Bankruptcy Law: a Mechanism of Governance for Financially Distressed Firms

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Abstract[4]

This paper explores the various governance models for financially distressed firms. We offer a new typology of major bankruptcy models and provide a connection between this bankruptcy law puzzle and the variables depicting the governance of healthy firms in order to shed light on two topics: (1) the factors that the lawyer should consider before removing its national bankruptcy law, and (2) the risks associated with each bankruptcy model according to the economic literature on bankruptcy law. Our final aim is to test whether the various bankruptcy models detailed in the paper perform in separate economic and legal environments.

J.E.L classification: K29

Keywords: Bankruptcy, Governance, Law and Economics.

1.Introduction

Since the corporate bankruptcy law affects both the resolution of financial distress and the incentives of stakeholders of healthy firms, whether a corporate bankruptcy regime is economically efficient depends on its capacity to achieve two themes. First, a bankruptcy regime achieves *ex ante* efficiency if it creates good incentives for both investors and debtors. For instance, bankruptcy law affects entrepreneurs' incentives to take risk and the terms on which banks will lend. Second, the legal system, which provides the framework in which bankruptcies are resolved, achieves *ex post* efficiency when only economically efficient but financially distressed firms are saved. When an economically inefficient firm becomes bankrupt, the best outcome is then for its assets to be liquidated, thereby releasing its capital to move to higher value use. In practice, it is difficult to determine with certainty which category a firm falls into. Some economically inefficient failing firms (which should have been liquidated) mistakenly may be categorized as efficient and allowed to reorganize (type-I

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[4] The authors thank, for their comments and advices, Julien Penin, Claude Fluet, and all participants of the workshop on bankruptcy law, EconomiX, Paris X University, 2007.

errors). Conversely, type-II errors occur when some economically efficient but failing firms may liquidate in bankruptcy, either because no reorganization procedure exists or because a procedure exists but some efficient firms are mistakenly categorized as inefficient. Recent analysis in Law and Finance suggest that it is impossible to determine which bankruptcy model, either pro debtor or pro secured creditors, is more economically efficient. Indeed, pro secured creditors (resp. pro debtors) are more likely to generate type II (resp. type I) errors. Further, under a tough bankruptcy regime which favors liquidation, managers have an incentive to make greater efforts to maximize the firm's value, so that the number of distressed firms tends to be lower (Aghion, Hart and Moore (1992)). At the opposite, the same managers alternatively may hide their financial distress in order to avoid filing for a tough bankruptcy procedure (Li and Li (1999), Povel (1999)). Both rival bankruptcy systems have also an impact on banks' strategies such as credit rationing or the incentives to monitor the firm. *A priori*, a pro debtor bankruptcy model would exacerbate credit rationing (Myers (1977)) whereas it would create stronger incentives to monitor the firm (Zazzaro (2005)). However, La Porta, Lopez-de-Silanes, Shleifer and Vishny ((1998), we note LLSV hereafter) find that investors friendly bankruptcy laws, by controlling for the quality of law enforcement, are desirable to promote the development of financial markets. Since common law countries offer a better protection to secured creditors and shareholders than civil law countries, common law countries have more developed financial markets and a property of the capital more dispersed. Common law countries consequently would provide larger resources for economic growth. In other words, the distinction between market or bank-based systems is minor relative to the differences in legal traditions to explore the determinants of economic growth (Levine (2002), Beck and Levine (2004)). In addition, Ergungor (2004) explains that civil law systems are more bank based than common law countries because banks would emerge due to the civil law courts' greater inefficiency to resolve conflicts between firms and investors. Contrary to the preceding authors, he considers that legal families differ not only in investors' legal rights but also in the judges' rights relative to the flexibility in interpreting the law and creating new rules.

In this paper, we focus on legal bankruptcy rules to provide a new benchmark for discussions of the diversity of bankruptcy laws across countries[5]. We show that the classical opposition between the pro secured creditors model and the pro debtor model does not reflect the heterogeneity of governance models of financially distressed firms[6]. To fill this gap, we originally classify the main legal bankruptcy rules across a sample of developed and developing countries[7] to shed light on differences in the legal ways to resolve corporate financial distress. Contrary to the classical approach in law and finance, we do not test whether one of the proposed bankruptcy models is superior to another one to promote financial development, or to improve *ex ante*/*ex post* efficiency of the bankruptcy process for two reasons. First, LLSV (1997, 1998, 2000) provided empirical evidence that equity markets and banks develop better in countries within which the rights of investors are well protected.

[5] We overlook in this paper all the procedures outside the law, which may constitute performing ways to resolve financial distress.

[6] The classical opposition between pro secured creditors model and pro debtor models is well suited to introduce bankruptcy law in economic/financial models. For instance, the levels of type1/type 2 errors (which depends on the type of bankruptcy law: either debtor or creditor friendly) have an impact on the amounts that creditors effectively size from borrowers. This constraint determines investors' incentives to monitor the firm (Zazzaro, (2005)).

[7] List of countries: Peru - Columbia – Mexico - Philippines - France – Brazil - Greece - Argentina - Portugal – Australia- Ireland - Canada - United States - Finland - Switzerland - Chile – Italia - Netherlands – Norway- Turkey – Sweden - Great Britain - India – Kenya – Egypt - Pakistan - Malaysia – Ecuador - Israel - Zimbabwe – Thailand - Germany - Austria – Denmark - Belgium – Spain – Japan – Uruguay - New Zealand.

Second, we do not have any proxy for *ex post* efficiency of bankruptcy law[8]. Our aim is to provide a connection between our bankruptcy law puzzle and the variables depicting the governance of healthy firms in order to shed light on (1) the factors that the lawyer should consider before removing its national bankruptcy law, and (2) the risks associated with each bankruptcy model according to the economic literature on bankruptcy law[9]. In other words, we test whether the various bankruptcy models detailed in the paper perform in separate economic and legal environments. For instance, do the most creditors friendly bankruptcy models perform in countries with a larger banking sector? Does there exist a particular bankruptcy model for developing countries? Do the differences in legal families may explain the bankruptcy puzzle? Are the legal rules, which drive the way that firms go out of the market, associated with specific legal barriers on creation of new firms? Finally, do bankruptcy laws protecting workers through deviations from absolute priority rule vary across countries according to the legal rigidity of the employment market?

Below, Section 2 sets out the bankruptcy puzzle or the classification of bankruptcy models across countries. Section 3 examines the economic, legal environment in which the various bankruptcy models perform. Section 4 presents our conclusions.

2. The puzzle of bankruptcy law models

We agree with a large number of lawyers and economists that the bankruptcy rules which are the more likely to affect the resolution of financial distress and the stakeholders' behaviour prior bankruptcy are 1) the automatic stay on creditors' claims during the reorganization process, 2) the absolute priority rule between claimants, and 3) the possibility that an official appointed by the court or by the creditors becomes responsible for the firm's operations during reorganization[10]. We consequently look at this set of bankruptcy rules gathered by the World Bank to describe the various performing bankruptcy models. We also consider that the most discriminating legal rule is the automatic stay on creditors' claims because it makes the fundamental distinction between the systems which favor continuation of the firm and the ones which favor liquidations (or at least immediate liquidations). Indeed, if the law does not prevent secured creditors to exert their securities, the manager has no (or very few) chance to reorganize. The second concern of the law is the distribution of reorganization/liquidation proceeds among claimants. Especially, when the law does not order

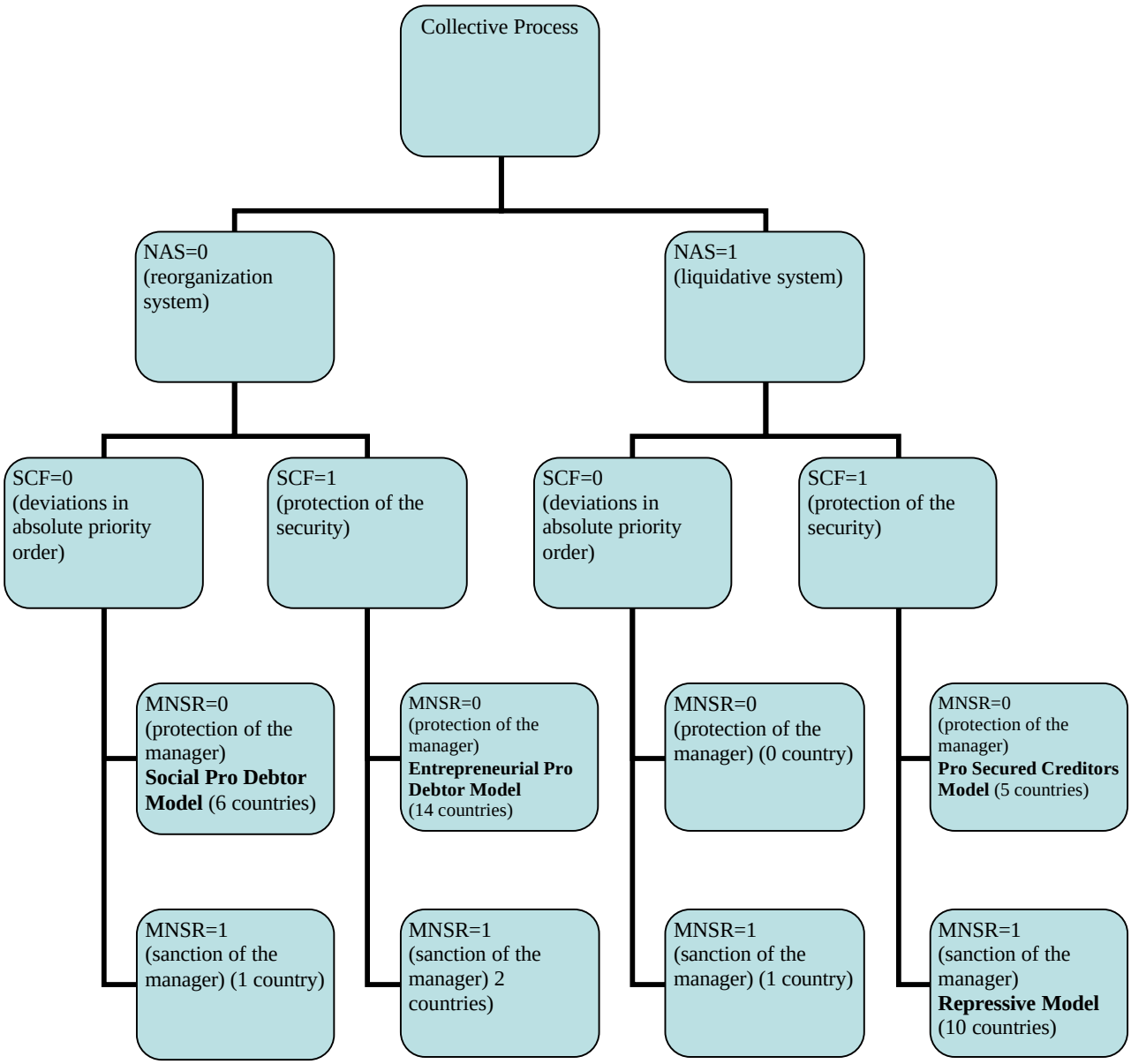
[8] World Bank gathered cross countries data on recovery rates, time spent during the reorganization process, and bankruptcy costs. However, these variables can not serve as proxy for differences in courts' selection errors (typeI/typeII) between countries.

[9] Our comparative criteria are the rules which govern the labour market and the legislation dealing with the creation of new firms, by controlling for the legal tradition and the size of both equity and debt markets (these variables indicate whether firms are financed through either the stock market or the banks (banks are assumed to be secured creditors)).

[10] In previous studies, legal bankruptcy rules are summing up to build an indicator of secured creditors' legal protection. Further, contrary to LLSV (1997) for their indicator of legal protection of secured creditors, we exclude from the analysis the rule that allows secured creditors to oppose to the continuation plan for three reasons. First, according to the economic literature on our topic, economic theory gives little importance to this rule in the study of the determinants of *ex post* and *ex ante* efficiencies of bankruptcy law. Second, in a system which promotes liquidation of financially distressed firms (no automatic stay on creditors' claims, respect of the absolute priority order), the weight of secured creditors in the reorganization process has minor importance in comparison to governance models which favor continuation. Third, secured creditors, such as banks, are more interested in the defence of the classical debt contract, or in the respect of their payments in case of default rather than in their veto power relative to the adoption of a continuation plan. We also notice that Ergungor (2004) considers only these three legal rules in its demonstration of the emergence of banks, based on differences in legal traditions.

an automatic stay on creditors' claims, bankruptcy law respects the absolute priority rule in a large majority of countries (liquidation tends to be more creditors friendly). At the opposite, once the law prevents secured creditors from gaining possession of their security, we find empirical evidence that the law may either facilitate raising secured creditors' recovery rates, or rank first unsecured claimants in the distribution of proceeds. Finally, we take into account the place of the manager during the reorganization process in order to oppose two visions of bankruptcy law. There is an old one which removes the bankrupt manager and a modern one which relies more heavily on debtors-in-place, by reducing the risks supported by managers. From this ordering of legal rules, we set out in graph 1 eight combinations (we exclude combinations which perform in less than two countries[11]). As such, below, we look only at four combinations of bankruptcy rules:[12] the Social Pro Debtor Model, the Entrepreneurial Pro Debtor Model, the Repressive Model and the Pro Secured Creditors Model.

[11] This is the case for (0,0,1) Greece, (0,1,1) Japan and Uruguay, (1,0,0) no country and (1,0,1) New Zealand.
[12] Combinations are (0,0,0), (0,1,0), (1,1,1) and (1,1,0).



Graph 1: classification of bankruptcy legal rules

Data description: NAS means no automatic stay on secured claims. The variable equals one if bankruptcy code does not allow for an automatic stay on secured creditors' claims. SCF means secured creditors first. It equals one if bankruptcy law enforces the absolute priority rule, *i.e.* secured creditors are paid first before the State or workers. Finally, MNSR means that the manager does not stay at the head of the firm during the reorganization process. It equals one if the manager does not keep the administration of firm's property during the collective procedure.

Models	NAS	SCF	MNSR	Countries
Social Pro Debtor Model	0	0	0	Peru - Columbia – Mexico Philippines – France - Brazil
Entrepreneurial Pro Debtor Model	0	1	0	Argentina - Portugal - Australia Ireland - Canada - United States Finland - Switzerland - Chile - Italia Netherlands – Norway- Turkey – Sweden
Repressive Model	1	1	1	Great Britain - India – Kenya – Egypt Pakistan -Malaysia - Ecuador Israel - Zimbabwe - Thailand
Pro Secured Creditors Model	1	1	0	Germany - Austria – Denmark Belgium – Spain

Table 1: puzzle of bankruptcy models

2.1 The social pro debtor model

The first bankruptcy model integrates an automatic stay on creditors' claims, authorizes the manager to stay ahead of the firm during reorganization, and the privileged creditors' claims (State or workers) have priority over secured creditors. This model favors firm's continuation and protects the interests of workers. It may result from the essential place of the manager to maintain the firm as a going concern (especially for small and medium business), from the desire to preserve employment, or from the necessity to induce managers to reveal financial distress earlier (Li and Li, (1999), Povel, (1999)). Since creditors cannot exert their security and the absolute priority rule is seldom respected, some credit rationing may also appear (Franks, Nyborg and Torous (1996)). At the same time, once the bank is fully secured, it has less incentive to monitor and restructure the distressed firm (Manove, Padilla and Pagano (2000)). Secured banks may also behave opportunistically towards junior creditors by increasing the value of their own loans at the other creditors' expense (Franks and Sussman (2002)). Finally, the automatic stay avoids creditors' race to be first to recover their debts at the time of bankruptcy (Baird (1986)).

2.2 The entrepreneurial pro debtor model

In the social pro debtor model, the legislator wants to protect workers from the financial distress even if it reduces the proceeds for secured creditors. The second model differs in the respect of the absolute priority rule. Indeed, an automatic stay on creditors' claims exists and the manager has substantial rights to run firm's operations while a reorganization plan is being constructed. So, there is a way, in practice, to promote continuation of bankrupt firms without giving priority to workers on the firm's assets[13]. A repercussion of such a debtor friendly system may be that borrowers strategically file for bankruptcy in order to renegotiate their debt and labour contracts.

2.3 The repressive model

In the repressive model, the sanction of the financially distressed debtor prevails. Beyond the protection of secured creditors' rights (see the absolute of priority rule and the stay on creditors' claims), the debtor is not responsible for the operation of business during the bankruptcy process. From theory of incentives, managers are then attempted to expand greater efforts to increase the expected value of the firm (Aghion, Hart and Moore (1992)). We also argue that managers will choose investments which rely heavily on their skills (managerial entrenchment, Bebchuck and Picker (1996)). Finally, this model may generate *ex post* problems of coordination between creditors since there is no automatic stay on their claims. Such a race may lead to the firm's assets sale at a low price, with a consequent loss of value for all creditors.

2.4 The pro secured creditors model

The last model protects also the interests of secured creditors. No automatic stay on creditors' claims exists and the absolute priority rule is enforced. Only the attitude toward the debtor differs as the latter keeps the firm's administration. On could argue that the protection of debtors during the reorganization process results either from the low size of companies, or

[13] However, there may exist deviations of priority in favour of shareholders (here, the index concerns only workers and the State). The US bankruptcy process illustrates this paradox as one records deviations of priority in favour of the minority shareholders (Weiss (1990), Franks and Torous (1989)).

from the support granted to them by creditors. However, the secured creditors' superior bargaining power relative to debtors may also prevent borrowers to continue their operations without creditors' consent.

Such a classification demonstrates that many differences exist in the rules that govern bankrupt firms and in the objectives of national bankruptcy codes. In this area of comparative law, a further key question is how to explain these differences. In our mind, bankruptcy law has an impact on stakeholders' strategies but the law may also result from the weight of the various stakeholders as well. Indeed, banks and equity markets are more developed in countries with the greater legal protection of investors (LLSV, (1997)). One could alternatively argue that the main source of financing influences the design of bankruptcy laws. For instance, bankruptcy laws are expected to be creditors friendly in bank based countries. Moreover, the differences in bankruptcy models may also reflect either the collective preferences on the legal protection of workers through continuation-oriented bankruptcy systems, or the differences in legal origins. In the next section, we evaluate this correspondence between our puzzle of bankruptcy models and other institutional components which influence the firm's operations.

3. In which environment does bankruptcy law perform?

Below, we empirically study the links between bankruptcy law, legal sector (both legal origin and quality of law enforcement), financial sector (size and structure), legal rigidity of labour market, and rules which drive the creation of new firms. To measure the correspondence between the bankruptcy models detailed in section 2 and this set of variables, we compute for each variable the average score of bankruptcy models and the ANOVA test. We run the same methodology as LLSV (1998) when they test common law versus civil law countries average scores for their measures of investors' legal protection and quality of law enforcement. However, since we do not compare two groups (as the two rival legal origins in LLSV (1998)), but test for equality of means among three or more groups (here, four bankruptcy models), we use ANOVA tests[14].

3.1 Bankruptcy law, GDP per capita and legal environment

Table 2 presents the results of equality of means tests for Gross Domestic Product, size of the unofficial economy, and legal environment by bankruptcy model. In each country, we consider for year 2000 the logarithmic of per capita Gross Domestic Product (in US dollars) and the size of the unofficial economy as a percentage of GDP[15]. To evaluate the quality of law enforcement, we use the set of proxies employed by LLSV (1998): efficiency of the judicial system, rule of law, corruption and risk of expropriation. A detailed definition of these variables can be found in annex 1.

[14] In other words, the two-group case (relegated to the t-Statistics test) is a special case of the ANOVA (Fisher-test). For each set of variables below, we run the same methodology and report values of Fisher Statistics. Further, averages that differ significantly at the 1%, 5%, and 10% levels in the Fisher Statistic are respectively denoted with ***,**, and *.

[15] Source: for both variables, we use the Financial Structure and Economic Development Database (see World Bank website).

	GDP per capita	Unofficial economy	Efficiency of Judicial System	Rule of law	Risk of Expropriation	Corruption
Test of means between bankruptcy models (Fisher Statistics)	6.78***	6.15***	2.26*	10.69***	7.36***	5.62***
Social pro debtor model average	3998.18	37.93	6.41	4.66	7.04	5.46
Entrepreneurial pro debtor model average	12419.27	18.68	8.39	8.74	9.01	8.26
Repressive model average	2961.63	34.13	7.12	5.36	7.11	5.68
Pro secured creditors model average	13708.18	18.1	8.85	9.40	9.68	8.74
Sample average	**8457.6**	**26.31**	**7.76**	**7.17**	**8.23**	**7.11**

Table 2: bankruptcy law, economic performance, unofficial economy and quality of law enforcement.
Note: *** means significant at the 1 percent level, ** means significant at the 5 percent level, * means significant at the 10 percent level.

We find empirical evidence that the GDP per capita, the size of the unofficial economy and the quality of law enforcement oppose two groups of bankruptcy models. Countries with strong quality of law enforcement (or richer countries because these countries have higher quality of law enforcement) are associated with either the entrepreneurial pro debtor model or the pro secured creditors model. At the opposite, in developing countries, the social pro debtor model and the repressive model prevail. As such, the old vision of bankruptcy law, the sanction of the bankrupt manager, continues to operate in the less performing countries. Moreover, the pro debtor bankruptcy model, which allows for unsecured creditors (such as workers or government) to be ranked before secured creditors during the reorganization procedure, performs also in countries with poor legal enforcement and per capita GDP. In addition, it appears from table 3 that German civil legal tradition is clearly associated with the pro secured creditors model whereas French civil legal origin is associated with more pro debtor bankruptcy laws, especially the social pro debtor model. Further, there are two major bankruptcy models within the common law legal tradition: the entrepreneurial pro debtor model and the repressive one. So, according to the empirical links between legal family, quality of law enforcement, and per capita GDP, one could argue that richer common law countries aim to promote the bankrupt firm's continuation (the learning effect and the new chance for managers), through the entrepreneurial pro debtor model[16]. Finally, since common law countries have the greater score for the repressive model, one concludes also that poorer countries with common law legal tradition (with poor quality of law enforcement and per capita GDP) are the most likely to have a repressive model of all the legal families.

To summarize, the evidence indicates that the bankruptcy puzzle is not only the consequence of differences in the level of development, or in the quality of law enforcement. Bankruptcy models may also differ between countries because they come from different legal families[17]. In a dynamic context, legal origins may then constitute a barrier for countries to remove their bankruptcy model[18]. Looking for making bankruptcy models endogenous, we could also suggest with Biais and Recasens (2002) that bankruptcy law is designed by the

[16] We note that the social pro debtor model does not perform in common law countries.
[17] Following LLSV (1998), the legal family can be treated as an exogenous variable because countries typically adopted their legal systems involuntarily (through conquest or colonization).
[18] We do not explore the dynamic evolution of bankruptcy models. For instance, we may represent bankruptcy law (and labour law) as the result of a legal competition between countries in a context of capital and labour force mobility. A crucial question would be whether developed countries will move toward a particular bankruptcy model.

political parties which have a majority of votes in parliament, and indirectly, therefore, by the pivotal voters in that country. For example, pro creditors laws might emerge in countries where the pivotal voters are potentially entrepreneurial with greater needs of financing through banking sector. In contrast, if governments represent low-income voters, with poor access to credit, a pro debtor law might emerge; its aim being to protect workers by maintaining distressed firms as a going concern. More generally, the nature of bankruptcy codes could also be linked to the relative weight of various stakeholders. We test this assumption in the next paragraph.

	UK common law legal origin	French civil law legal origin	German civil law legal origin
Test of means between bankruptcy models (Fisher Statistics)	6.75***	3.91**	3.36**
Social pro debtor model average	0	1	0
Entrepreneurial pro debtor model average	0.285	0.428	0.071
Repressive model average	0.8	0.2	0
Pro secured creditors model average	0	0.4	0.4
Sample average	**0.342**	**0.457**	**0.085**

Table 3: bankruptcy law and legal tradition.

Note: *** means significant at the 1 percent level, ** means significant at the 5 percent level,* means significant at the 10 percent level.

3.2 Bankruptcy law, size and structure of financial sector

Our main question here is whether our bankruptcy models actually differ according to the size and the structure of the two main sources of financing: debt and equity. To address this question, we use two empirical measures of financial sector: its level of development and its structure (i.e. whether countries have bank or market oriented financial sector). For the first topic, we use for year 2000 the domestic credit provided by banking sector as a share of GDP[19], the value of the stock market capitalization, and the stocks value traded. The idea is that financial development depends both on the listing of shares per se and from the liquidity of the stock market. For the second topic, we use three measures of financial structure developed by Levine (2002), and gathered over the 1980-95 period. First, "structure activity" is a measure of the activity of stock markets relative to that of banks. It equals the logarithm of the value of domestic equities traded on domestic exchanges (as a share of GDP) divided by the value of deposit money bank credits to the private sector (as a share of GDP[20]). Second, "structure size" measures the size of stock markets relative to that of banks. Here, it equals the logarithm of the value of domestic equities listed on domestic exchanges (as a share of GDP) divided again by the value of deposit money bank credits to the private sector (as a share of GDP). Third, we report "structure efficiency", a measure of the efficiency of stock markets relative to that of banks. It equals the logarithm of the value of domestic equities traded on domestic exchanges (as a share of GDP) times overhead costs of banking

[19] Source: 2002 World Development Indicators on CD-ROM. New York: World Bank

[20] This measure excludes credits to the public sector (central and local governments as well as public enterprises)

sector[21]. For each indicator, larger values of indicators imply a more market-based financial system[22].

	Bank credit	Total value traded	Market capitalization
Test of means between bankruptcy models (Fisher Statistics)	2.65*	0.40	0.80
Social pro debtor model average	0.259	0.044	0.133
Entrepreneurial pro debtor model average	0.535	0.168	0.307
Repressive model average	0.352	0.124	0.3
Pro secured creditors model average	0.703	0.096	0.159
Sample average	**0.445**	**0.126**	**0.26**

Table 4: bankruptcy law and financial development.

Note: *** means significant at the 1 percent level, ** means significant at the 5 percent level,*** means significant at the 10 percent level.

	Structure activity	Structure size	Structure efficiency
Test of means between bankruptcy models (Fisher Statistics)	0.55	2.22*	0.43
Social pro debtor model average	-1.684	-0.45	-6.029
Entrepreneurial pro debtor model average	-1.613	-0.686	-6.048
Repressive model average	-2.009	-0.461	-6.745
Pro secured creditors model average	-2.234	-1.252	-6.269
Sample average	**-1.827**	**-0.662**	**-6.275**

Table 5: bankruptcy law and structure of financial sector.

Note: *** means significant at the 1 percent level, ** means significant at the 5 percent level,* means significant at the 10 percent level.

The study of tables 4 and 5 reveals that the indicators of financial structure based on activity and efficiency do not empirically discriminate between the different bankruptcy models detailed in section 2. For instance, the entrepreneurial pro debtor model is not specifically associated with the economies characterized by an equity-bond market more efficient and active. Further, it is impossible to use either the total value traded or the market capitalization to acknowledge the diversity of bankruptcy models. We argue only that bank based countries (see the bank credit ratio and the indicator of structure size in tables 4 and 5)

[21] To measure the efficiency of stock markets, Levine (2002) uses, as in the first indicator, the value of domestic equities traded, which reflects the liquidity of the stock markets. Then, we assume that larger overhead costs are associated to larger inefficiencies in the banking sector.

[22] There is a large discussion about the limits of these indicators of financial structure (Demirguc-Kunt and Levine (1999)). For example, financial structure measures dealing with activity, size or efficiency may be large either because the country has well-developed markets (the United States) or because it has very poorly developed banks (Brazil, Mexico). Similarly, a country may have small financial structure indicators either because its banks are comparatively well-developed or because its markets are relatively undeveloped. However, contrary to Levine (2002), we do not attempt to evaluate for the impact of the financial structure on economic growth. We test the correspondence between the bankruptcy models and the measures of financial sector. So, even if the low value of an indicator is due to the undevelopment of stock market or to the relative excessive development of the banking sector, it gives us some information about the relative weight of both financial sectors. Taking into account these limits, we have to combine two oppositions: the classification bank based or market based and the distinction between well developed financial sectors and developing ones.

are more frequently associated with the pro secured creditors model. As such, the bankruptcy model gives stronger rights to secured creditors (not to shareholders) according to their relative size (not their efficiency or their activity) in the financial structure of countries. The resulting risk is that secured creditors adopt an opportunistic behaviour or generate type I errors during firms' reorganizations. One could alternatively argue that it is efficient to allow for the main investor to dominate the bankruptcy process in order to reduce credit rationing.

3.3 Bankruptcy law, labour market and regulation of market entry of new firms

In this section, our starting point is the hypothesis that the reorganization/liquidation legal process (or, equivalently the legal barriers to market exit) may be linked to two other areas of the law. First, we explore the legal rules dealing with the creation of new firms because the creation rate of new firms, in addition to the conjonctural effects, clearly affects the corporate bankruptcy rate. Second, the legal protection of workers may serve to understand why some bankruptcy models promote continuation of firm's operations, or allow for deviations from absolute priority rule in favour of workers. To identify the legislation dealing with creation of new firms, we use an indicator including all procedures required to launch a firm, the average time spent during each procedure, and the official cost of each procedure (Botero, Djankov, La Porta, Lopez-de-Silanes, (2004)). Further, to measure the flexibility of labour regulations, we use a rigidity employment index issued by World Bank in its doing business reports. It is the average of three data: the difficulty of hiring a new worker, the restrictions on expanding or contracting the number of working hours, and the difficulty and expense of dismissing a redundant worker. In both cases, higher values of indicators mean more rigid regulations.

	Employment rigidity index	Procedures required to create a firm	Time spent during each procedure to create a firm	Cost of each procedure to create a firm
Test of means between bankruptcy models (Fisher Statistics)	3.07**	3.35**	2.51*	1.66
Social pro debtor model average	59.5	11.17	68.17	18.8
Entrepreneurial pro debtor model average	33.07	6.28	19.78	8.74
Repressive model average	34.7	9.9	50.6	59.22
Pro secured creditors model average	40.2	6.6	44	7.94
Sample average	**39.08**	**8.2**	**40.34**	**24.77**

Table 6: bankruptcy law, legal protection of workers, and regulation of creation of new firms.
Note: *** means significant at the 1 percent level, ** means significant at the 5 percent level,* means significant at the 10 percent level.

The results in table 6 suggest that the social pro debtor model performs in countries within which the legal barriers to market entry and the legal protection of workers are the more severe. All the legal rules, by favouring the protection of workers, consequently reflect some homogeneity. Strong barriers to market entry, by reducing the default risk, protect then workers from the risk to lose their jobs due to firms' bankruptcies. For the entrepreneurial pro debtor model, all legal measures enforce the firm's continuation as a going concern with the same manager, the flexibility on labour market making this project easier within a legal

institution which encourages the creation of new firms[23] (learning effect). At the opposite, the repressive model (and the pro secured creditors model at a lower level), with large barriers at the market entry for emerging firms, improves the exit of failing companies by protecting the interests of secured creditors. *A priori*, this model aims to reduce the default risk.

4. Conclusion

In this paper, we study an unexplored territory in the area of comparative bankruptcy law: the correspondence between bankruptcy law and the overall system of firm's governance. We confirm that the classical opposition between pro debtors and pro secured creditors models does not capture all the diversity of the national legislations. We then propose an original typology of bankruptcy models and discuss the expected costs and risks associated with each model. The problem is that the lack of data prevents us from empirically evaluating the *ex ante*/*ex post* efficiency of bankruptcy systems. However, the evidence provided in the paper supports five results on the manner that bankruptcy systems are matching with other areas of firm's governance[24]. First, the repressive model and the legal protection of bankrupt debtors prevail in developing countries. Second, the differences in bankruptcy models across countries reflect also differences in some exogenous conditions, especially the legal tradition. Our results contest the recurrent tension between common law and civil law about the protection of investors. Whereas German civil law countries better protect the secured creditors, Common law countries (controlling for higher levels of GDP per capita and quality of law enforcement) and French civil law countries exhibit both pro debtor models even if their objective differs. Third, we find that countries, whose financial system is bank based, are more frequently associated with secured creditors' friendly bankruptcy models. Fourth, we suggest that bankruptcy law and labour law are well matched either to protect the creditor's interest, or to ensure the continuation of financially distressed firms. Fifth, there exists an entrepreneurial institutional structure within which a pro debtor bankruptcy system is associated with poor legal barriers on the creation of new firms. However, it is less clear that the pro secured creditors model is associated with larger barriers to market entry for emerging firms. This result stands for the repressive model.

Annexes

Annex 1: description of proxies for law enforcement

Variables	Description (Source: LLSV (1998))
Efficiency of Judicial System	"Assessment of the efficiency and integrity of the legal environment as it affects business, particularly foreign firms produced by the country risk rating agency Business International Corp. Average between 1980 and 1983. Scale from zero to 10; with lower scores, lower efficiency levels."
Rule of Law	"Assessment of the law and order tradition in the country produced by the country risk agency International Country Risk. Average of the months of April and October of the monthly index between 1982 and 1995. Scale from zero 10,; with lower scores for less tradition for law and order."
Corruption	"International Country risk's assessment of the corruption in government. Average of the months of April and October of the monthly index between 1982 and 1995. Scale from zero to 10, with lower scores for higher levels of corruption."
Risk of Expropriation	"International Country risk's assessment of the risk of outright confiscation or forced nationalization. Average of the months of April and October of the monthly index between 1982 and 1995. Scale from zero to 10, with lower scores for higher risks."

[23] The costs associated with the procedures required to create a new firm are not significant.

[24] These assertions are confirmed using several data sets issued from the Financial Structure and Economic Development Database of the World Bank and the financial data developed by Levine (2002).

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