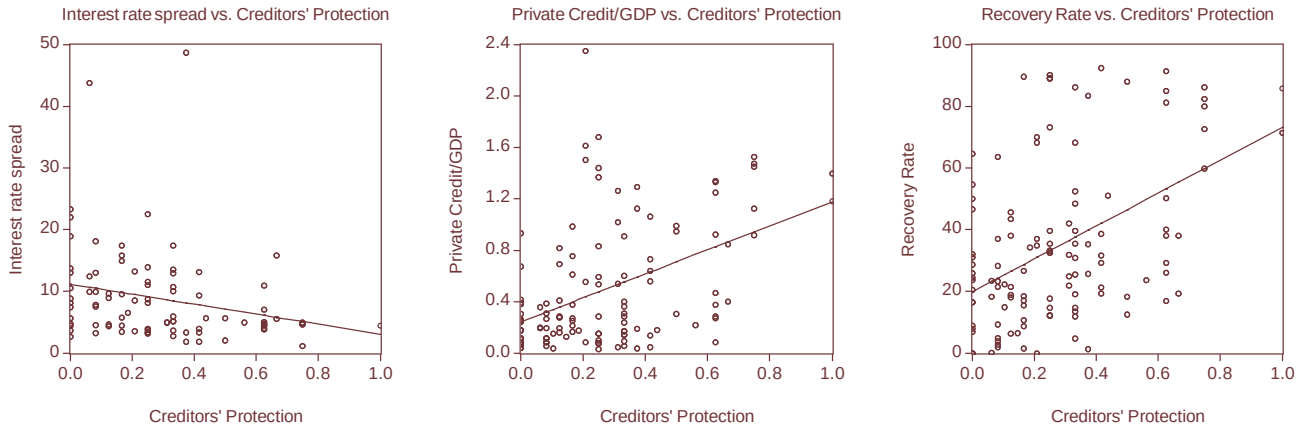
An extra relevant function of the bankruptcy law design is to avoid, as much as possible, fraud. Fraudulent actions have an important role in bankruptcy process mainly in Latin America. Mechanisms that contribute to raise the role of creditors (like an active participation in reorganization) and the expected return in bankruptcy, work to increase their incentive in monitoring the bankruptcy procedure, making more difficult fraudulent actions. Taking the former Brazilian Bankruptcy Law as an example, due to the top

priority of labor and tax claims, creditors receive almost nothing in bankruptcy states, eliminating their incentive in participate of the bankruptcy procedure. Another important source of fraud in Brazil was also provided by the top priority of labor credit. This structure of priority opened the possibility of managers to cheat the law by creating jobs to “friends” in such a way to receive as regular workers (for the manager) of the failing firm. Therefore the structure of priorities acts, besides to reduce cost of capital, to avoid fraud.

Nowadays there is not much to say about the design of optimal Bankruptcy Law. However, there exist two consensual points in this debate. The first concerns to the protection that Bankruptcy Law must provide to creditors and the second is about the goals-of-insolvency procedure.

Evidences in the empirical field show that countries with strong legal protection should provide to firms an easier access to external finance in the form of both high value and broader capital markets. This happens because creditors expect to recovery a bigger portion of their loans in case of insolvency. In this case they will be more willing to supply credit, making it cheaper and easy to get. Figure 1 illustrates exactly this situation.

Figure 1 Effects of Creditors' Protection over interest rate spread, private credit and creditors’ recovery rate.



The other consensual point concerns goals-of-insolvency. Oliver Hart (1999) states the characteristics of a good procedure. First, there is a strong argument that a good bankruptcy procedure should deliver an ex-post efficient outcome, that is, it should maximize the total value available to be divided between the debtor, creditors and possibly other interested parties. The second goal concerns ex-ante efficiency, and says that a

good bankruptcy procedure should preserve the bonding role of debt by penalizing managers and shareholders adequately in bankruptcy states; otherwise it could exacerbate the moral hazard problem. The third goal, concerned with the stability of priority claims, says that a good bankruptcy procedure should preserve the order of the claims defined when the contract was created, except that some portion of value should possibly be reserved for shareholders. This goal have two advantages: first, it helps to ensure that creditors receive a reasonable return in bankruptcy state, which encourages them to lend; second, it means that bankruptcy and non-bankruptcy states are not threatened differently. However, it should be remembered that criticism can be made against the absolute priority rule: the management, acting on behalf of shareholders, will have an incentive to avoid bankruptcy even if this gives rise to inefficient bankruptcy decisions. For this reason, there may be a case for reserving some portion of value in bankruptcy for shareholders. Figure 2 illustrates the positive effects of goals-of-insolvency (computed by Doing Business) stated by Hart over the credit market.

Figure 2: Effects of Goals-of-Insolvency over interest rate spread, private credit and creditors' recovery rate.

Using both measures its possible to perceive that Brazil and Latin America have a quite inefficient bankruptcy procedure and that the bankruptcy law provides a low level of creditor protection, both results with negative effect on their credit market, cost of capital and creditors' recovery rate. Notice by Table 1 how poorly the Brazilian Bankruptcy Law was doing in both crucial variables, much worse than the average of Latin American Countries.

Table 1: Bankruptcy Law Indicators

	Creditors' Protection [0,1]	Goals of Insolvency [0,100]
Brazil	0.06	24.0
Mean of Latin American Countries	0.19	46.3
Mean of OECD	0.46	79.6

Source: Doing Business 2003

Despite these both consensual issues, the design of this law still is a real challenge, which makes very difficult the process of reform. In the economic literature there is no convergence of opinions about how should be an optimal bankruptcy law, especially concerning violations of the absolute priority rule (i.e. the violation in the receiving order in case of bankruptcy). This occurs due to trade-offs that exist in case of violation or not of the absolute priority rule (from here on APR). The APR specifies that claims are paid in full in the following order: first, administrative expenses of the bankruptcy process; second, claims taking statutory priority, such as tax claims, rent claims, and unpaid wages and benefits; and third, unsecured creditors' claims, including those of trade creditors. Equity holders receive the remainder, if any. Usually[4] secured creditors are outside the priority ordering because they have bargained with the firm for the right to claim a particular asset or its value if the firm files for bankruptcy. Thus, they may receive a payoff in bankruptcy even when all other creditors receive nothing. The APR violation occurs when the order specified by the bankruptcy law is not followed, usually when share holders that always have bottom priority are repaid when secured creditors' claims are not paid in full. This violation is very common in reorganization procedures like Chapter 11 of U. S. Bankruptcy Code that chose the firms' restructuring plan using a bargaining process between interested parties.

Laws that do not offer the opportunity of reorganization to insolvent firms close viable business that were just suffering temporarily of liquidity problems, and therefore maximizes the type I errors; besides do not provide the opportunity of APR deviations. In this case, the priority of creditors is maintained, guaranteeing bigger returns in case of bankruptcy and lower cost of capital. Moreover, the no-violation of

[4] However, the bankruptcy law of some countries does not maintain this top priority, putting labor and/or tax and/or another claim above claims of secured creditors (see Table A in Appendix A).

APR offers the correct incentive to managers' effort, minimizing problems of moral hazard and therefore raises the possibility of firms' success. At the other hand, laws that provide the possibility of reorganization reduce the chance of closing viable business (type I error) and additionally, if they are like Chapter 11, APR violations are possible. Despite its negative effects in the level of effort choose by managers, such violation inhibits investments in inefficient risky projects when the firm is in financial distress; encourage desirable investments in firm's specific capital; and make easier the transference of information to creditors, improving the timing of filing to bankruptcy. Such benefits tend to increase the firms' return in both bankruptcy states and non-bankruptcy states. Sometimes this higher return in bankruptcy states may offset creditors' direct losses of such violation (i.e. the part of the value that is gave to managers and shareholders in bankruptcy), reducing the cost of capital.

Proposals of rigid legal structures that admit just the liquidation as solution to insolvent firms were defended since the middle of the 80's until the beginning of the 90's by auctions' method. With the evolution in the literature of bankruptcy, theorists began to defend reorganization as an alternative method to liquidation for economically viable firms. Bebchuck became a reference by his method called "options approach" that gives to the firm the opportunity of restructuring without deviations of APR. However, this view seems like to be changing again. Recently, several theorists of bankruptcy law alert to benefits brought by reorganization procedures that allow deviations from APR (like Chapter 11) through the bargain procedure between debtors and creditors.

It is observed that since the 80's many Latin American countries, particularly in South America, have found themselves in the process of bankruptcy reforms to improve their system, looking to provide a more attractive environment for business. In their majority, the main change concerns the creation of the reorganization procedure, allowing the survival of viable business in financial distress and deviations of APR. Besides, changes that reduce costs of the bankruptcy procedure were also the main target as in Brazil and Ecuador that simplify their legislations looking to raise the agility of the procedure, and the creation of

out-of-court reorganization procedure done in Brazil, Colombia, and Bolivia. Reaching this goal, the amount to be divided between creditors tends to increase, reducing the cost of capital.

Chile was the first to reform its system at the beginning of the 80's. The new law clearly defined the rights of each creditor and replaced public officials with private officials. The first change works to improve the forecast of creditors' return in insolvency states; the second change reduces the bureaucracy, cost and time of the process. The reform diminished the cost of capital, raised investments and the efficiency, and fostered a large ratio private credit/GDP and growth, all factors very important to the economy. Moreover, a good guarantee system, like mortgage for housing, and an efficient enforcement procedure support the well functioning of Chilean bankruptcy law. However, Chile still has many negative aspects in its insolvency system. The current law does not have the objective to keep viable business alive (high possibility of type I error); does not provide incentives to creditors in monitoring debtors (increasing the possibility of fraud); the average time of the procedure is (still) too long (5.6 years); it misses specialized courts in bankruptcy; etc. All this problems motivates new recommendations[5] to reform the Chilean bankruptcy system.

In 1994 the Mexican bankruptcy law from 1943 proved to be insufficient to respond effectively to the problems provided by the economic crisis, and a new commercial bankruptcy law began to be considered. The new law was passed in May 2000. The main purpose of the reform was to encourage restructuring of commercial debtors in financial distress and to provide for an orderly liquidation of the estate, if necessary. Both measures look to reach a higher return of the insolvent firm. The first one gives the opportunity to efficient firms keep itself alive, improving the balance between liquidation and reorganization and therefore reduces filtering failure problems, and the second one avoids the inefficient dismantlement of the firms' asset caused by the uncoordinated debt collection. Some of the most important features of the reform were that: the federal district court is given original and exclusive jurisdiction over bankruptcy cases; the Federal Institute of Bankruptcy Specialists ("IFECOM") was created to supervise insolvency administrators and establish

[5] See "Análisis y Recomendaciones para una Reforma de la Ley de Quiebras", by Claudio Bonilla, Ronald Fischer, Rolf Lüders, Rafael Mery, José Tagle.

rules of procedures for insolvency cases (good at first site); guidelines were established for the administration and disposition of the bankruptcy estate; and international cooperation is facilitated by the adoption, with the reciprocity clause, of UNCITRAL Model Law on Cross Border Insolvencies. The negative aspect is that all process is too bureaucratic and very dependent of the IFECOM.

The Argentinean bankruptcy law, differently from Brazil and Mexico, suffered several changes in few years. In a period of seven years three reforms occurred. The current legal framework for corporate insolvency is concentrated in the *Ley de Concursos y Quiebras* (LCQ hereinafter) of 1995, which replaced the previous bankruptcy system that ruled from 1972 to 1995. The more modern law provides both liquidation and reorganization proceedings, allowing the possibility of rescue of viable business and closing the inefficient ones. This change impacts positively in the aggregated economic efficiency and in filtering failure problem. Modified on several occasions, the new law establishes a liquidation proceeding with generally modern features, and a reorganization proceeding that is reasonably modern and largely consistent with the best practices. These modifications tend to reduce the time of the procedure and its cost, increasing the expected return of creditors and credit market. In February 2002, under occasion of external crises, an emergency law was enacted in Argentina to help stabilize the corporate sector, where many firms which were indebted in dollar enter in bankruptcy and then were passing the control to creditors (usually Banks). The main change is that such law imposed moratoria on different enforcement actions and precautionary measures of almost all kind of creditors. Despite of the attitude in preserve interests of corporation in a period of serious crises, this reform may bring serious damage on the reputation related to the bankruptcy law, and therefore to the cost of capital. On May 2002, a new reform was introduced which abrogated most of the emergency measures.

The Brazilian reform was the most recent in the region, in force since June 2005. The former law that was enacted in 1945 was very fragmented. In practice the insolvency process always proved to be ineffective at maximizing asset values and protecting creditor rights in liquidation (see table 1). Both forces make capital costs very high. This could explain the bad situation of Brazilian credit market (see figures 1 and 2). The new

law improves on existing legislation by providing an option to reorganize in (inspired in Chapter 11 of the U.S Bankruptcy Code) or out of court, and striking a reasonable balance between liquidation and reorganization that reduces the type I error. Also, changes that look to raise creditors' protection and improve the role of creditors in bankruptcy procedure were pursued, making credit cheaper and easier to get, with positive consequences in the development of the economy. Additionally these measures pro-creditors work against fraud of managers. This paper will focus specially in the Brazilian bankruptcy reform, analyzing the main changes and difficulties of the reform, as likes its potential effects over the economy.

The remainder of this work is organized as follows: Section 2 presents how the literature of bankruptcy theory evolves, and what the current discussion is. Also, macro direct and indirect consequences of a successful reform that improves the bankruptcy procedure are discussed. Section 3 begins with a description of a simple model that captures economic effects and trade-offs involved in the bankruptcy law, showing how changes in the system could impact on a firm's investment, effort and other choices. Then, using data from World Bank[6] and IMF (IFS), in section 4 we take a picture of the Latin American situation to evaluate bankruptcy procedures by comparison with other groups of countries, in addition to testing empirically the effects that come from this low-quality Bankruptcy Law. In section 5 we discuss the Brazilian bankruptcy reform, emphasizing its main changes and effects over the economic environment. In addition, the appendix presents the experience of one of the authors with this process, describing what he wanted to do but did not succeed, policy lessons that the Brazilian case provides, and what other Latin American countries have to keep in mind when they reform their bankruptcy law. Section 6 concludes.

II - Review of the Literature

Modern bankruptcy theory began with the recognition of the collective action problem among creditors of an insolvent firm. Jackson (1986) stresses this "common pool" problem. He argues that despite the objective of maximizing the value of the failing firms' assets, creditors tend to act in their own self-interest, making an

[6] Doing Business 2003 and 2004.

uncoordinated debt collection possible, which proves very costly to the value of the firm. This happens because if unsecured creditors perceive that a firm is insolvent, they anticipate that it will not be able to repay all its creditors in full, giving them an incentive to race against each other to be first to collect from the firm. When creditors act uncoordinatedly in liquidation, the assets are sold piecemeal, disrupting the firm's operations and probably forcing it to shut down even when the best use of its assets is continued operation[7], bringing social-welfare losses and not maximizing the firm's value. A bankruptcy system can avoid this inefficient equilibrium by staying the creditors' collection effort to give a state official time to decide whether the firm is worth saving.

A more recent approach tried to avoid deviations from the absolute-priority rule as well to cut the cost associated with the bargaining present in the reorganization procedure called Chapter 11. Some of the economic view, such as Baird (1986) and Jensen (1991), was favorable to a market-auctions approach to cut costs implicit at reorganization. More concretely, a state official would auction insolvent firms to the market, free of current claims, distributing the proceeds to creditors according to absolute-priority rules. If economic value would be maximized by a piecemeal liquidation, the highest bids would be for individual assets; if continuing the firm as an economic entity would maximize value, then the highest bids would be for the firm as a unit.

Bebchuck (1988) argues that reorganization can capture a greater value than the liquidation process, especially when the assets of a company are worth much more as a going concern than if sold piecemeal, and if there are few or no buyers with both accurate information about the company and sufficient resources to acquire it. He therefore proposed an optional approach that homogenizes the interest of the holders and follows the Absolute Priority Rule, keeping alive the reorganization procedure without the burden of APR violations and the cost of bargain.

[7] Webb (1991) shows that this is a classical case of prisoner's dilemma.

Bebchuck's idea received some significant support in subsequent literature; for example, it was adapted as the basis for bankruptcy reform in proposals by Aghion, Hart and Moore (1992), who combined it with auction, and by Hart, La Porta, Silanes and Moore (1997), who suggested a new procedure using multiple auctions. These procedures have also received its share of critical or skeptical reactions. The criticism is about the lack of liquidity (since the firms is in financial distress) that makes impossible to shareholders exercise theirs options; and the skeptical reaction is due to the complexity that difficult the implementation of Aghion et al (1992) and Hart et al (1997) proposals.

Early theorists held that bankruptcy systems should follow absolute priority strictly. This requires creditors to be repaid in the order that the firm's contracts were created. An implication of the rule is that equity holders should receive nothing because the residual claim on an insolvent firm is worth nothing.

Modern theory relates the results of a bankruptcy procedure to earlier stages in the life of the borrowing firm. An ex-post efficient bankruptcy system maximizes the pay-off that creditors receive from insolvent firms. Turning to the borrowing stage, a competitive credit market would reduce the amounts that lenders can require solvent firms to repay when the lenders' expected insolvency pay-offs increase. Thus, interest rates fall as the efficiency of the applicable bankruptcy system increases. On the other hand, the ex-ante efficiency of the bankruptcy system is related to the optimal division of the firm's total value. This point of research is the main target of the current discussion. Much of the research on bankruptcy procedures and reform had assumed that the absolute-priority rule was the optimal division and had focused on procedures that could secure this rule. One approach that could attain APR and has received substantial attention is that of conducting an auction as in Baird (1986), Jensen (1991) and Bhattacharyya and Singh (1999). Another approach that attained APR was based on options as in Bebchuck (1988, 2000), Aghion et al (1992) and Hart et al (1997). However, some substantial research has already been done on violations of the absolute-priority rule (APR), highlighting that the ex-ante effect of deviations from APR are actually beneficial. In particular, this line of research has shown that deviations from APR encourage desirable ex-ante investments in firm-specific human capital as in Berkovitch, Israel and Zender (1997); that they facilitate the transfer of

information to creditors and improve the timing of decisions to file for bankruptcy, to liquidate, or to recapitalize as in Povel (1999) and Berkovitch and Israel (1999); and that they discourage excessive risk-taking by financially distressed firms as in Eberhart and Senbet (1993). Recently Bebchuck (2002) showed that ex-post deviations from APR also have negative effects on ex-ante decisions taken by shareholders. He argues that such deviations have an adverse effect on ex-ante management decisions made prior to the onset of financial distress. The presence of APR deviations aggravates the moral-hazard problem but the final effect of such deviations is still inconclusive.

Also, direct and indirect consequences of a bankruptcy-law improvement are being investigated in the macroeconomic field. The first direct macro implication holds that reducing the cost of debt capital will reduce the cost of capital generally. The equity holds a call option on a levered firm because shareholders can buy the firm by repaying the debt. The strike price for exercising the equity option is therefore the firm's cost of credit. Reducing this cost – i.e., reducing the strike price – makes stock more valuable to own. Hence, it becomes easier for firms to raise equity capital as their country's bankruptcy system becomes more efficient.

The second direct implication of reducing the cost of capital by an improvement in the bankruptcy system is the expansion of the credit market (reduction on credit constraint). La Porta, Lopez-de-Silanes, Shleifer and Vishny (1997) present an important empirical study about legal systems and their influence in finance. They show that a bankruptcy law and an enforcement mechanism that protect the rights of creditors tend to generate more financial development. Araujo and Funchal (2004) examining the same relation argue that when the protection of creditors implies penalization of debtors, an extremely high level of protection reduces debtors' interest in demanding credit, fearing possible consequences[8]. Notice that the supply of credit is increasing in creditors' protection because of the moral-hazard problem, while on the other hand the demand for credit is decreasing in creditors' protection due to the fear of punishment. So there exists an

[8] This is valid only if markets are incomplete. Otherwise, when markets are complete, there always exists the asset of promising to repay only in cases of success.

intermediary level of creditor protection (neither too strong nor too weak) that provides the maximal level of credit in the economy.

However, this relationship is just a first-order consequence of the bankruptcy law. The most important impacts of an improvement of the law are second-order, that is, the consequences generated by financial development. They are two-fold: one is the impact of financial development on growth, and the other is the impact on income distribution and poverty.

King and Levine (1993) study the impact on growth empirically with a sample of 77 countries over the period 1960-1989, using different measures of financial development and growth indicators. The result indicates a strong, positive relationship between each of the financial-development indicators and growth indicators. The authors confirm these findings using alternative methods of robustness checks.

However, they do not deal formally with the issue of causality. It may be the case that financial markets develop in anticipation of future economic activity. To solve the possible problem of simultaneity bias, Levine, Loayza and Beck (2000) use La Porta et al (1998) measures of legal origin as instrumental variables. They analyze 71 countries, using two different econometric techniques: GMM dynamic-panel estimators and a cross-sectional instrumental-variable estimator. The results indicate a very strong connection between the exogenous component of financial development and economic growth. They use various measures of financial-development and conditioning-information sets. Furthermore the data do not reject legal origin as a good instrument for financial development. These results indicate that the strong link between financial development and growth is not due to simultaneity bias.

With regard to the relationship between financial development and both income distribution and poverty alleviation, the theory provides conflicting predictions. Some theorists claim that a financial-intermediary development makes financial services available to a lager portion of the population, rather than restricting capital to selective groups. Thus, by ameliorating credit constraint, financial development may foster entrepreneurship, formation of new firms, and economic growth. On the other hand, some argue that it is primarily the rich and politically connected who benefit from improvements to the financial system.

Especially at early stages of economic development, access to financial services, especially credit, is limited to wealthy and connected persons. Thus, it is an open question whether financial development will narrow or widen income disparities, even if it boosts economic growth.

Other theorists analyze the relationship between financial development and income distribution as a non-linear form. Greenwood and Jovanovic (1990) show that the interation of financial-intermediaries development and income inequalities can give rise to an inverted U-shape curve. At early stages of financial development, only a few relatively wealthy individuals have access to the financial market and hence higher return projects. With the aggregate economic growth generated, more people can afford to join the financial system, with more positive consequences on economic growth. The distributed effect of financial deepening is thus adverse for the poor at early stages, but positive after the turning point.

Using cross-country regressions, a very recent research by Beck, Demirguc-Kunt, and Levine (2004) examines whether the level of financial-intermediaries development influences the growth rate of Gini coefficients of income inequality, the growth rate of the income of the poorest quintile of society, and the fraction of the population living in poverty. The results indicate that finance exerts a disproportionately large and positive impact on the poor and hence reduces income inequality.

III - Bankruptcy Law: Economic Issues and Trade-offs

III. 1 - The Effects of ex-ante financial distress

The relevance of a good bankruptcy law is not present only when a firm goes bankrupt. It also has strong ex-ante effects in cost of capital and incentive to pursue projects that are as important as the ex-post bankruptcy effects. The relationship between the performance of the bankruptcy system, a firm's cost of capital and its incentive and ability to pursue projects can be exhibited with a simple model that we describe as follows. There are five important assumptions:

1- The borrowing firm is run by an owner/manager.

2- Creditors are imperfect monitors of actions related to pay-offs that the firm takes after it borrows.

3- Capital markets are competitive.

4- Creditors can predict the mean of their pay-offs in the default state.

5- Creditors and the firm are risk-neutral.

Assumption 1 is made because this essay is not concerned with the corporative-governance problem. Assumption 2 captures the asymmetric information between the firm and its creditors. Assumption 3 is realistic. Assumption 4 rests on the view that professional creditors have considerable experience with default and 5 is more accurate when applied to firms than to individual persons.

The borrowing firm has a project that requires capital of I, which the firm must raise externally. The firm promises to repay creditors the sum F. The project can return a value v, where the firm is solvent if $v \geq F$ and insolvent if $v < F$. There are two states of nature in the future, one if the firm is solvent and other if it is not.

The solvency and the insolvency state of nature returns to the firm v_{solv} and v_{ins} respectively, where $v_{solv} \geq F > v_{ins}$. The probability of solvency is p_{solv} and the insolvency probability is (1-p_{solv}). This implies that the expected value of the project is $E(v) = p_{solv} v_{solv} + (1 - p_{solv}) v_{ins}$, the expected return conditional to solvency state is $E_{solv}(v) = v_{solv}$, and the expected return conditional to insolvency state is $E_{ins}(v) = v_{ins}$. The bankruptcy system costs c to run. A bankruptcy system can thus distribute to the creditors of an insolvent firm at most the sum $v_{ins} - c$. Therefore the repayment to creditors is F if solvent and $v_{ins} - c$ if it goes bankrupt.

Because the credit market is competitive, F is the largest sum that creditors can demand to fund the project. The risk-free interest rate is assumed to be zero, so that a borrowing firm's interest rate is a function only of the riskiness of its project and the properties of the bankruptcy system that is in place.

Investment Problem

Creditors who lend I should expect to receive I in return. This expectation can be written as:

$$I = p_{solv} \cdot F + (1 - p_{solv})[v_{ins} - c]$$

$$F = \frac{I - (1 - p_{solv})[v_{ins} - c]}{p_{solv}} \qquad (1)$$

If the expected value that creditors receive conditional to insolvency increases (higher [v_{ins} – c]), F declines, diminishing the interest rate charged by creditors. Intuitively, the more that creditors expect to receive in the insolvency state, the less creditors will require the firm to repay in the solvency state. The firm's interest rate is $r = \frac{F}{I} - 1,$ that is increasing in *F*, which is the value that the firm is required to repay in solvency state. Denoting by v^u_{ins} and c^u the per-unit-of-investment (I = 1) counterparts of v_{ins} and c we also have:

$$r = \frac{1 - p_{solv}}{p_{solv}}\left[1 - (v^u_{ins} - c^u)\right]$$

that is decreasing in the probability of success and/or in the return of insolvency states.

Proposition 1: *A higher (lower) expectation of return in the insolvency state reduces (raises) the interest rates charged by the creditors.*

The bankruptcy system affects both elements that compose the return in case of insolvency (v and c). Agility in the bankruptcy procedure decreases the cost of the procedure and brings ex-ante gains. Moreover, the return is affected by the procedure choice. If the return in reorganization (liquidation) is greater than in liquidation (reorganization) $(v_R > (<) v_L)$, the firm should be reorganized (liquidated). Thus, the firm's insolvency-state value is higher in a system that liquidates economically inefficient[9] firms and saves economically efficient (but financially distressed) firms than it would be in a system that attempted to save all firms.

Obviously, F, and thus r, also will increase if creditors receive only a fraction of the insolvency return (v_{ins} – c). Two characteristics of Bankruptcy Law may affect the insolvency return in this way. First, if reorganization is allowed violations of the Absolute-Priority Rule may occur, with some portion of value in bankruptcy going to shareholders even when creditors are not paid in full. The second characteristic happens

when the Bankruptcy Law decree the priority of tax and/or labor claims over secured creditors' claims, very common in developing countries.

Suppose that l is the value of claims that came before creditors' claims, thus:

$$I = p_{solv} \cdot F^{l} + (1 - p_{solv}) \max[v_{ins} - c - l, 0]$$

Defining $[v_{ins} - c - l]^{+} = \max [v_{ins} - c - l, 0]$ we have:

$$F^{l} = \frac{I - (1 - p_{solv})[v_{ins} - c - l]^{+}}{p_{solv}}$$

Notice that creditors' return may fall in this situation to zero, increasing strongly the cost of capital.

Proposition 2: *Violations in APR and priority of labor and/or tax claims over creditors' claims increases the cost of capital.*

An ex-ante objective of Bankruptcy Law should be to maximize the project option set that creditors want to finance. Lower capital costs are fundamental to this objective.

Society prefers firms to pursue projects with positive expected returns. Denoting W as social welfare, a firm should therefore undertake a project that creates value, i.e.

$$W = p_{solv} v_{solv} + (1 - p_{solv})[v_{ins} - c] - I \geq 0$$

$$W = p_{solv} E_{solv}(v) + (1 - p_{solv}) E_{ins}(v - c) - I \geq 0$$

As there always exists a minimum conditional expectation value of return $(E_{solv}(\underline{v}))$ needed for social efficiency, let $W = 0$. Then

$$E_{solv}(\underline{v}) = \frac{I - (1 - p_{solv}) E_{ins}(v - c)}{p_{solv}}, \qquad (2)$$

always remembering that $F = \frac{I - (1 - p_{solv}) E_{ins}(v - c)}{p_{solv}}$ is identical to the right side of $E_{solv}(\underline{v})$.

[9] A firm is economically inefficient when the value of its assets is greater in some other use.

Since (1) solves for the minimum-repayment promise the firm must make to obtain financing and (2) solves for the minimum conditional expected return socially accepted, we have that it is socially efficient for firms to take all projects that creditors will finance. Notice that if there is an APR violation or claims at the front of creditors' claims, F would be higher and this equality no longer holds, with certain socially efficient projects not being financed.

Proposition 3: *If creditors' claims have top priority and if there are no APR violations, all socially efficient projects are financed.*

Proposition 4: *If APR violations are allowed and/or other claims came before creditors' claims, there exists a set of socially efficient projects that would be not financed.*

Until now we have studied the set of projects that are socially efficient, but it is important to see the borrowers' incentives to invest. The interest rate imposes on firms the expected costs of failure so that a firm's expected return, when it borrows, becomes under APR:

$$E(R^B) = p_{solv}[v_{solv} - F] + (1 - p_{solv})(0) \geq 0$$

$$E(R^B) = p_{solv}(E_{solv}(v) - F) \geq 0 \qquad (3)$$

Substituting for F from expression (1) we have:

$$E(R^B) = p_{solv}E_{solv}(v) + (1 - p_{solv})E_{ins}(v - c) - I \geq 0,$$

which is the expression that tells us that the project is socially efficient. For the minimum conditional expected return $E_{solv}(\underline{v})$, this equation holds with equality. Therefore the borrower invests in all projects that creditors will finance and which are socially efficient.

Proposition 5: *If creditors' claims have top priority and if there are no APR violations, a profit-maximizing firm will pursue projects that creditors will finance and which are socially efficient.*

Moral Hazard Problem

Now let us introduce an asymmetric-information problem that refers to the effort level that firms financing with debt choose when pursuing projects. To simplify the analysis we will consider only two states

of nature: solvent and insolvent. As the variable effort is not observed by creditors, it is difficult for them to know whether a borrowing firm chose the optimal effort level. Until now we have implicitly assumed that the probability that the firm's project would succeed, p_{solv}, was exogenous, therefore p_{solv} did not depend on what the firm did. More realistically, when we consider effort in the problem we assume that the probability of success increases with the firm's effort level. In precise terms, it is assumed that $p_{solv}(e)$ is differentiable, strictly increasing and strictly concave in effort variable e, that $\lim_{e\to 0} p'_{solv}(e) = \infty$, meaning that it is efficient for the firm to choose a positive effort level and that $p_{solv}(\infty) < 1$ for the insolvency state is always possible.

The effort level, despite increasing the probability of the firm's success, is costly to the manager (borrower). Therefore a problem emerges because the socially optimal effort is different from the optimal private effort. From the social perspectives we have:

$$\max_{e} W = p_{solv}(e) \cdot v_{solv} + (1 - p_{solv}(e)) \cdot (v_{ins} - c) - e - I$$

$$p'_{solv}(e_{soc}) = \frac{1}{v_{solv} - (v_{ins} - c)}$$

The socially optimal is that effort should be exerted in increasing the probability of project success until its marginal gains is equal to its marginal cost.

From the manager's perspective we have:

$$\max_{e} W = p_{solv}(e) \cdot (v_{solv} - F) + (1 - p_{solv}(e)) \cdot (0) - e$$

$$p'_{solv}(e_{priv}) = \frac{1}{v_{solv} - F}$$

The firm exerts effort until the point that its marginal private gain is equal to its marginal cost. The difference between the social and private problem appears because the firm divides its gain with creditors in

the success state while the marginal cost is the same for both. Therefore, since $F > v_{ins} - c$ (otherwise the firm is solvent) $p'_{solv}(e_{priv}) > p'_{solv}(e_{soc})$, which implies that $e_{priv} < e_{soc}$.

Proposition 6: *Any bankruptcy system produces an effort lower than the socially optimal.*

Notice that some characteristics of Bankruptcy Law could exacerbate sub-investment in effort. First let us consider the case where the law puts tax and/or labor claims before creditors' claims. As we saw above, this diminishes creditors' gains in insolvency states, making the payment in solvency states higher $(F^l > F)$. This implies that $p'_{solv}(e^*_{priv}) = \frac{1}{v_{solv} - F^l} > \frac{1}{v_{solv} - F} = p'_{solv}(e_{priv})$, and $e^*_{priv} < e_{priv}$, exacerbating under-investment in effort. Intuitively, closer pay-offs reduces the incentive in avoid insolvency states. In the second situation, let us consider a bankruptcy system that allows violations of APR. Suppose that managers extract l in insolvency states, thus:

$$\max_e W = p_{solv}(e) \cdot (v_{solv} - F^l) + (1 - p_{solv}(e)) \cdot (l) - e$$

$$p'_{solv}(e^{**}_{priv}) = \frac{1}{v_{solv} - F^l - l}$$

This implies that $p'_{solv}(e^{**}_{priv}) = \frac{1}{v_{solv} - F^l - l} > \frac{1}{v_{solv} - F} = p'_{solv}(e_{priv})$, and $e^{**}_{priv} < e_{priv}$, also exacerbating the under investment in effort. Intuitively when managers get a payoff in insolvency states, they have less incentive to avoid it creating a moral hazard problem.

Proposition 7: *Sub-investment in effort is exacerbated when the bankruptcy system gives priority to tax and/or labor claims over creditors' claims and pays managers in insolvency states.*

Sub-investment in effort exacerbates the financing problem shown above. The probability of success declines as the firm exerts less effort, making the minimum conditional expectation value of return increase and shrinking the set of fundable projects.

III. 2 - The ex-post financial distress and ex-ante bankruptcy effects

Now suppose that some firms have become financially distressed, but have not filed for bankruptcy. Managers of failing firms may incur two types of effect: the gambling effect that occurs when managers attempt to avoid bankruptcy and the delay effect when managers attempt to delay filing for bankruptcy.

The Gambling Effect

This refers to the fact that managers of firms in financial distress have an incentive to undertake excessively risky investments as a means of avoiding bankruptcy. If risky investment succeeds, its high returns enable the firm to avoid bankruptcy, at least temporarily; if it fails, the firm goes bankruptcy but managers are no worse off since it would have done so anyway without the investment, since managers cannot get less than zero, which is what they take in case of bankruptcy. Equity holders are also in favor of risky investments in this situation of financial distress, since equity is likely to be worth zero if bankruptcy occurs. Losses on risky investment go to creditors in the form of lower pay-off in bankruptcy, with the same pay-off holding in solvent state.

Let us consider now a multi-period model following the model used in an earlier section[10]. At time $t = 0$ the firm borrows $I > 0$, and have to pay F $(F = I(1 + r))$ in solvency states. At time $t = 1$ the firm enters financial distress, but it still owns an amount $Z > 0$ $(Z < F)$ in cash that the manager will use to make a choice between two projects, one risky and another risk-free. Finally at $t = 2$, the firm's final output v is realized, and this is divided between equity holders and creditors. All the hypotheses of section *III.1* still hold.

If managers choose the risk-free project, then the final output v will be Z, where $Z < F = I(1 + r)$. If they choose the risky project instead, then the final output v will be γR, where R is the expected return, which is positive, and γ a random variable with expected value equal to 1. Let γ be distributed discretely in

[10] The model follows Bebchuck (2002).

the interval $[0, \bar{\gamma}]$, where $\bar{\gamma} > 1$. At $t = 1$ the equity holders observe R and the range, but the value of γ is realized in $t = 2$.

It is assumed that given the information available in $t = 0$, the parties know Z but only the distribution of R in [0, R]. The risky project may offer a higher or lower expected return than the risk-free project. The moral-hazard problem is that equity holders may choose the risky project even if $R < Z$. At $t = 2$ the final output is realized and divided between equity holders and creditors. Assuming APR[11], and that the cost to run bankruptcy is zero ($c = 0$), if the firm is solvent equity holders receive $v_{solv} - F$ and creditors F. Otherwise, if the firm is insolvent, equity holders will receive $\max[v_{ins} - F, 0]$ and creditors $\min[F, v_{ins}]$.

Let us see how managers decide between projects at $t = 1$. Once managers observe the R and its distribution, they will choose the risky project if and only if:

$$E_\gamma \max[\gamma R - I(1 + r), 0] \geq \max[Z - I(1 + r), 0] \qquad (4)$$

Let $R_{AP}(r)$ be the smallest non-negative value of R that makes the left- and right-hand sides of (4) equal. Equity holders will choose the risky project if and only if $R \geq R_{AP}$.

If there exist any risky project with expected value equal to Z ($R = Z$) that does not always lead to insolvency ($\gamma Z > I(1 + r)$ in some state of nature), it makes the left-hand side strictly greater than the right-hand side and it is preferred by the managers over the risk-free project. This happens because since we are working with choices after the firm enters in financial distress $Z < I(1 + r)$ and $\max[Z - I(1 + r), 0] = 0$, therefore by construction $R_{AP}(r) = 0$. It follows that for any given r, $R_{AP}(r) < Z$. This inequality implies that managers may choose the risky project even if $R < Z$, it suffices to satisfy $R > 0$ and $\gamma R > I(1 + r)$ in some state of nature.

[11] Later we will see the effect of APR violations.

The equity holders may choose the risky project inefficiently, because they have more gain from a favorable outcome of this project than they have to lose from an unfavorable outcome.

Proposition 8: *If a firm is in financial distress and the Bankruptcy System follows APR, managers will undertake risky projects even if this produces economic costs (*$Z - R > 0$).

Now suppose that the possibility of deviations from APR is available. In this case equity holders will be able to obtain some value regardless of how small v turns out to be. If the firm is in financial distress $(Z < I(1+r))$, equity holders will be able to obtain αv (where $\alpha > 0$). Moreover, by using or threatening to use the reorganization procedure[12], equity holders will be able to get more than their contractual right if the firm is sufficiently close to insolvency, that is if v exceeds $I(1+r)$ by a sufficiently small amount[13]. For simplicity, it will be assumed that the equity holders will always be able to get at least αv even if their contractual right $v - I(1+r)$ is less than that. On the other hand, debt holders will not get full payment but only $(1-\alpha)v < I(1-r)$. Thus, if violations of APR are allowed, equity holders will receive $\max[v - I(1+r), \alpha v]$ and creditors will receive $\min[I(1+r), (1-\alpha)v]$.

Let us see how managers decide between projects at $t = 1$. They will choose the risky project if and only if:

$$E_\gamma \max[\gamma R - I(1+r), \alpha\gamma R] \geq \max[Z - I(1+r), \alpha Z] \qquad (5)$$

Let $R_{VAP}(r)$ denote the unique value of R that makes left- and right-hand sides of (5) equal. Equity holders will choose the risky project if and only if $R \geq R_{VAP}(r)$. Comparing the project choices at $t = 1$ at two regimes:

[12] The reorganization procedure provides the possibility of APR violations.
[13] If the gains of bankruptcy reorganization are greater than solvency, equity holders will go or threaten to go bankrupt to raise their gains.

Once the firm is in financial distress, we have $Z < I(1+r)$, thus $E_\gamma \max[\gamma R - I(1+r), \alpha\gamma R] \geq \alpha Z$.

The left-hand side of (5) is strictly greater than the left-hand side of (4), since $\alpha Z > 0$. Furthermore, with $R_{AP}(r) = 0$, the left- and right-hand sides of (4) are equal and $E_\gamma \max[\gamma R_{VAP} - I(1+r), \alpha\gamma R_{VAP}] = \alpha Z > E_\gamma \max[\gamma R_{VA} - I(1+r), 0] = 0$, the first equality holds with $R_{VAP}(r) > 0$ because $\alpha Z > 0$, and the second holds with $R_{AP}(r) = 0$. Therefore, since $R_{VAP}(r) > R_{AP}(r)$, the set of risky projects available to the equity holders decreases, diminishing the investment in risky projects relative to the system that follows APR. Notice that under both regimes the equity holders capture benefits of favorable outcome of the risky project, however when APR violations are allowed, safe investments also provide gains for equity holders, and this reduces the set of risky projects that they could invest with higher expected gains, decreasing the amount of risky investment when compared with the regime that follows APR.

Proposition 9: W*hen firms are financially distressed, the amount of investment in risky projects is higher in regimes that follow APR than in regimes that allow APR deviations.*

Now, to see the aggregated gambling effect in the economy, let us denote $G = Z - R$ the economic cost per failing firm. Suppose that $(1 - p_{solv})$ is the probability that a firm is financially distressed and N the total number of firms. Therefore the aggregated gambling effect is $(1 - p_{solv}) \cdot N \cdot G$. But notice that $(1 - p_{solv}(e))$ is negatively related to the effort e by managers, since higher effort is less likely to be in financial distress. Therefore there is a trade-off in bankruptcy between the punishment effect and the gambling effect. As we saw in the earlier section, managers have an incentive to work hard when there are no pay-offs in bankruptcy states (APR). This makes fewer firms in financial distress because once $p_{solv}(e)$ increases, the proportion of firms in financial distress $(\downarrow (1 - p_{solv}) \cdot N)$ reduces. However, once firms are financial distress, this system gives the manager the incentive to gamble to avoid bankruptcy, making G high.

On the other hand, a lenient bankruptcy system that violates APR makes the effort smaller than the former, thus increasing the proportion of firms in financial distress. However, this system gives the manager the incentive to gamble less than the hard system. The final effect is ambiguous with a trade-off between effort and the incentive to gamble. If we consider the system that gives priority to other claims instead of creditors' claims, the final result is no longer ambiguous because it provides the negative effect in effort (*proposition 7*) and does not diminish the gamble of equity holders since they still gain nothing in insolvency state, therefore the proportion of financially distressed firms increases and the gamble remains constant, thereby increasing the aggregate gamble effect.

The Delay Effect

This refers to the fact that managers of financially distressed firms have an incentive to delay filing for bankruptcy, in particular if they are automatically replaced in bankruptcy.

To analyze effects of APR violations it is necessary to introduce one more source of asymmetric information, where the two types of asymmetric information are the manager's effort choice and at an intermediate stage the manager alone receiving a signal about the prospects of his project. The idea is to analyze the trade-offs between these two conflicting goals[14]. On the one hand, creditors want a bankruptcy procedure to be harsh on the borrower, following APR, as a severe punishment may increase the borrower's incentive to generate sufficient earnings to repay. On the other hand, creditors want to prevent the waste of resources that takes place if a rescue is necessary but not undertaken in time. The method to obtain this information is to reward for poor outcomes. This reward should be bigger (or at least equal) to the pecuniary gains that managers would receive during the delay period in such a way to incentive them to declare the financial problems at right time. However, this works against effort incentives aggravating the moral-hazard problem because it diminishes the punishment in bad states of nature. Is not clear a priori whether one of the incentive problems is more relevant.

[14] See the theoretical approach at the working paper version.

The optimal resolution would depend on the parameters of the economy. A bankruptcy system that allows APR violations rewards the entrepreneur if he cooperates in a rescue by starting early. This reward violates APR because it must be paid even if some of the firm's debt is not paid in full. This procedure allows an efficient rescue or an efficient early liquidation, mitigating the delay effect. On the other hand it does not induce the firm to exert the right effort because the firm receives a non-zero pay-off in bad states. Therefore the optimal procedure depends on which incentive it is more important to the parties to encourage: optimal effort, at the cost of foregoing the opportunity of an efficient early intervention, or optimal disclosure at a cost of reduce the incentive to effort.

To see the aggregate effect consider *A = losses of delay per insolvent firm.* As number of firms in financial distress is $(1-p_{solv}(e))\cdot N$, the total cost of delay is $(1-p_{solv}(e))\cdot N\cdot A$. As like gambling, a bankruptcy law with strong punishment to debtors raises their incentive to work hard ($\downarrow(1-p_{solv}(e))\cdot N$) but with negative effect in delay declaring bankruptcy ($\uparrow A$). At the other hand a lenient bankruptcy system leads the opposite result. The final effect is ambiguous with a trade-off between effort and the incentive to delay. If we consider the system that gives top priority to other claims instead of creditors' claims, the final result is no longer ambiguous because it provides a negative effect in effort *(proposition 7*) and does not reward debtors to incentive optimal disclosure, increasing the proportion of financial distressed firms and remaining constant the delay, increasing the aggregate delay losses.

III. 3 - The ex-post Bankruptcy Effects

From an ex-post efficiency perspective, a Bankruptcy Law should maximize the total value of the company. There are three main elements behind this objective: first, as little value as possible should be dissipated during the process (minimizing the cost $c(s_i)$), therefore it is desirable to minimize the time[15] that the process will take and the direct and indirect costs incurred during this process. Second, when the reorganizing

[15]The part of time that is spent with delay tactics of equity holders, rather than the time spent on complexity of claims.

process ends, the company's assets should be located at their highest value of use. Finally, when a firm enters bankruptcy the procedure should be chosen correctly, otherwise the company's assets will not produce their highest value.

There is also an ex-ante efficiency produced ex-post the firm enters bankruptcy. From an efficiency perspective, what matters is not only for the total bankruptcy value to be as large as possible but also the division of its value among the participants. This ex-post division has important ex-ante consequences, as we saw in earlier sections. However, it is quite indeterminate whether the beneficial effects of deviations from APR exceed the negative effects.

Filtering Failure

There are two types of firms in financial distress: firms that are economically efficient, i.e. the best use of its capital is the current use, and firms that are economically inefficient, i.e. the value of their assets is greater in some other use.

When an economically inefficient firm enters bankruptcy, the best outcome is for its assets to be liquidated, thereby releasing its capital to move to higher-value uses. However, when an economically efficient firm enters bankruptcy, the best outcome is for it to continue operating, since its capital has no higher-value use.

Therefore, there is an economic justification for having two separate bankruptcy procedures: liquidation when the firms are financially distressed and economically inefficient and reorganization when the firm is financially distressed but economically efficient. However, while financial distress is observable, economic efficiency depends on some unobservable variables such as the earnings of the firm's assets in the best alternative use, so it is difficult to tell with certainty which type they are. This situation produces the so-called Filtering Failure in bankruptcy. There are two cases of failure: the first is when economically efficient firms in financial distress are liquidated but should be reorganized, which is called *Type I Error*; the second is when economically inefficient and financially distressed firms are saved in reorganization but should be liquidated, which is called *Type II Error*.

Each country has its own means of assigning financially distressed firms to a liquidation or reorganization procedure, so the levels of type I and type II errors vary for each country. Countries where reorganization is rare, like England, have high levels of type I error probably occurring. Conversely, in countries where liquidation is rare, high levels of type II error probably occur.

One important factor in filtering failure is who decides whether or nor to save failing firms. In countries where the court appoints officials to take this responsibility, if their decisions are unbiased, they do not influence the frequency of both types of error. But in countries like the United States, where managers have the right to choose between liquidation and reorganization, it is implied that high levels of type II error are likely to occur[16].

As a general rule, ex-post efficiency may require a careful balance between these two existing procedures in bankruptcy law. Let us suppose that a financially distressed and economically efficient firm goes bankrupt. The optimal solution in this case is reorganization that returns v_R. But if type I error occurs, it returns $v_L < v_R$. This eliminates ex-post efficiency and by *proposition 1* increases the cost of capital. The same logic is valid for type II error.

Bargaining in Reorganization

First of all let us consider how the features of reorganization process - like Chapter 11 - affect the division of value. The model of Bebchuck and Chang (1992) identifies three reasons why equity holders might be able to extract value even when creditors are not paid in full. First, if equity holders delay agreement over a plan, there may be a favorable resolution of uncertainty that would cause the value of the firm to exceed the value of its debt. These equity holders have an option value, and to forgo it they must be compensated. Second, if equity holders delay agreement, the company can be expected to incur during the process of bargaining financial distress costs that will dissipate some of the value that debt holders can expect to receive at the end of the process. Therefore, expecting these costs, creditors agree with a plan to save these

[16]See White (1994), who uses an asymmetric information game to model whether U.S. Bankruptcy procedure led to filtering failure.

costs, obtaining a share of these savings in return for their consent. Third, which is valid only for countries that give management the power to propose reorganization plans (like the U.S.), the bargaining power of equity holders is enhanced, strengthens the bargaining position and obtains a bigger share of the extra value[17].

As a consequence, this bankruptcy design provides for violations of APR and the trade-off exposed in earlier sections, with benefits in gambling and delay effects, but with negative result in effort incentive and maybe at the cost of capital.

The reorganization process under the existing bargaining-based rules takes substantial time[18]. The delaying tactics of equity holders and the complexity of the firm's claims dictate the length of the process. During this time, substantial value might be dissipated. Potential buyers may be reluctant to deal with the company, or may demand especially favorable terms while insolvency hovers over the company. Moreover, the reorganization process involves substantial administrative costs, and more importantly, the company under reorganization might incur substantial "indirect" costs from functioning throughout the reorganization process. All these costs grow bigger as time passes.

All these factors increase the cost in insolvency states. If the return in reorganization is v, creditors get $v - c$, where c is the cost of procedure. A bankruptcy law that minimizes such costs ($c^m < c$), by either diminishing the delay tactics of equity holders or reducing the cost of the procedure, diminishes the bargain power of managers ($l^m < l$), increasing creditors' return in insolvency state ($v - c^m - l^m > v - c - l$) and makes (by *proposition 1)* capital less costly. Notice that a reorganization procedure that minimizes managers' bargain power produces the same benefits of APR violations at lower costs, since the payment to managers tend to decrease. Slow reorganizations increase costs of the process and raise its ex-post inefficiency. It should be remembered that to reduce this time and consequently the cost of process, violations of APR

[17]See Franks and Torous (1989), LoPucki and Withford (1990), and Eberhart et al (1990) for empirical studies.
[18]See Lopucki and Withford (1990)

induce the manager to act quickly, thus reducing costly delays. The trade-off emerges again in this situation diminishing costs but giving part of the return to managers.

IV - Evaluating Bankruptcy Law in Latin America

Our challenge here is to evaluate the current stage of Bankruptcy Law in Latin American countries. Nowadays there is little to say about the design of optimal Bankruptcy Law. However, there exist two consensual points in this debate. One refers to the protection that Bankruptcy Law must provide to creditors, and the other is about the goals-of-insolvency procedure. The measure of bankruptcy procedure goodness coming from these two sources. The creditors' protection variable tells us if the Bankruptcy Law is good enough to make loans attractive to creditors, providing the firms with easier access to external finance. The goals-of-insolvency procedure represents the consensus about the characteristics of an efficient bankruptcy procedure. For a comparative analysis, we use seven groups of countries: the OECD, Latin America & the Caribbean (LAC), the Middle East & North Africa (MENA), Europe & Central Asia (ECA), East Asia & the Pacific (EAP), South Asia (Sas) and Sub-Saharan Africa (SSA). The data used is from Doing Business 2003 and 2004, World Development Indicators 2004 and International Finance Statistics 2004.

IV. 1 - Creditors' Protection

The literature of Law and Finance points to the fact that a good bankruptcy law has to provide legal protection to creditors. In section *III.1* we saw that better legal protections enable financiers to offer entrepreneurs money at better terms, and to predict that countries with better legal protections for creditors should have a broader credit market.

Several forms of bankruptcy laws are being used around the world. Some of them are too favorable to creditors, giving them a strong protection, like the English Law, where liquidation is nearly always used. This leads to the elimination of good and still healthy firms. On the other hand there are countries like Brazil, where the law provides a weak protection to creditors, giving priorities to labor and tax claims before claims of secured creditors.

It is possible to compare the creditor protection provided by bankruptcy law in different groups of countries and rank the current situation of Latin America. As a measure for creditors' protection we use the index constructed by La Porta, Lopez-de-Silanes, Shleifer and Vishny (1997) that summarizes creditors' rights[19] in bankruptcy law computed by Doing Business 2003 from World Bank iterated with a measure of enforcement[20]. This iteration between law and enforcement is important because if rules and regulations are not enforced, creditor rights will be inadequate regardless of what is written in the bankruptcy-law procedure codes. The creditor-protection measure varies in a [0, 1] interval.

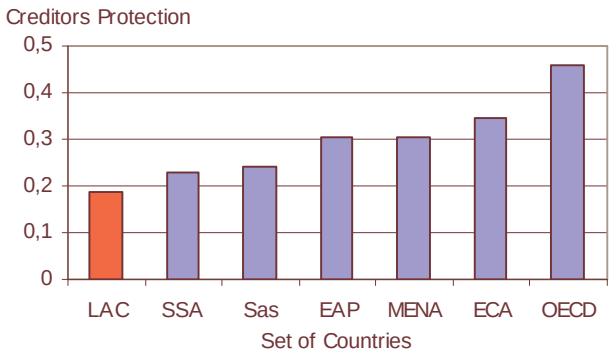


Figure 3: Creditors' Protection in each set of countries

Looking at Figure 3 that shows creditor protection in different sets of countries, we notice that the OECD has the highest level of creditor protection, while Latin America and the Caribbean have the lowest. Latin America and the Caribbean protect their creditors very poorly (even less than Sub-Saharan Africa), reducing the interest of creditors in the credit market, increasing the cost of capital and the difficulty for firms to finance their investments with debt.

Looking more specifically at LAC countries (Figure 4), Chile has the highest creditor protection provided by bankruptcy law, with a degree similar to the average of OECD countries. However, most countries vary between 0.05 and 0.17, which is a very low level in a measure ranging between 0 and 1.

[19] Creditors' right is the highest when: secured creditors are paid first; the manager does not stay in reorganization; there is no "automatic stay" imposed by the court; and creditors need to consent to file the reorganization petition.
[20] Rule of Law index computed by International Country Risk Guide.

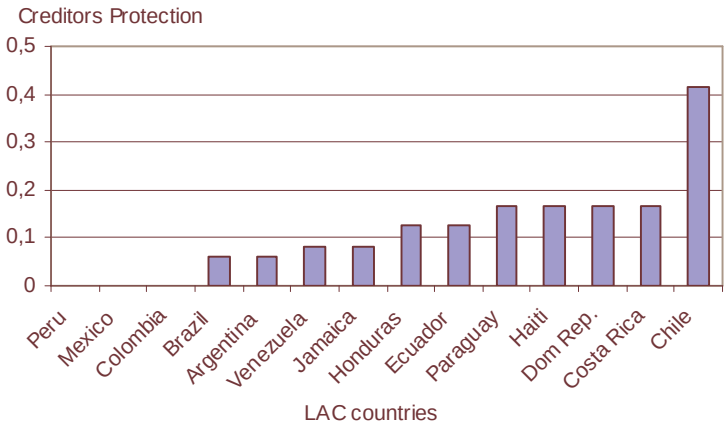


Figure 4: Creditors' Protection in LAC countries

A common notion in the literature of Law and Finance is that a good bankruptcy law has to provide strong protection to creditors. La Porta, Silanes, Shleifer and Vishny (1997, 1998) were pioneers in studying empirically the relevance of this relationship. They show that countries with a high level of creditor protection have higher levels of financial development.

Controlling for log (GDP), log (population), information-sharing[21] and quality of enforcement[22], we explore the relation between the credit market development (measured by log (Private Credit/GDP)) and Creditors' Protection. We control for the total GDP (log (GDP)) on the theory that larger economies may have bigger credit markets because of economies of scale in organizing the supporting institutions. We control for population on the theory that countries with large population tend to be poorer in per capita terms (log (GDP) - log (population) = GDP per capita) with negative effects on credit market. We use the measure of days for enforcement as a proxy for the efficiency of legal system. Finally, we control for information-sharing to capture the adverse-selection problem in the credit market. In Table 2 we see that the coefficient of the creditor protection is statistically significant at the 2% level and reveal that the bigger is the protection provided by law to creditors the larger is the credit market. According to the result if, for example, the Brazilian bankruptcy reform shifts its protection of creditors of 0.06 to the mean of Latin America (0.19) or

[21] This refers to data on the existence of public- and private-credit registries in different countries during the same time.
[22] This measures the number of days it takes to enforce a simple debt contract.

to the mean of OECD (0.46), it would increase credit market in approximately 10% and 32% respectively. Also, the GDP, GDP per capita, information-sharing, population and quality-of-enforcement controls are all significant, the first three being positive and the last two negative, as we expected. The effect of information-sharing on credit market is considerably large but it is not important to Latin America once that except for Jamaica, the rest of countries have the mechanism of information on credit registry. If Jamaica implements such mechanism it would increase its credit market in more than 70%. An increase in the quality of enforcement also produces a relevant effect on credit market. The average time that Latin America takes to enforce contracts is the highest between regions, 462 days. A falls of the average to OECD level (230 days) means an increase of 11% in Latin American credit market. Looking exclusively to Guatemala that has the lowest quality of enforcement (1459 days), an improvement in its mechanism that brings to Latin America average means an expansion of 60% of its credit market.

Table 2: OLS regression of Private Credit/GDP in Creditors' Protection
Dependent Variable: log (Private Credit/GDP) – 120 observations (average 2000-2003)

Independent Variable	Coefficients	t-statistic
Constant	-7.20[a]	-9.00
Creditors' Protection	0.70[b]	2.53
log GDP	0.40[a]	9.89
log Population	-0.25[a]	4.40
Quality of Enforcement	-0.0005[c]	-1.82
Information-Sharing	0.55[a]	3.35
Obs	120	
R-squared	0.66	
Adjusted R-square	0.64	

Note: a=significant at the 1% level; b=significant at the 5% level; c=significant at the 10% level.
Standard errors and covariance robust to heteroskedasticity.

Regressing each sub-index of creditors' rights in the measure of credit market development, we find that creditors' consent to reorganize and priority have positive effect on credit market, with automatic stay, and the exclusion of managers in the process of reorganization having no significance at all. This result is aligned with theoretical claims in earlier sections that highlight: the negative effect when other claims such as labor and/or tax claims have priority over creditors' claims, and the relevance of the role of creditors in reorganization, mainly due to the provision of protection and incentive against fraud. According to results in table 3 any country that reforms its bankruptcy law giving top priority to secured creditors tends to increase

its credit market in 28% in absolute terms. Also, creditors' consent in reorganization may expand credit market in 31% in absolute terms.

On the other hand, no significance of automatic stay, and exclusion of managers in case of reorganization illustrates the ambiguity of violations of APR, since these variables give bargaining power to equity holders. Using the same controls as the last regression their results are practically the same.

Table 3: OLS regression of Private Credit/GDP in each sub-index of Creditors' Rights
Dependent Variable: log (Private Credit/GDP) – 120 observations (average 2000-2003)

Independent Variable	Coefficients	t-statistic
Constant	-7.31[a]	-8.97
Consent of creditors	0.27[b]	2.03
Priority	0.25[c]	1.91
No Autostay	-0.03	-0.22
Manager out	0.15	1.12
Quality of Enforcement	-0.0005[a]	-2.26
Information-Sharing	0.57[a]	3.32
log GDP	0.42[a]	11.78
log Population	-0.28[b]	-5.10
Obs	120	
R-square	0.65	
Adjusted R-square	0.63	

Note: a=significant at the 1% level; b=significant at the 5% level; c=significant at the 10% level.
Standard errors and covariance robust to heteroskedasticity.

IV. 2 - Goals of Insolvency

Despite all the research on bankruptcy, today there does not exist a consensus on the best procedure to adopt. It is hard to design an optimal bankruptcy procedure from first principles, given that economists do not at this point have a satisfactory theory of why parties cannot design their own bankruptcy procedures (i.e., why contracts are incomplete). Frequently, suggestions for new bankruptcy procedures emanate from different visions[23]. However, it is possible to identify a consensus on certain issues, such as some characteristics of an efficient bankruptcy procedure.

Oliver Hart (1999) states the characteristics of a good procedure. First, there is a strong argument that a good bankruptcy procedure should deliver an ex-post efficient outcome, that is, it should maximize the total value available to be divided between the debtor, creditors and possibly other interested parties. The second goal concerns ex-ante efficiency, and says that a good bankruptcy procedure should preserve the bonding

role of debt by penalizing managers and shareholders adequately in bankruptcy states. Without any adverse consequence at all, there is very little incentive to pay their debts. The third goal, concerned with the stability of priority claims, says that a good bankruptcy procedure should preserve the absolute priority of claims, except that some portion of value should possibly be reserved for shareholders. This goal have two advantages: first, it helps to ensure that creditors receive a reasonable return in bankruptcy state, which encourages them to lend; second, it means that bankruptcy and non-bankruptcy states are not threatened differently. However, it should be remembered that criticism can be made against APR: the management, acting on behalf of shareholders, will have an incentive to avoid bankruptcy even if this gives rise to inefficient bankruptcy decisions like the gamble and delay effects. For this reason, there may be a case for reserving some portion of value in bankruptcy for shareholders.

Doing Business from World Bank computed a measure that documents the success in reaching the three goals-of-insolvency, as stated in Hart (1999). It is calculated as the simple average of the cost of insolvency (from 0 to 100, where higher scores indicate less cost), time of insolvency (from 0 to 100, where higher scores indicate less time), the observance of absolute priority of claims, and the efficient outcome[24] achieved. The total Goals-of-Insolvency Index ranges from 0 to 100: a score of 100 on the index means perfect efficiency, while 0 means that the insolvency system does not function at all.

Looking at the figure 5, we notice that LAC countries do not have an efficient bankruptcy procedure, performing better than Sub-Saharan Africa and South Asia alone, while the OECD has the best insolvency system.

[23] See section II.
[24] The efficient outcome is defined as any bankruptcy procedure that results in a going-concern sale without an interruption in operations, or a successful rehabilitation.

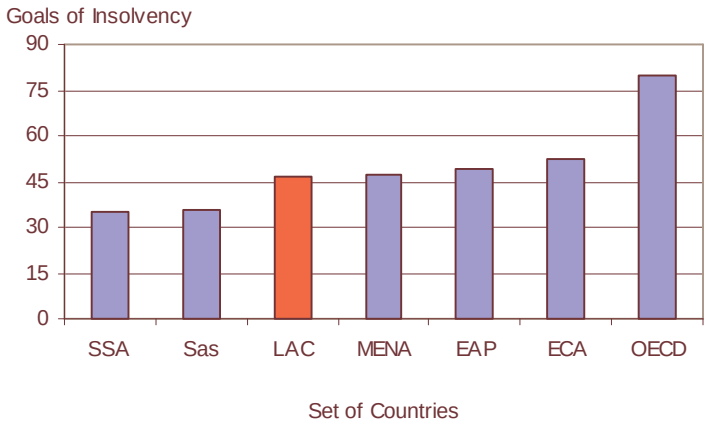


Figure 5: Goals-of-Insolvency Index for each set of countries

Figure 2, in the introduction, shows that an efficient bankruptcy system has a positive effect on the credit market, making access to credit easier and cheaper; both results being aligned with propositions 1 and 3 respectively. This happens because creditors are more confident in having their loans repaid when a firm fails. Notice that figure 2 (third graphic) also shows they are right to have this expectation.

Table 4: Effects of goals-of-Insolvency
Independent Variable: Goals-of-Insolvency

Dependent Variable	OLS regression
Interest rate spread	-0.13%[a] (2.58)
Private Credit/GDP	0.95%[a] (5.50)
Creditors' recovery rate	0.83[a] (12.95)

Note: a=significant at 1%.
t-Statistic are in parentheses.
Standard errors and covariance robust to heteroskedasticity.
R-square varies between 0.16 and 0.67, considering all cases.

Table 4 reports results of regressions between goals-of-insolvency versus Private Credit/GDP, interest rate spread and creditors' recovery rate. The regression between the interest-rate spread and the goals-of-insolvency index is statistically significant at the 1% level[25], controlling for log (GDP per capita)[26]. This means that for each point increased in the insolvency efficiency, the interest-rate spread decreases by 0.13%.

[25] To verify if outliers (two observations in the upper left-hand side in the first graphic of figure 2) were driven the result we use a quantile regression in the median. We find that the coefficient is still negative and significant.
[26] We also regress against GDP per capita to control effects of richness or poorness over the credit market.

Private credit/GDP and recovery rate are positively related with goals-of-insolvency and both statistically significant at the 1% level, also controlling by log (GDP per capita). In this case, for each point increased in the insolvency efficiency, private credit and recovery rate increase by 0.95% of GDP and 0.83 cents on the dollar respectively. To exemplify the impact of an improvement in bankruptcy efficiency, let us consider a case where Brazil (24) increases its insolvency efficiency until the Latin American average (46). Its interest-rate spread will fall approximately 3% (7% in relative terms), and its private credit and creditors' recovery rate raises by 22% (credit market expands in 60%) and 17.6 cents on the dollar respectively. If the Latin America average increases to OECD level (80), its interest-rate spread falls 4% (33% in relative terms), its private credit and recovery rate increases by 31% and 24.8 cents on the dollar respectively (both increase approximately 93% in relative terms).

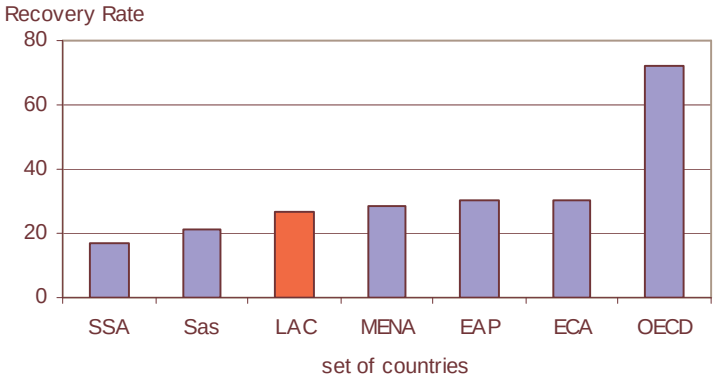


Figure 6: Recovery rates of each set of countries

Recovery rate varies widely among countries, the most desirable being to have as big a recovery rate as possible, because this increases creditors' return in bankruptcy states, reducing the cost of capital. Figure 6 shows that the OECD has the highest recovery rate, with creditors recovering more than 70 cents on the dollar when a firm fails. The average in Latin America is 26 cents on the dollar of recovery, higher than South Asia and Sub-Saharan Africa alone. The worst result among Latin American countries (Figure 7) comes from Brazil, with a recovery rate of 0.2 cents on the dollar, and the best result is from Mexico, where

creditors recover 64.5 cents on the dollar. The highest recovery rate in the world is Japan, with 92.4 cents on the dollar.

Therefore, it would be interesting for Latin American countries to concentrate efforts to reform their bankruptcy systems in the direction of the characteristics listed by Hart (1999) to improve the efficiency of bankruptcy procedure and impact positively on the credit market.

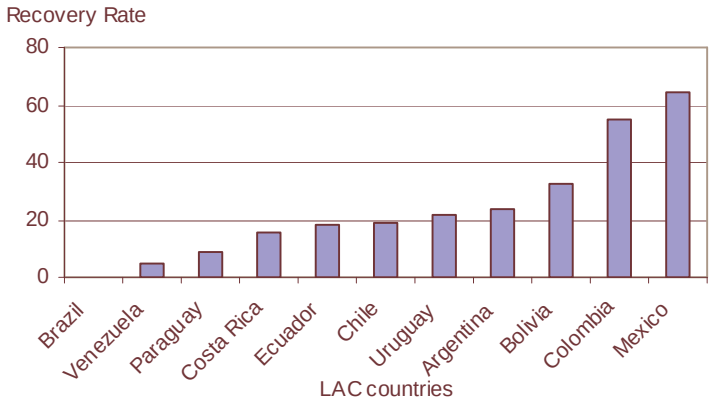


Figure 7: Recovery rates of Latin American countries

V – Brazilian Bankruptcy Reform[27]

In the last decades, a legislative reform has taken place in several Latin American countries, particularly in South America where Argentina, Bolivia, Brazil, Colombia, Ecuador and Peru have either reformed or are engaged in reforming the legal framework for bankruptcy. The most recent reform occurred in Brazil in a process that began in 1993, concluded in June 2005. This section will focus in such reform, explaining the characteristics of the former law, its main changes and effects over the Brazilian economy.

V. 1 – The Former Brazilian Bankruptcy Law

The former legal framework for corporate insolvency in Brazil was very fragmented, with the core of legislation for bankruptcy proceedings having been enacted in 1945. The *Lei de Falências* regulates both liquidation (*falência*) and reorganization *(concordata*) proceedings for merchants (i.e., a legal entity that engages in commerce in its usual course of conduct). State-owned corporations and private-public joint-stock

companies were excluded from bankruptcy proceedings until 10.31.2001, when a modification allowed the bankruptcy of private-public joint-stock companies.

Despite providing both proceedings and intending to prevent or avoid liquidation of enterprises, in practice the insolvency process has proven to be ineffective at maximizing asset values and protecting creditor rights in liquidation - bad to the cost of capital (proposition 1) - or at salvaging viable distressed businesses incurring in type I error. The insolvency proceeding is very slow, taking ten years on average to complete the whole process. The average time of insolvency proceeding in Brazil is the slowest in the world and much higher than the mean of Latin America countries[28] (figure 8). Liquidation is marked by severe inefficiencies, and the reorganization process is obsolete and excessively rigid to provide meaningful rehabilitation options for modern business.

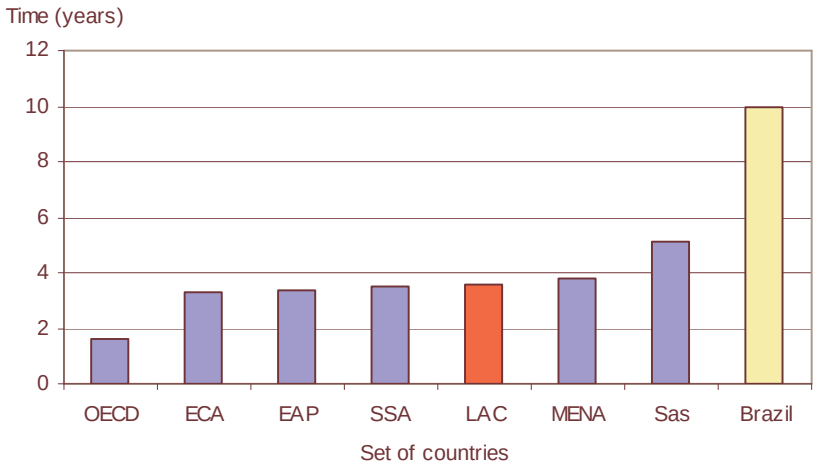


Figure 8: Average time involved in the insolvency proceeding per region of countries

The process of disposing of assets is slow and highly ineffective, due to court and procedural inefficiency, lack of transparency and the so-called *problema da sucessão*, i.e. the transfer of liabilities, notably tax and labor liabilities to the buyer of property sold in liquidation, thus deteriorating the market value of assets of an insolvent company. In addition, the priority given by bankruptcy law to labor and tax claims has the practical effect of eliminating any protection to other creditors (see proposition 2). The process

[27]In Appendix A, the co-author, Aloisio Araujo, explains the process of the reform in Brazil.

has led to an informal use of the system to promote consensual workouts. An insufficient legislative framework otherwise hampers workouts.

As a consequence of shortcomings in the present Brazilian legal and institutional system concerning insolvency, it is possible to conclude that:

- creditors' rights are only weakly protected and financial markets are characterized by a relatively low credit volume and high interest rates (the ratio Private Credit/GDP is only 35% and the spread of interest rate is 49% in average for the period of 1997 to 2002),
- distorted incentives and the lack of effective mechanisms to support corporate restructuring result in disproportionately high default rates of potentially viable companies,
- exit costs for non-viable companies are increased,
- productivity and employment are reduced.

In 1993 Brazil initiated efforts to update its corporate insolvency legislation. Since then, the original project underwent several amendments until the House of Deputies approved its latest version in October 2003. The project went to the Senate, which introduced some further improvements to the new law, being approved in July 2004. In December 2004 the modified project that had returned to the House of Deputies was approved again, taking effect in June 2005.

V. 2 – Credit Market and Changes in Brazilian Bankruptcy Law

As we saw in earlier sections, the bankruptcy law has a strong effect on the credit market, and this is no different in Brazil, whose credit market is not well developed, with scarce and expensive credit. To make the analysis more attractive, we will compare several indicators of the Brazilian credit market and bankruptcy law against the mean of Latin American countries and rich countries.

Table 4 reports credit characteristics in Brazil, Latin America and the OECD. We present the 1997-2002 mean because it is the period that all countries have observations for private credit and interest-rate spread. At first sight we tend to think that Brazilian's private credit as a proportion of GDP is very low when

[28] Data from Closing Business computed by Doing Business 2004 of World Bank

compared with the OECD, but it is not so inferior to the mean of Latin America countries. However, this situation is even worse than it seems, since a significant part of credit came from a development bank (BNDES) that is controlled by the government. The Development Bank finances a large share of non-housing investments at a subsided interest rate. Looking at the interest-rate spread confirms this chaotic situation. This rate is more than four times bigger than the mean rate in Latin American countries and more than twelve times bigger than the mean rate in OECD countries.

Table 4: Credit Indicators

	Private Credit/GDP (1997-2002)	Interest-Rate Spread (1997-2002)
Brazil	35.00%	49.00%
Latin American Countries	44.23%	11.00%
OECD	102.748%	3.87%

Source: World Development Indicators 2004.

One important reason[29] for this situation in the credit market is the design of the Brazilian bankruptcy law. Using the same measures as section IV we see in Table 1 (in the introduction) that creditors have very low protection in Brazil even when compared with the mean of Latin American countries. This exacerbates the moral-hazard problem and inhibits the supply of credit. Also from the Goals-of-Insolvency Index we see that the bankruptcy procedure is very inefficient, being long, costly and rarely achieving efficient outcome, reducing the return in bankruptcy states and raising the cost of capital (see proposition 1). We can see this return in bankruptcy states as the creditors' recovery rate in the case of bankruptcy, which is 0.2 cents per dollar in Brazil, the lowest value in the whole world, while the mean in Latin America is 26 cents and the OECD is 72 cents.

So the recent reform in Brazilian bankruptcy law is coming to improve the efficiency in insolvency procedure, with positive effects on the credit market. The new law improves on existing legislation by integrating the insolvency system with the country's broader legal and commercial systems, providing an option to reorganize in or out of court, and striking a reasonable balance between liquidation and reorganization, mitigating the error type I. It also would significantly improve the flexibility of the

[29] Other factors not treated in this paper contribute to this bad credit-market situation, such as poor concurrency in the banking sector, high yield of treasury bills, high banking costs, etc.

insolvency legal system, by allowing the conversion of recuperation proceeding in liquidation, permitting the debtor's application for rehabilitation during the procedural term awarded to respond in the liquidation proceeding filed against him, and introducing a new out-of-court reorganization system for pre-package restructuring plans.

The main changes inside the liquidation procedure are:

C1 - Limitation of labor credit (until 150 minimum wages).

C2 - Credit with collateral above tax credit.

C3 - Unsecured credit above some of the tax credit.

C4 - Firms will be sold first, preferably as a whole, and the constitution of the creditors' list will come later, thus speeding up the process and increasing the value of the bankruptcy state.

C5 - New credit given in the reorganization step will be given first priority in liquidation.

Notice that C1, C2 and C3 have several effects on the life of firms. In cases of ex-ante financial distress they reduce the cost of capital (proposition 2), span the credit market and the set of socially efficient projects that would be financed (proposition 4), and reduce the sub-investment in effort that is exacerbated when the bankruptcy system gives priority to tax and/or labor claims over creditors' claims (proposition 7). In cases of ex-post financial distress the proportion of financially distressed firms reduces, because the investment in effort increases and despite the gamble and delay effects remaining constant, the aggregate gamble and delay effect is diminished. The effect of C4 is that the value of firms in bankruptcy states will increase - due to better coordination - and the more that creditors intuitively expect to receive in the insolvency state, the less they will require the firm to repay in the solvency state, reducing the cost of capital (proposition 1). C5 is important for reducing the indirect costs in reorganization procedure, where potential buyers could be more reluctant to deal with the company or may demand more especially favorable terms than if C5 did not exist. This factor increases: creditors' return in the insolvency state, and the chance of success in reorganization.

Notice that all these changes work to raise both measures of bankruptcy efficiency. C1, C2 and C3 improve creditors' protection, while C4 and C5 diminish costs and improve goals of insolvency.

Reorganization was inspired in Chapter 11 of the U.S Bankruptcy Code. Unlike the old process called "concordata" that does not permit any renegotiation between the interested parts and with only few of them being entitled to recovery, now managers make a sweeping proposal of recuperation that should be accepted by each one of the classes. Creditors will have to negotiate and vote for the reorganization plan. There is a "stay period" when creditors cannot take any of the firm's goods, not even those given as collateral so as not to disturb the firms' activities. These changes may permit more economically efficient firms to recover and reduce type I error.

An extra-judicial procedure was also created, which is very important in Brazil since it saves the high court costs. The off-the-court reorganization is a "pre-packaged" mechanism, where the majority imposes the decision to the minority. The private renegotiation between groups of creditors and debtors avoids several losses during the firm's rehabilitation that is observed in case of open renegotiation procedure.

Due to the relevancy of fraud in bankruptcy, important changes were made in the new law to avoid it. Changes in liquidation like C1 (limitation of labor credit), C2 and C3 (Credit with collateral above tax credit and unsecured credit above some of the tax credit) as like the important role of creditors in reorganization provide incentives against fraud in bankruptcy procedure. The limitation of labor credit (until 150 minimum wages) diminishes the possibility of the manager to cheat the law by creating jobs to "friends" in such a way to receive as regular workers (for the manager) of the failing firm. Secured credit above tax and labor claims that make higher the recovery of creditors in case of bankruptcy and the important role of creditors in reorganization raise creditors' incentive in monitoring the bankruptcy process, mitigating fraudulent actions. The important role of creditors in reorganization, also raise their incentive in monitoring the bankruptcy process, mitigating fraudulent actions. There were several reasons for indictment for fraud in the old law, but these were not cumulative and each one stipulated a maximum of two years of penalization. Since the judicial process was very slow, most penalties were prescribed and as a result there was always the

possibility of no punishment at all. Under the new law, those two years of penalty are cumulative and the judicial process is accelerated, hence the cost of fraud is expected to increase considerably. Another important change in the new law is that all frauds are remitted directly to the procedures of general criminal law, which is much more punitive than the special bankruptcy-crime law and the old special bankruptcy-crime law. Moreover, since private creditors expect to receive more under the new law, they will be watching the judicial procedures of bankruptcy more closely and most likely they will be important allies in enforcing fraud penalty.

Besides the reform in bankruptcy law, many other changes in laws have been important to credit-market development. Changes in mortgage law allow for the house to remain in the possession of the creditor, thereby circumventing the difficulty of the judiciary not transferring property from the debtor to the creditor in case of default due to an ideological bias. This has caused the collapse of mortgage in Brazil. However, it is not clear that the situation will improve. Also, changes were made in contractual laws that allow for fast collection in case of unpaid debt.

V. 3 - The Relevancy of the Judiciary

The role of judiciary is fundamental for the fulfillment of the law. If rules and regulations are not properly enforced, even if the law is well designed it will not attain its objectives in full.

There are two measures of enforcement that can qualify the quality of courts. The first one is the "quality of enforcement", that is, the number of days that the court takes to solve a payment dispute. The second is called "rule of law", which is the measure of the "law and order" tradition of a country. Table 5 tells that under both measures, the quality of the Brazilian Judiciary is inferior to the mean for Latin America. Contracts take more time to be enforced and the tradition of fulfilling the law is weak.

Table 5: Judiciary's Quality Indicators

	Quality of Enforcement (days)	Rule of Law [0, 6]
Brazil	566	1.50
Latin American Countries	440	2.35
OECD	230	5.33

Source: Doing Business 2004 and International Country Risky Guide 2004.

Castelar (2001, 2003) made a careful study of the Brazilian Judiciary. Following his research, it is possible to find explanations for the low quality of the judiciary in Brazil. Castelar reports an interview held with entrepreneurs and magistrates. Entrepreneurs evaluate agility as bad or worse in 91% of the cases, while even magistrates themselves evaluate it as regular or worse in 86.4% of the cases. Like agility, the low capacity to forecast judiciary decisions was pointed out as an important feature of the Brazilian Judiciary. Asked when the decision of the magistrate reflects his political views, only 22% answered *rarely* or *never*. Therefore the decisions of the majority of magistrates are affected by political views. Finally, magistrates were asked how they would behave in the case of a conflict between (a) compliance with contracts and (b) the interests of less privileged social segments: only 19.7% answered option (a), that is, that they would follow contracts.

Therefore, all these answers indicate an environment unfavorable for credit, indicating why expectations of recovery are low when a firm goes bankrupt and courts enter the process.

However, recent changes have occurred in the Brazilian Judiciary. Congress approved a law that establishes the higher court's decision as binding, which means that if a superior magistrate's court makes certain decisions, a lower court cannot make a different decision in similar cases. This change reduces the burden of the judiciary and decreases the court's time. There is also a law in Congress that changes the procedural code in order to eliminate several procedures that contribute to court delays. Both changes contribute to raise the efficiency of the judiciary and help to develop the credit market.

VI - Conclusion

As a theoretical basis, we understand that a bankruptcy system should seek ex-post and ex-ante efficiency. Ex-post efficiency means that the procedure maximizes the total value of the firm's assets, providing higher return to creditor in insolvency states and consequently lower cost of capital and larger set of financed projects in the economy. Ex-ante efficiency treats the optimal division of value in case of bankruptcy. Violations of APR have positive effects in situations of financial distress by providing incentives to reduce

delay and investments in inefficient risky projects, but also have negative effects ex-ante financial distress by reducing the incentive of managers' efforts. The effect over the cost of capital is ambiguous. Therefore its optimality depends particularly on the country's characteristics that will determine which effect is more relevant. Priority of creditors' claims over tax and/or labor claims proves to be more efficient than otherwise because of the significant positive impact on both cost of capital and managers' effort, without negative impact. Additionally, it offers incentive to creditors monitor actions of managers in bankruptcy, which helps to avoid fraud.

In practice, our empirical analysis tells that countries of Latin America have a poor system of bankruptcy with problem in both measures of bankruptcy procedure goodness. Their inefficient procedure does not allow maximizing the firms' value, reducing significantly the creditors' recovery rate and increasing the cost of capital. In addition, the protection for creditors is the lowest in the whole world, reducing their interest in supply credit, and increasing the negative impact on the credit market.

However, despite the inefficiency of bankruptcy law in Latin America, this picture began to change during the last decade, when a series of reforms in the bankruptcy system took place, mainly in South American countries. The Brazilian case was emphasized since it is the most recent reform in the region. Improvement in liquidation and reorganization procedures, as well as the creation of an extra-judicial procedure, should have a strong and positive impact on the Brazilian credit market. The new law works to reduce the inefficiency of bankruptcy procedure, making it less costly and faster, and providing a good balance between liquidation and reorganization. Moreover the new law tries to increase both protection and the role of creditors in the insolvency procedure. Also, despite the performance of courts in Brazil indicating an environment unfavorable to credit, efforts are being made to change this picture.

Finally we conclude that these changes in Brazilian bankruptcy law tend to improve the credit market situation in Brazil, reducing the cost of capital and the credit constraint, fostering new investments and economic growth.

References

[1] Aghion, P., Hart, O. and Moore, J. 1992: "The Economics of Bankruptcy Reform", *Journal of Law, Economics and Organization*, 8:523-546.

[2] Andrade, G, Kaplan, Steven N., 1998: "How Costly is Financial (Not Economic) Distress? Evidence from Highly Leveraged Transactions That Became Distressed", *The Journal of Finance*, 53: 1443-93

[3] Araujo, A. and Funchal, B., 2004: "How much creditor protection?", mimeo.

[4] Araujo, A., Lundberg, E., 2003: "A Nova Lei de Falências: Uma Avaliação", *Seminário de Economia Bancária e Crédito, Central Bank of Brazil.*

[5] Baird, Douglas G., Morrison, Edward R., 2001: "Bankruptcy Decision Making", *Journal of Law, Economics and Organization*, 17:356-72.

[6] Baird, Douglas G., 1998: "Bankruptcy's Uncontested Axioms", *The Yale Journal of Law*, 108: 573-599.

[7] Bebchuck, Lucian A., 1988: "A New Approach to Corporate Reorganizations", *Harvard Law Review*, 101, 775-804.

[8] Bebchuck, Lucian A. and Chang, H. F., 1992: "Bargaining and the Division of Value in Corporate Reorganization", *Journal of Law, Economics and Organization*, 8:253-279.

[9] Bebchuck, Lucian A., 1998: "Chapter 11", *The New Palgrave Dictionary of Economics and The Law*, vol. 3, 219-224.

[10] Bebchuck, Lucian A., 2002: "Ex ante Costs of Violating Absolute Priority in Bankruptcy", *Journal of Finance,* 57: 445-460.

[11] Bebchuck, Lucian A., 2000: "Using Options to Divide Value in Corporate Bankruptcy", *European Economic Review*, 44: 829-43.

[12] Beck, T., Demirgüç-Kunt, A. and Levine, R., 2004: "Finance, Inequality and Poverty: Cross-Country Evidence", University of Minnesota (Carlson School of Management), mimeo.

[13] Bergoeing, R., Kehoe, P. J., Kehoe, T. J., Soto, R., 2002: “A Decade Lost and Found: Mexico and Chile in the 1980s”, *Review of Economic Dynamics*, 5, 166-205.

[14] Berkovitch, E., Israel, R., 1999: “ Optimal Bankruptcy Laws across Different Economic Systems”, *The Review of Financial Studies*, vol 12, nº 2: 347-77.

[15] Berkovitch, E., Israel, R., Zender, Jaime F., 1997: “ Optimal bankruptcy law and firm-specific investments”, *European Economic Review*, 41: 487-97.

[16] Bhattacharyya, S., Singh, R., 1999: “The Resolution of Bankruptcy by auction: Allocating the residual right of design”, *The Journal of Financial Economics*. 54: 269-94.

[17] Bonilla, C., Fischer, R., Lüders, R., Mery, R., Tagle, J., 2003: “Análisis y Recomendaciones para una Reforma de la Ley de Quiebras”, mimeo.

[18] Brown, David T., 1989: “Claimholder Incentive Conflicts in Reorganization: The Role of Bankruptcy Law”, *The Review of Financial Studies*, vol2, nº1: 109-23.

[19] Castelar, A., Cabral, C., 2001: “Credit Markets in Brazil: The Role of Judicial Enforcement and other Institutions”, Defusing Default: Incentives and Institutions pp: 157-188, The Johns Hopkins University Press.

[20] Castelar, A., 2003: “Judiciário, reforma e economia: A visão dos magistrados”, *Texto para Discussão nº 966*, IPEA.

[21] Cornelli, F., Felli, L., 1997: “Ex-ante efficiency of bankruptcy procedures”, *European Economic Review*, 41: 475-85.

[22] Djankov, S., Hart, O., Nenova, T. and Shleifer, A., 2003: “Efficiency in Bankruptcy”, working paper, Department of Economics, Harvard University, July 2003.

[23] Eberhart, A. C., Moore, W. and Roenfeld, R., 1990: “Security Pricing and Deviations from the Absolute Priority Rule in Bankruptcy Proceedings”, *The Journal of Finance*, vol 45, nº 5: 747-769.

[24] Franks, J. and Torous, W., 1989: “An Empirical Investigation of U.S. Firms in Reorganization”, *Journal of Finance*, 44, 747-769.

[25] Greenwood, J. and Jovanovic, B., 1990: “Financial Development, Growth and Income Distribution”, *Journal of Political Economy*, 98, 1076-1107.

[26] Hart, O., 1999: “Different Approaches to Bankruptcy”, working paper nº 1903.

[27] Hart, O., La Porta, R., Lopez-de-Silanes, F. and Moore, J., 1997: “A new bankruptcy procedure that uses multiple auctions”, *European Economic Review*, 41, 461-473.

[28] Hotchkiss, Edith S., Mooradian, Robert M., 1999: “Auctions in Bankruptcy”, *Journal of Corporate Finance*, 9: 555-74.

[29] Jackson, T. H., 1986: The Logic and Limits of Bankruptcy Law. Cambridge, MA: Harvard University Press.

[30] Jensen, M. C., 1991: “Corporate Control and Politics of Finance”, *Journal of Applied Corporate Finance*, vol. 4, nº 2: 13-33.

[31] Johnson, G. W. and Alonso, D., 2004: “Revitalizing Business Environments: Reexamining the Foundations of Trust” World Bank Document of Forum on Insolvency in Latin America 2004.

[32] King, R. G. and Levine, R., 1993: “Finance, Entrepreneurship and Growth: Theory and Evidence”, *Journal of Monetary Economics*, 32, 513-542.

[33] La Porta, R., Lopez-de-Silanes, F., Shleifer, A. and Vishny, R., 1998: “Law and Finance”, *Journal of Political Economy*, 106, 1113-1155.

[34] Levine, R., Norman, L. and Beck, T., 2000: “Financial Intermediation and Growth: Causality and Causes”, *Journal of Monetary Economics*, 46, 31-77.

[35] Levine, R., 2004: “Finance and Growth: Theory and Evidence”, NBER working paper 10766.

[36] Levine, R., Beck, T., 2003: “Legal Institutions and Financial Development”, NBER working paper 10126.

[37] LoPucki, L., 1983: “The Debtor in Full Control: Systems Failure under Chapter 11 of the Bankruptcy Code?”, *American Bankruptcy Law Journal*, 57, 99-126 (part I) and 247-273 (part II).

[38] LoPucki, L. and Whitford, W., 1990: "Bargaining over Equity's Share in the Bankruptcy Reorganization of Large, Publicly Held Companies", *University of Pennsylvania Law Review*, 139, 125-196.

[39] Mooradian, Robert M., 1994: "The Effect of Bankruptcy Protection on Investment: Chapter 11 as a Screening Device", *The Journal of Finance*, vol 49, nº 4: 1403-30.

[40] Povel, Paul, 1999: "Optimal "Soft" or "Tough" Bankruptcy Procedures", *Journal of Law, Economics and Organization*, 15: 659-84.

[41] Shleifer, A., Vishny, Robert W., 1992: "Liquidation Values and Debt Capacity: A Market Equilibrium Approach", *The Journal of Finance*, vol 47, nº 4: 1343-66.

[42] Schwartz, A., 1998: "A Contract Theory Approach to Business Bankruptcy", *The Yale Journal of Law*, vol. 107, nº 6: 1807-51.

[43] Schwartz, A., 1999: "Bankruptcy Contracting Reviewed", *The Yale Journal of Law*, vol. 109, nº 2: 343-64.

[44] Schwartz, A., 2002: "The Law and Economics Approach to Corporate Bankruptcy", Global Corporate Governance Forum, Research Network Meeting.

[45] Webb, D. 1991: "An economic evaluation of insolvency procedures in the United Kingdom: Does the 1986 Insolvency Act satisfy the creditors' bargain?", *Oxford Economic Papers*, 43, 139-157.

[46] White, M., 1994: "Corporate Bankruptcy as a Filtering Device: Chapter 11 Reorganization and Out-of-Court Debt Restructuring", *Journal of Law, Economics and Organization*, 10, 268-295.

Appendix A

Personal participation and comments of Aloisio Araújo[30] in Brazilian Bankruptcy Reform.

[30] I would like to thank Eduardo Engle the invitation to write this article and in special this appendix, relating my personal experience with the Brazilian bankruptcy reform. His patience and interest were particularly important in giving me the energy to write this paper such I hope will be useful for the much needed microeconomic reforms in Latin America.

Brazilian bankruptcy reform

History

The current Brazilian bankruptcy law is very old, dating from the forties. In 1993 the Executive send the draft of a new law, which was viewed with skepticism by specialists since it tried to save firms at all costs. In 2001 the president of the Central Bank, Arminio Fraga Neto, and the director of economic studies, Sergio Werlang, invited me to participate as a consultant in a group to study the new law from both the economic and juridical points of view.

The first decision of the group was to choose between going ahead for a new law, which would take an enormous amount of work both in terms of convincing and the intellectual effort of adapting the draft, taking into consideration economic incentives, or simply mending the current one by eliminating its main distortion. With arguments such as that the old law contained jargon and concepts that were already in the domain of courts all over Brazil, which were even more convincing since business bankruptcy is under state rather than federal domain, and also that the draft of the new law was so bad in terms of its economic impact. This position also enjoyed the support of important lawyers like the eminent Luis Bulhões Pedreira, who has a high reputation for having written in the sixties a corporate law which at the time was quite advanced in terms of economic reasoning. However, it was clear that Congress was going to pass a law which preserved firms, or no law at all. So, the decision was made (correctly, in my view) that a new law should be pursued, a difficult task taking in consideration that there was a strong anti-creditor political and juridical bias, in part due to the high real interest in the last few years, to the much higher returns on capital and to bad income distribution (which, although due to differences in education, is not perceived in this way).

With this decision in mind, the group in charge of the project, which involved many lawyers and economists as well as international consultants, kept working and bargaining with Congress and in particular with the staff of Congressman Biolchi, the author of the original draft and an important figure in the process

until the end. However, the old administration did not put the project to a vote, due to other priorities such as the independence of the Central Bank.

In the new government, Ilan Goldfajn and Henrique Meireles, the new director of economic studies and president of the Central Bank, respectively, invited me to remain as a consultant. Also, due to the positive influence of Marcos Lisboa[31], the project became high priority. The Lower House approved it at the end of 2003. It contained some very sound principles, such as strengthening the creditors' opinion on reorganization and eliminating some of the fiscal priorities in the selling of assets, as mentioned below. However, some very important elements were missing.

At that point many economists, executives and lawyers thought that it was better not to have a new law since this would create even more uncertainty for creditors than the old one. Fortunately, the Senate presented a much more positive prospective for the new law. I happen to be a teen-age friend of the influential Senator of the political opposition, Tasso Jereissati, who gave me full access to all the important Senators in the matter, including Lucia Vania, Ramis Tebet (the head of the economic commission of the Senate) and Aloisio Mercadante (the leader of the government in the Senate). I found a very positive environment for the discussion of an important law. The Senate withdrew the fiscal priority and limited the labor priority in liquidation. Also, at considerably high cost the Senate allowed for an extra-judicial procedure of the pre-packed type that exists in the United States. Many other improvements were made.

The challenge now is how the Judiciary is going to interpret the new law.

The previous situation and the main changes

- Introduction: The bad mechanics of credit.

Total credit was scarce: just 26% of GDP[32]. But even worse, banks had low priority in case of liquidation. Therefore, in the case of any bad signs as to the economic health of a firm, banks would reduce credit even

[31] Secretary of Treasury Ministry.
[32] Data from Brazilian Central Bank.

further since the recovery rate was so low[33]. So firms would finance themselves with a delay in paying taxes. Since tax authorities had the priority in case of liquidation that would scare banks even further, and so on. Credit would just collapse for many type of firms.

Banks do not have incentives to liquidate firms, even if they have no perspectives of recuperation. On the other hand, few firms are successful in recuperation. This is so due to the high priority of tax in liquidation, combined with the Brazilian tax structure, which relies too much on indirect taxes. The situation could have been better if corporate taxes were more important in the tax structure, since in this case firms would not accumulate such a big tax debt: firms in financial distress do not have profits. Hence, banks would not fear liquidation so much, increasing the banks' incentive and recovery in case of bankruptcy.

- The reasons for optimism

As described above, the credit market in Brazil was in total disorder. Certain changes seemed impossible at the beginning of the process five years ago. The modifications obtained will introduce incentive mechanisms that will enable the development of credit markets in Brazil. The main changes obtained were:

In liquidation:

- Limitation of labor credit

- Credit with collateral above tax credit

- Unsecured credit above some of the tax credit

- Firms will be sold first, preferably as a whole, and the constitution of the creditors' list will come later, which will speed the process and increase the value of the bankruptcy state.

- New credit given in the reorganization step will be given first priority in liquidation.

[33] See the data in the previous section.

In reorganization:

Inspired by Chapter 11 of the U.S Bankruptcy Code, here might be found some of the well-known problems, but it is certainly much better than the alternatives that try to save firms at all costs that were proposed initially in Brazil. Creditors will have to vote for the reorganization plan. The alternative of a new manager appointed by the judges was also rejected. A simplified version of it was adopted in Brazil, having some advantages in terms of the simplification of court procedure but missing some of the credit strength by making heterogeneous creditors vote together.

The adoption of extra-judicial procedure:

This is very important in Brazil since it saves the high court costs.

The elimination of the provision on tax-inheritance debt:

This almost eliminates any possibility of asset-selling for firms in distress, since the new owner would inherit all the labor and tax liabilities, even the hidden ones. This change will speed up the process of putting the capital of firms to new use, giving new incentives for mergers and acquisitions.

What ideas failed in the Brazilian experience?

When I first started working on the new law, I thought it a good idea to have a very simple procedure which would strengthen creditors' rights, save on court costs and at the same time avoid a possible bias on the part of the judges. This last point is very well documented in Castelar and Cabral (2003). One possibility was to follow the suggestions of Bebchuck (1988) and Hart (1997). Their idea is simply to give the firm in financial distress to the senior creditor and allow the more junior creditor to buy from the senior for the price of his creditor, and so on. Although ingenious, this idea received much opposition from lawyers and politicians in Brazil. Lawyers alleged that rights of the parties involved would not be fully preserved in the sense that the court does not have a prominent role. In general, the justice culture is against some summary resolution. At the political front the Congress had a bias in favor of the firms' owners. So I had to give it up. Another idea was to try to follow a law of the type in England, where the creditor has more power and there is no effort to save firms as a whole. This could be important in countries that are reluctant to close firms,

even those without sound economic prospects. However, the Brazilian Congress was in the mood to pass a law where the emphasis was on saving firms, and Chapter 11 fulfill this role, at least gives creditors a strong role in the process, although perhaps this is too complex for a poor country.

One problem with the Brazilian law is that it is the Judge who appoints the clerk in charge of liquidation, rather than the creditors.

Another problem is the solution found for tax liabilities under reorganization. As mentioned before, firms under distress in Brazil tend to have many tax liabilities. The solution that I proposed was for the government to organize an auction of the tax liabilities of firms that asked for reorganization. In this way the auction would attract many new specialists interested in reorganizing the firm. The owner would avoid having too many tax liabilities for the fear of losing the control of the firm. This solution was scrapped for fear that it might be unconstitutional. The solution adopted was to give an automatic re-organization of the tax debt in 8 years. This could give firms the incentive to keep accumulating tax debts and to ask for re-organization within five years. This could also be very bad for credit.

Policy Lessons

The Brazilian Case

What I learned from the Brazilian experience is first of all that the main distortions that I found are probably very specific to Brazil, at least I have never seen them mentioned in the international literature. The first distortion is the priority given to taxes over security credit. In a paper by Araujo & Lundberg (2003), it was shown that only five countries out of thirty-five share this unfortunate property. Actually this was an important argument in convincing the Senators to change the law at a moment where everything looked hopeless. The fact that the tax authorities were able to collect the insignificant amount of less than four million dollars in a recent year makes one wonder why there was so much fighting over this, although corruption could be an explanation. An equally distortional aspect of the old law was the labor and tax-inheritance provision. Again, when carefully explained by a neutral party, Congressmen understood the

economic argument and voted to create the right incentive, but this took time. Compared with this type of distortion, the usual debate about bankruptcy seems far less important. Countries, mainly the poor ones, create very distortional institutions, sometimes in the attempt to solve other distortions. In this example I think the distortions were created just to avoid tax evasion rather than to benefit any special group in particular.

Another lesson that I learned is that it is sensible to separate the law itself from the judiciary, although the two problems are to some extent related. For example, it is good to have a simpler - even if more imperfect - law in a less developed country. It is a big mistake to think the entire credit problem is due to the pro-debtor bias of the judiciary. I believe that the very low recovery rates and the very long time of liquidation, as shown in the World Bank data for Brazil[34], are in great part due to the lack of interest of creditors in a liquidation procedure from which they are not going to benefit anyhow. With the change in the priority in liquidation, the whole governance of liquidation is bound to change. However, the judiciary plays a very important role. For example, I have been giving talks to many audiences and many judges are considering not calling for liquidation even if creditors vote not to accept the plan to re-organize the firm, although the new Brazilian legislation## does not have the figure of the cram down[35] in chapter 11 of the American Code.

Relations with reforms in other Latin America countries

Although countries do obviously learn from each other, I think each country has its own distortions. Brazil, for example, is in the top 40% less corrupt but in the bottom 5% with respect to credit according to the World Bank. So, the reforms have to take into consideration what the country has already achieved. I think the reforms should be conducted, as in Brazil, by a multidisciplinary group of lawyers, judges and economists, mainly micro-economists who have an intuition of the incentives[36] of the several

[34] Figures 9 and 10 respectively.
[35] This is a procedure whereby reorganization can be adopted by the bankruptcy judge despite being voted down by one or more classes of creditors.
[36] Some of these are described in section III.1.

parties involved. The main goal should be a better system, since there is no agreement among economists about what constitutes an optimal bankruptcy.

Table A- Priority order in bankruptcy (35 countries)

Countries	Priorities			
	1	2	3	4
Australia	Secured Credit	Post-Bankruptcy Credit	Wages	
Austria	Secured Credit	Post-Bankruptcy Credit		
Belgium	Secured Credit	Post-Bankruptcy Credit	Tax and and Social Welfare claims	
Bermudes	Secured Credit	Wages and Assignments	Post-Bankruptcy Credit	Tax claims
Brazil	Labor claims	Tax Claims	Post-Bankruptcy Credit	Secured Credit
Bulgaria	Secured Credit	Post-Bankruptcy Credit		
Canada	Secured Credit	Post-Bankruptcy Credit	Wages (bounded)	Tax claims
China	Secured Credit	Post-Bankruptcy Credit	Labor claims	Tax claims
Czech Republic	Secured Credit	Post-Bankruptcy Credit	Labor claims	
Estonian	Post-Bankruptcy Credit	Secured Credit	Labor claims	Tax claims
Finland	Secured Credit	Post-Bankruptcy Credit		
France	Wages	Post-Bankruptcy Credit	Secured Credit	
Germany	Secured Credit	Post-Bankruptcy Credit		
Hong Kong	Post-Bankruptcy Credit	Secured Credit	Labor claims	Tax claims
Hungary	Post-Bankruptcy Credit	Secured Credit	Wages	Tax claims
Irland	Secured Credit	Tax Claims (bounded)	Labor claims	
Israel	Secured Credit	Post-Bankruptcy Credit	Labor claims (bounded)	Tax claims
Italy	Post-Bankruptcy Credit	Tax and Labor claims	Secured Credit	
Japan	Secured Credit	Post-Bankruptcy Credit	Labor claims	
Korea	Secured Credit	Post-Bankruptcy Credit		
Malasya	Secured Credit	Post-Bankruptcy Credit	Labor claims	Tax claims
Netherlands	Secured Credit	Post-Bankruptcy Credit	Tax claims	Labor claims
Poland	Tax claims	Post-Bankruptcy Credit	Secured Credit	
Portugal	Secured Credit	Labor Claims	Post-Bankruptcy Credit	Tax claims
Russia	Post-Bankruptcy Credit	Labor Claims	Secured Credit	Tax claims
Scotland	Secured Credit	Post-Bankruptcy Credit	Tax claims	Labor claims
Singapure	Secured Credit	Post-Bankruptcy Credit	Labor claims (bounded)	
Slovak Republic	Secured Credit	Post-Bankruptcy Credit		
Spain	Wages (last 30 days and maximum of 2 mimimum w ages)	Tax Claims	Secured Credit	
Sweden	Post-Bankruptcy Credit	Secured Credit	Tax claims	labor claims
Switzerland	Secured Credit	Post-Bankruptcy Credit	Labor claims (bounded)	
Tailand	Post-Bankruptcy Credit	Secured Credit	Labor claims	
UK	Secured Credit	Post-Bankruptcy Credit	Tax and and Social Welfare claims	Labor claims
United States	Secured Credit	Post-Bankruptcy Credit	Labor claims (bounded)	Tax claims
Vietnam	Post-Bankruptcy Credit	Secured Credit	Labor claims	Tax claims

Source: Araujo, A., Lundberg, E., 2003: "A Nova Lei de Falências: Uma Avaliação", *Workshop of Banking and Credit, Central Bank of Brazil*.

Appendix B

Table B- Data from countries

Country	creditor rights betw een [0,1]	rule of law betw een [0,1]	Days to enforce contracts	credit information registry	Goals of Insolvency betw een [0,100]	Private Credit/GDP 2000-02	% Interest Rate 2000-02
Algeria	0,25	0,33	407	0	45	0,08	3,25
Angola	0,75	0,50	1011	1	8	0,04	48,65
Argentina	0,25	0,25	520	1	43	0,20	12,43
Armenia	0,5	0,50	195	0	65	0,08	11,54
Australia	0,75	1,00	157	1	80	0,92	4,98
Austria	0,75	1,00	374	1	71	1,12	
Bangladesh	0,5	0,17	365	1	25	0,26	7,83
B&H	0,75	0,00	330	1	51	0,39	8,17
Belgium	0,5	0,67	112	1	93	0,91	5,11
Belarus	0,5	0,67	250	1	40	0,09	10,03
Benin	0,25	0,00	570	1	33	0,12	
Bolivia	0,5	0,50	591	1	53	0,53	11,05
Botsw ana	0,75	0,58	154	1	77	0,18	5,66
Brazil	0,25	0,25	566	1	24	0,36	43,73
Bulgaria	0,75	0,25	440	1	48	0,18	6,58
Burkina Faso	0,25	0,58	458	1	29	0,13	
Burundi	0,25	0,00	512	1	8	0,26	
Cameroon	0,25	0,33	585	1	44	0,09	13,00
Cambodia	0,5	0,00	401	0	25	0,07	13,74
Canada	0,25	1,00	346	1	93	0,83	3,38
Chad	0,25	0,00	526	1	11	0,04	13,00
Chile	0,5	0,83	305	1	19	0,73	3,96
China	0,5	0,75	241	1	51	1,29	3,33
Colombia	0	0,17	363	1	77	0,25	7,39
Congo	0,5	0,17	909	0	8		
Cote d'Ivory	0,25	0,42	525	1	44	0,15	
Costa Rica	0,25	0,67	550	1	43	0,27	14,96
Croatia	0,75	0,83	415	0	50	0,47	10,95
Czech Republic	0,75	0,83	300	1	22	0,37	4,05
Denmark	0,75	1,00	83	1	79	1,45	4,70
Dom Rep.	0,5	0,33	580	1	37	0,38	9,52
Ecuador	0,25	0,50	388	1	24	0,29	9,61
Egypt	0,25	0,67	410	1	39	0,61	4,46
El Salvador	0,75	0,42	275	1	42	0,05	
United Arab Emirates	0,5	0,67	614	1	23	0,60	
Ethiopia	0,75	0,83	420	0	75	0,29	4,55
Finland	0,25	1,00	240	1	99	0,59	3,33
France	0	0,75	75	1	43	0,93	3,60
Georgia	0,5	0,00	375	0	69	0,07	22,02
Germany	0,75	0,83	184	1	61	1,25	7,04
Ghana	0,25	0,33	200	1	17	0,12	
Greece	0,25	0,50	151	1	42	0,69	4,66
Guatemala	0,25	0,25	1459	1	40	0,20	9,95
Guinea	0,25	0,42	306	1	8	0,04	
Haiti	0,5	0,33	368	1	42	0,17	17,43
Hong Kong	1	0,75	211	1	63	1,53	4,66
Honduras	0,5	0,25	545	1	17	0,41	8,95
Hungary	0,5	0,67	365	1	38	0,36	2,76
India	0,75	0,67	425	0	21	0,31	
Indonesia	0,5	0,33	570	1	35	0,21	3,44
Iran	0,5	0,67	545	1	84	0,31	
Ireland	0,25	1,00	217	1	88	1,68	3,73
Israel	0,75	0,83	585	1	67	0,92	3,86
Italy	0,25	0,50	1390	1	46	0,82	4,34
Jamaica	0,5	0,17	202	0	63	0,19	9,93
Japan	0,5	0,83	60	1	93	1,06	1,83
Jordan	0,25	0,67	342	1	37	0,76	5,76
Kazakhstan	0,5	0,67	400	0	65	0,17	
Kenya	1	0,33	360	1	47	0,24	12,97
Korea	0,75	0,83	75	1	91	1,33	
Kuw ait	0,5	0,83	390	1	83	0,64	3,33
Kyrgyz Republic	0,75	0,00	492	0	61	0,04	18,90

Cont.

Lao PDR	0	0,00	443	1	14	0,08	23,33
Latvia	0,75	0,83	189	1	92	0,27	4,73
Lebanon	1	0,67	721	1	31	0,84	5,55
Lithuania	0,5	0,67	154	1	54	0,14	5,15
Macedonia, FYR	0,75	0,00	509	1	34	0,18	8,80
Madagascar	0,5	0,42	280	1	25	0,09	13,25
Malaw i	0,5	0,50	277	0	40	0,10	22,46
Malaysia	0,5	0,50	300	1	52	1,37	3,19
Mali	0,25	0,50	340	1	32	0,16	
Morrocco	0,25	0,83	240	1	36	0,55	8,58
Mexico	0	0,33	421	1	61	0,18	4,44
Moldova	0,5	0,83	280	0	49	0,14	9,32
Mozambique	0,5	0,50	580	1	25	0,08	8,72
Nepal	0,5	0,00	350	1	35	0,30	
Netherlands	0,75	1,00	48	1	95	1,48	1,19
Nicaragua	1	0,67	155	1	58	0,40	15,84
Nigeria	1	0,25	730	1	45	0,15	8,10
Niger	0,25	0,33	330	1	37	0,05	
Norw ay	0,5	1,00	87	1	99	0,95	2,08
New Zealand	1	1,00	50	1	90	1,18	4,48
Oman	0	0,83	455	0	29	0,38	5,66
Pakistan	0,25	0,50	395	1	63	0,28	
Panama	1	0,50	355	1	36	0,99	5,62
Paraguay	0,5	0,33	285	1	46	0,25	15,80
Peru	0	0,50	441	1	67	0,24	10,54
Philippines	0,25	0,33	380	1	38	0,39	4,53
Poland	0,5	0,67	1000	1	70	0,28	5,93
Portugal	0,25	0,83	320	1	66	1,50	
Romania	0	0,67	335	1	39	0,08	
Russia	0,5	0,67	330	0	58	0,17	10,75
Rw anda	0,25	0,00	395	1	8	0,11	
South Africa	0,75	0,42	277	1	53	1,26	4,98
Saudi Arabia	0,5	0,83	360	1	50	0,56	
Senegal	0,25	0,50	485	1	73	0,19	
Singapore	0,75	0,83	69	1	99	1,34	4,46
Sierra Leone	0,5	0,50	305	0	20	0,03	13,93
Slovak Republic	0,5	0,67	565	1	71	0,40	3,60
Slovenia	0,75	0,75	1003	1	41	0,22	4,93
Spain	0,5	0,75	169	1	68	1,12	1,81
Sri Lanka	0,5	0,50	440	1	35	0,29	3,95
Sw eden	0,25	1,00	208	1	84	1,44	
Sw itzerland	0,25	0,83	170	1	59	1,61	3,50
Syrian Arab Republic	0,75	0,83	672	0	37	0,09	5,00
Tanzania	0,5	0,83	242	0	65	0,05	13,15
Taiw an	0,25	0,67	210	1	68	0,98	
Thailand	0,75	0,42	390	1	62	1,02	4,90
Togo	0,5	0,50	535	1	8	0,15	
Tunisia	0	0,83	27	1	50	0,67	
Turkya	0,5	0,75	330	1	51	0,19	
Uganda	0,5	0,67	209	0	55	0,05	13,53
UK	1	1,00	288	1	86	1,40	
Ukraine	0,5	0,67	269	0	42	0,14	17,42
Uruguay	0,75	0,42	620	1	67	0,54	
USA	0,25	0,83	250	1	88	2,35	
Venezuela	0,5	0,17	445	1	67	0,11	7,58
Vietnan	0	0,67	404	1	33	0,42	2,61
Yemen	0	0,33	360	1	47	0,08	4,71
Zimbabue	1	0,08	350	0	52	0,31	18,10