Resource allocation and
Contract Resolution in the Spanish Bankruptcy System

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1. Introduction

In this study we analyze the factors which, once a bankruptcy procedure begins in Spain, explain the results observed after the re-negotiation of the contracts between the debtor and the creditors, in a similar manner to that carried out in other countries (Casey et al., 1986, and Campbell, 1996 in The United States; Kim and Kim, 1999, in Korea). The *outcomes of the bankruptcy system* (restructuring, the abandoning of the bankruptcy situation (dismissal) and liquidation) are related to with variables which capture the economic quality of the firm (like, for example, the internal generated resources). The evidence obtained suggests that the processes of reassignment are not simply the result of chance, but rather that they result from a decision-making process where information which is also contained in the financial statements is taken into account.

Additionally, we connect to the corporate finance approach to contracts (Smith and Warner, 1979; Aghion and Bolton, 1992) as a guide for analyzing the restructuring agreements agreed upon between the debtor and the *non-privileged* (also called *ordinary*) creditors. The results indicate that, in the cases of debt restructuring, the *non-privileged* creditors renounce a very significant part of the value of the debt. On the other hand, we have observed the existence of a positive relationship between the economic quality of the firm and the collection expectations by the creditors: the debtor must promise greater future payments the less deteriorated the company finds itself to be in. Finally, the possibility that the creditors exercise *ex post* control over the managers is not foreseen, neither are changes in the management of the company. This fact, joined to the absence of other effective ways of control in the Spanish Small and Medium Sized Businesses (there is no room in them for what has come to be called *market for corporate control*), gives rise to the managers/ owners suffering little penalization for badly running their companies.

This article continues with a description of the bankruptcy legislation in effect. Subsequently, after explaining our approach to the problem, the empirical results will be shown: first studying the factors which influence in the negotiation over how to *reassign* the resources (continuity/liquidation, dismissal from the bankruptcy system) and then going on to analyze in a detailed way the manner in which contracts are *completed* in the cases of restructuring. This paper ends with a Conclusions section.

2. Description of the Spanish Bankruptcy System

The Spanish bankruptcy system provides for two procedures to resolve business crisis situations: suspensions of payments (regulated by the Law of Suspension of Payments of 1922, which is referred to here as L.S.P.) and the liquidation procedure (regulated by the Commerce Code). In both procedures the principle of the *par conditio creditorum* is applied, in which the creditor is deprived of the possibility of individually executing his credit against the assets of the debtor. The reality, however, is that the acceptance of the privileges of some agents (workers, Social Security, Treasury, and creditors with collateral) limit the complete application of this principle. General dismissal of payments is necessary in order to initiate any of the two procedures.[1] Let us now proceed to individually analyze both figures.

Suspension of Payments

The procedure may be applied only by the owner of the company; furthermore, when they coincide in time, restructuring filings have priority over the creditor liquidation procedure petitions (bankruptcy), so that the debtor has the opportunity to react if any prompt liquidation of the company is attempted.

After the request (which is routinely accepted by the judge), accounting experts are appointed (Art. 4) in order to determine whether the assets are or not superior to the total amount of debt (Art. 8). The judge bases his decision on this information; so, usually, when the experts determine that assets are superior to liabilities, the judge will declare the company being in a state of *provisional insolvency*. In this case, the procedure will continue normally to the following stage, where the creditors and the debtor meet in order to negotiate the agreement. As a way to help overcome co-ordination obstacles in the private debt restructuring, majority is required for the approval, varying according to

[1] The Commerce Code (Arts. 874 and 876.2) has indicated general dismissal of the payments as an element which defines bankruptcy. With respect to the procedure of suspension of payments, the Commerce Code (Arts. 870 and 871), besides the dismissal of payments, presupposes the *solvency* of the debtor (assets must be greater than liabilities). Nevertheless, when the L.S.P. later appeared, situations of *definitive insolvency* (Art. 8) were *in fact* admitted, for which the assets/liabilities ratio does not, in principle, distinguish both procedures. Neither does anything impede the bankruptcy of a business whose assets are superior to the liabilities, since only the generalized dismissal of the payments is considered.

the proposed plan (they vary between the 3/4 and the 2/3 of total liabilities).[2] Where the liabilities are superior to the assets, and when the debtor is not able to obtain resources that restore solvency, the creditors may force the procedure to be finished and the liquidation procedure to be declared. The L.S.P. establishes a hierarchy by which creditors are divided into two groups: preferential and ordinary. Unlike the US Chapter 11, in the Spanish restructuring procedure there is an automatic stay only for ordinary creditors. The secured creditors may grab most of the assets with potential liquidation value, acting outside the procedure of suspension of payments in order to recover their credits (and they will not be affected by the agreement achieved by the debtor and the ordinary creditors). As to the assets remaining after the grabbing actions of the privileged creditors, the ordinary creditors have no way to threaten the debtor because no possibility of lifting the stay is considered in the law. Moreover, as regards to the proposal, although in the Spanish procedure the debtor does not enjoy an *exclusivity period*, in practice some monopoly is given to the debtor: to reject the debtor's formal proposal implies a new extension of the procedure and, to the extent that creditors *exit option* will be less valuable (assets loose liquidation value through time), this weakens their position.[3] Throughout the procedure, unless extraordinary circumstances are produced, the L.S.P. maintains the property and the control of the resources in the debtor's hands. On the other hand, the judge is not an active part in the negotiation nor plays he a influential role through mechanisms like the US *Chapter 11 Cram Down*, which has been considered an effective way to force the creditors approval of the debtor plan.[4] The law favors new financing by giving new lenders priority status over all the previous claims.[5] This

[2] The procedure allows the debtor to offer a debt restructuring to all the ordinary creditors as a class and where the dissenting claimants are forced to accept the agreement if a qualified sum of credits and creditors do agree. This helps reducing what has been referred to as the *holdout problem* (see Roe 1987; Gertner and Scharfstein 1991; and Gilson, John and Lang, 1990)

[3] Liquidation value may decrease in time and, to the extent that the procedures are usually lengthy, the creditors hope to recover a low percentage of their credits if the negotiation fails. Moreover, the judge frequently extends the legal time limits, while debtors easily influence the decision. Additionally, delay may favour the debtor through the resolution of uncertainty mentioned in Bebchuk and Chang (1993)

[4] In the US, the judge has the capacity of forcing the acceptance of the plan proposed to dissident creditors, by the *Cram Down* mechanism (Wruck, 1990, p. 440). Even though *Cram Down* is not frequently used, it is important to consider the impact that the threat can have on the creditor's willingness to negotiate and reach an agreement (Kaiser and Kaiser, 1993, p.27).

[5] The fact that new finance is senior to the bankruptcy claims, means that the debtor may take certain investment decisions which affect the firm's value and, in consequence, influence the negotiation in order to obtain creditors' concessions (see Mooradian, 1994)

generates new incentives to the suppliers to continue financing the firm and it facilitates the continuation of operations, decreasing indirect costs caused by lost business opportunities upon entering into the procedure.[6]

The Liquidation procedure

The principal effects of the declaration of the liquidation procedure are two: the separation of the bankrupt with respect to his assets (Arts. 1035 and 1044.3 of the Business Code of 1829) and the removal of the debtor from the firm's administration (Art. 878.1 of the Business Code of 1885). Additionally, the debtor can suffer other consequences of a sanctioning nature, such as, for example, house arrest until the proceedings of the assets' occupation have ended (Art. 1044 of the Business Code of 1829 and Sentence of 19 Dec 1985), the withholding of his correspondence (Art. 1044 of the Business Code of 1829) and the disqualification for the practicing of business in general (Art. 13.2 of the Business Code of 1885). All of these aspects are non-existent in the suspension of payments and, together with a greater harshness in the *retroactive* measures (which could mean the rendering null of a contract, for example, a mortgage contract) have been considered as the principal motives for which the debtor has preferred, when it has been possible for him, to avoid the liquidation procedure. The creditors come together in general meetings on several occasions to determine questions such as the election of receivers, the recognition and graduation of credits or even the approval of an agreement with the debtor (which is not very likely). The judge delegates the supervision of the bankruptcy operations in the commissioner. The receivers/trustees take responsibilities of representation and administration of the firms' assets of the business, being able to sell them at any time in order to initiate the payments to the creditors. As we see, this procedure is structured to carry out the judicial liquidation of the firm, and, though possible, agreements between debtor and creditors are practically non-existent.

[6] This has been considered a positive feature in bankruptcy systems: Kaiser and Kaiser (1993, p. 30) and Franks, Nyborg and Torous (1996)

3. The Approach to the Problem

With respect to the analysis of the outcomes of the re-negotiation between debtors and creditors once the bankruptcy procedure is initiated, the motivation of the papers published to date has consisted of reaching good models of prediction in terms of continuity/liquidation. With these models, Casey et al. (1986) proposed orienting the investors specialized in troubled firms for the taking of decisions. Campbell (1996) hopes to assist judges and accounting experts in the determination of whether the business can remain in the restructuring procedure (*Chapter 11*) or whether judicial liquidation should be forced when no possibilities of survival exist (*Chapter 7*). Kim and Kim (1999) consider that anticipating whether the business can continue or not is important for all the agents involved (stockholders, creditors, executives...) given that the consequences for them are very distinct depending on whether one outcome or another occurs.

It has not been possible to rely on a statistically representative sample of the firms entering into the bankruptcy system in this study (in Appendix 1 the sampling methodology is explained), so that the predictive capacity of the models does not constitute our principal contribution. Our purpose consists of taking advantage of the informative content of the accounting data to contribute knowledge with respect to the functioning of the Spanish bankruptcy system. Before continuing, we recognize the limitations which occur from not having information available relative to the structure of credits beyond that contributed by the annual *abbreviated* accounts obtained at the Mercantile Registry of Barcelona: it has not been possible to work with measures of concentration, weight of the privileged credit, banking participation in the liabilities, etc. [7]

An econometric model is proposed *to capture the quality of the firm* using habitual measures in financial analysis. Given that we know the outcomes of the bankruptcy system as well as the recovery level of the credit agreed upon between the debtor and creditors, we contrast to which point these *outcomes* respond to a determined pattern related to the value of the firm. The variables and their interpretation as values of economic quality of the firm are shown in Exhibit 1.

[7] The Mercantile Registry is located in the capital of the province, and the geographic dispersion of the courts makes it very costly to gain access to more detailed information.

EXHIBIT 1: Economic Value Variables

Variables	Interpretation
Cash flow / Total liabilities	Time the firm would take in attending its liabilities if it dedicated all resources which it generates to the task. The greater its value, the greater the probability it could continue its activities attending to its commitments.
Retained earnings / Total Assets	History of profits and retained earnings policy. Grasps whether the firm has had a trajectory of net profits (whose accumulated magnitude depends on the age of the firm as well as on the annual quantity of the profits) and indicates the greater or lesser inclination to be capitalized.
Total Assets/ Total Liabilities	Guarantee which should permit the attending of the totality of the commitments, whatever their due dates are. Approximation to firm's solvency in the long run. Alternatively, it could be seen as the creditors' option value of liquidating the firm.
Short-term assets (without stocks)/ Short-term liabilities	Ratio of short-term solvency; measures the capacity to attend to immediate obligations. A worse short-term solvency can indicate bad management and be the cause of the beginning of the bankruptcy procedure.

Control Variables

Three control variables are included in the analysis. The first one is the firm's size, approximated by the total of assets. We also control by the sector, introducing a binary variable indicating whether the firm is industrial or not. Finally, another binary variable is introduced, with the value of "1" in the case of entering in the bankruptcy system from 1994 on, and "0" in the case of doing it during 1993.

4. Resource Reallocation

It is shown in this section that the *ex ante* financial data (with one year's distance, on average, up to entering in the bankruptcy system) contain an explanatory capacity with respect to the observable outcomes *ex post* (after the bankruptcy procedure). Let us point out that the hypothesis to be contrasted is the following:

Ho: The outcome observed in the bankruptcy stage (restructurings, dismissals, liquidating and bankruptcy agreements) is independent of the economic value (Ve) of the firm.

Taking into account that the outcomes for the firm in a bankruptcy situation can be either continuity or liquidation, it is understood here that its economic value (*Ve*) should respond to the following relationship:

$$Ve = f\,(Vc\,,\, V_L) \rightarrow f(X_1, \ldots, Xn), \qquad (1)$$

with *Vc* being the going concern value of the firm (measured as the current value of the wealth generated in the future), V_L the value of liquidation (or what would come from the piecemeal sale of its assets) and *X1, ... , Xn* the distinct dimensions (or variables) in which the information contained in the financial states would be condensed.

It is convenient to clarify that with the data available it is not possible to extract conclusions from the economic efficiency perspective. The financial statements do not permit the clear discrimination between variables related only to the value of continuity (*Vc*) and not with the (V_L), or viceversa. For example, the firm's resource generation (*Cash flow / Total liabilities*) could indicate the going concern possibilities (*Vc*) as well as being an approach to the value of liquidation (V_L): possibly, the greater the going concern value, more willing the market would be to pay for them in case of liquidation (with which a positive relation between *Vc* and V_L would be present).[8] For this reason, it cannot be contrasted here whether, for the firms which continue, $Vc > V_L$ is satisfied, or whether $Vc < V_L$ in the cases of liquidation: that is, it is not known whether the bankruptcy system produces economically desirable results or not.

For this, the contribution of our study consists of contrasting whether some pattern of functioning in the Spanish bankruptcy system exists which is explainable based on the financial dimension of the firms as opposed to the possibility that the results are produced in a random way or by chance.

4.1 Outcomes of the Bankruptcy System

The *multinomial logit* model is used in this article in order to specify the functional relationship between the financial characteristics of the firm and the outcomes observed in

the bankruptcy system. Concretely, the model specifies the probability, *P*, that firm *i* experiences an outcome *j* to negotiation (where *j* = 1 corresponds to suspensions of payments which end in restructuring; *j* = 2 to suspensions of payments ending in dismissal; and *j* = 3 to liquidations after suspension of payments or bankruptcy) in function of vector X_i of characteristics of firm *i*:

$$P_{ij} = \frac{\exp(\beta_j^i X_i)}{\sum_j \exp(\beta_j^i X_i)} \qquad (2)$$

where B_j is the vector of parameters estimate for maximum likelihood. Multiple solutions exist which attribute the same probabilities to each category (the model is not identified), thus the restriction of $B_1 = 0$ is imposed, such that the rest of the coefficients measure change relative to Group 1 (see Maddala, 1983):

$$\log \frac{P_{ij}}{P_{i1}} = \beta_j^{'} X_i \qquad (3)$$

The model does not contemplate an ordering among the three outcomes. The reasons are two: first, because these come from a process of decision-making where numerous agents intervene with distinct objectives and, at times, at odds; secondly, because dismissal (not reaching an agreement) is not directly interpretable in economic terms since it can respond to very different situations (from the exit of the procedure because the conflict has been resolved privately, to the disinterest of the creditors to continue negotiating). It is also fitting to point out that firms which have been liquidated either judicially (bankruptcy) or privately (after negotiation in the suspension of payments) have been included in the same group (*j* = 3): whatever the path which has been taken to arrive at liquidation may be, it deals with situations in which the firm finds itself to be very deteriorated.

[8] The presence of *specific investments* (that is, recoverable only in the productive context of the firm) could have distinct weight according to the type of firm, for which this correlation does not necessarily exist. Nevertheless, lacking greater information, we cannot reject the possible correlation.

The result of the comparison of the reference group (restructurings) in front of the rest is shown in Table 1: first in relation to dismissals (j = 2), and then with respect to liquidations (j = 3). It is observed that firms of greater size have greater possibilities of survival (a result also obtained by Campbell, 1996, as well as by Kim and Kim, 1999), probably due to greater social and political pressure as well as by the greater relative importance which they represent for their creditors. It is also noted that no financial differences were found here between restructurings and dismissals. Now, if restructurings are compared with respect to liquidations/bankruptcies, the results support the intuition with respect to a better economic situation of the firms which restructure. In a similar way to that obtained by Casey et al. (1986), the cases of liquidation reflect a greater deterioration in terms of historical trajectory of benefits (measured by the reserves) as well as by a lesser capacity of the current generation of resources, a fundamental variable in any proposal of future payment of debts. Thus, it seems that the reassignment of resources in terms of continuity/liquidation does not depend upon chance, but rather that the bankruptcy system generally liquidates firms with the poorer economic-financial ratios.

Additionally, the significance of the *year* variable does not mean that in 1993 no firms were liquidated or went bankrupt: the result reflects that those that in 1993 were in the process of extinction stopped depositing accounts which referred to 1992 in the Mercantile Registry (which is nothing more than an indicator of the advanced deterioration and breach of general obligations in which they probably found themselves) with which, in consequence, *they did not form part* of our sampling/sample (whose first prerequisite was that they presented the accounts of 1992, as is explained in Appendix 1).

TABLE 1: Resource allocation and firm's quality multinomial logit model

Dependent variable: *j* (outcome): (*j* = 1): Restructuring (34 obs.) (*j* = 2): Dismissals (47 obs.) (*j* = 3): Liquidations (30 obs.) and Bankruptcies (48 obs.) **REFERENCE GROUP: 1**	
(j = 2)	Coef. B (Signif.)
Ln (Total Assets)	-.4418008 (0.018)
Year (Dummy) 1: 1994 (a)/ 0: 1993	.609131 (0.257)
Activity (Dummy) 1: Industry / 0: no industry	-.6682108 (0.179)
Cash flow / Total liabilities	-1.994332 (0.248)
Retained earnings / Total Assets	-1.930183 (0.257)
Total Assets/ Total Liabilities	1.255167 (0.215)
Short-term assets (without stocks)/ Short-term liabilities	-.8405943 (0.187)
Constant	8.22131 (0.032)

Table 1 (continued)	
(j = 3)	Coef. B (Signif.)
Ln (Total Assets)	-.4755383 (0.011)
Year (Dummy) 1: 1994 (a)/ 0: 1993	1.957238 (0.000)
Activity (Dummy) 1: Industry / 0: no industry	-.4312085 (0.380)
Cash flow / Total liabilities	-4.30991 (0.014)
Retained earnings / Total Assets	-3.514546 (0.037)
Total Assets/ Total Liabilities	1.118083 (0.269)
Short-term assets (without stocks)/ Short-term liabilities	.0295859 (0.954)
Constant	8.234132 (0.033)
Log likelihood = -140.02144 Prob > chi2 = 0.0000	

4.2 Procedure Election for Liquidation

The analysis of the outcomes of the bankruptcy system would be incomplete if the differences between *private* (carried out by the creditors themselves after the agreement in suspension of payments) and *judicial* (bankruptcy) liquidations were not studied. In this sense, at least with respect to the period to which the data refer (up to the first half of the 1990s), the preference for the LSP (and for reaching a liquidating agreement with the creditors) was explained, in great part, by the risks of a penal nature associated with bankruptcy. On the other hand, in some cases upon suspending payments the debtor held the hope of being able to continue his activities (at least for a while longer), regardless of the deterioration of the situation in which he found himself. Nevertheless, it is not always possible to avoid bankruptcy: from the perspective of the debtor, suspensions of payments are more costly (in bankruptcy it is not necessary to negotiate with the creditors and one does not have to incur important legal costs). It could be said that the election of the procedure depends on the economic capacity of the debtor, which could be related with the

economic quality and capitalization of the firm. A comparison of liquidating agreements in suspension of payments (category $r = 2$) and bankruptcies (category $r = 3$), this last one being the reference group in the *multinomial logit* model, is seen in Table 2.

TABLE 2: Procedure election for liquidation

Dependent variable: *r* (outcome): *r* = 1: Restructurings (34 cases) and Dismissals (47 cases) *r* = 2: Liquidations within suspension of payments (30 cases) *r* = 3: Bankruptcy (48 cases) REFERENCE GROUP: 3	
(r =1)	Coef. B (Signif.)
Ln (Total Assets)	.4773089 (0.012)
Year (Dummy) 1: 1994 (a)/ 0: 1993	-2.335194 (0.000)
Activity (Dummy) 1: Industry / 0: no industry	.4073744 (0.358)
Cash flow / Total liabilities	2.601884 (0.029)
Retained earnings / Total Assets	1.58632 (0.123)
Total Assets/ Total Liabilities	-.1529502 (0.674)
Short-term assets (without stocks)/ Short-term liabilities	-.2062916 (0.729)
Constant	-7.035463 (0.056)

Table 2 (continued)	
(r =2)	Coef. B (Signif.)
Ln (Total Assets)	.5045719 (0.021)
Year (Dummy) 1: 1994 (a)/ 0: 1993	-1.574233 (0.007)
Activity (Dummy) 1: Industry / 0: no industry	.834925 (0.112)
Cash flow / Total liabilities	-.2873522 (0.807)
Retained earnings / Total Assets	-.5032527 (0.535)
Total Assets/ Total Liabilities	-.2848643 (0.220)
Short-term assets (without stocks)/ Short-term liabilities	.6790129 (0.253)
Constant	-9.365202 (0.028)
Log likelihood = -134.50955 Prob > chi2 = 0.0000 Note: It can be observed that in order to control for the financial characteristics of the remaining firms, group 1 includes both restructurings and dismissals.	

The results indicate that bankrupt firms have a significantly smaller size than those which are liquidated in suspension of payments, suggesting the need for a minimum size in order to face the costs which the latter implies. From the perspective of economic-financial quality, significant differences do not seem to exist between the two groups of firms. For their part, bankruptcies pile up in 1994, which would have a similar interpretation to the one made in Section 4.1 though conditioning it in that it is the bankruptcies which fail to satisfy their obligations of registry.[9]

5. Contractual Analysis of the Agreements

It is possible to interpret the agreement as a contract which will form part of the *ex post* structure of obligations of the firm. The negotiation of this contract as well as the impact on

the real management of the firm present some peculiarities which distinguish it from any other commitment. Nevertheless, it is interesting to turn to some ideas which have appeared in the literature of corporate finance on the type of clauses which have come to be included in financial contracts, clauses destined to limit diversions and the costs related to the incomplete character of the contracts.

Let us indicate at this point that our attention is centered on the characteristics of the restructuring agreements. There is no deliberation in the liquidating agreements over the value distribution among the creditors and the debtor: the debtor puts his assets at the disposition of the creditors (normally represented by a commission) so that they liquidate it in the manner which is most convenient for them, understanding the term "liquidation" as the sale in parts of the assets. In restructuring, on the contrary, the distributive element plays an important role and produces two fundamental effects: in the first place, after a negotiation in which the assets have been distributed (those that remain after the grabbing actions of the *preferential* creditors, namely, those who can act directly on the firm assets in order to recover their credit: employees, public administrations, mortgage creditors...), the unfulfilled contract with the *ordinary* creditors is completed. Secondly, they give the opportunity of introducing changes in the *ex post* control structure of the firm, at least until the complete satisfaction of the commitment contained in them.

[9] Even though the exercise shown in Table 2 has been carried out in order to compare liquidations after the suspension of payments and bankruptcies, it is interesting to confirm that the latter reflect a generation of resources significantly smaller than those which continue/proceedings dismissed (r=1).

Financial Dimension

Restructuring agreements have a schedule of future payments agreed upon by the debtor and a qualified majority of creditors which allows for an approximate estimation of the value to receive by the latter after negotiations (in the case of the agreement's being satisfied). The percentage of agreed payment over the total of the ordinary credits has been calculated in Table 3, bringing the future foreseen payments up to the date of the request of the beginning of the procedure of suspension of payments.[10]

TABLE 3: Expected Recovery Rates for Ordinary Creditors

Recovery average up to date of request (a)	All observations	Size > 250 million ptas. (total liabilities)	Size < 250 million ptas. (total liabilities)	Industry	Services
Average	49,40	49,48	49,31	48,60	48,69
Median	49,94	49,87	55,31	50,34	49,54
Maximum	70,17	62,98	70,17	69,67	70,17
Minimum	11,79	34,54	11,79	11,79	21,51
Number	34	17	17	20	11
Variance analisys (F Prob)		Non significant	(0,9711)	Non significant	(0,9854)
(a) Recovery = Current value of expected payments / Ordinary liabilities x 100. Discounting rate: Loans 3 or more years, bank asset operations, corresponding to the year when the suspension of payments procedure was initiated (Central Bank of Spain).					

The average expectation of payment approaches 50%. The results show the low recovery hopes of the ordinary creditors. A good amount of variability is also observed (the agreement can represent a recovery of from 11.79% to 70.17%), which poses the following question: is it possible to explain a greater or lesser promise of payments in function of the financial state of the firm? Concretely, the hypothesis to be contrasted could be formulated in the following way:

[10] It is fitting to point out that these payments represent a promise that the owners of the firm make to the ordinary creditors under the supposition of continuity. For that, we should speak of payments which can or not be satisfied depending on the recovery capacity of the firm, an aspect which has not been able to be evaluated given that no active control exists from the court regarding its fulfillment. Note also that in the liquidation agreements there does not exist a previous estimation of what the recovery of the credit on the part of the creditors will be since that will depend on the value attained in the sale of the assets.

H1: The differences in the agreed-upon recovery of value by the creditors are independent of the economic value of the firm.

In order to carry out the contrast, the economic value of the firm will be approached starting from the information contained in the financial statements, taking into account (as was previously commented) that it is not possible to construct financial variables which only reflect the going concern value (Vc) or variables which only capture the liquidation value (VL):

$$R = f(Ve) = g(Vc, V_L) \rightarrow h(X_1, \ldots, Xn) \qquad (4)$$

With:

R: the recovery percentage (see the calculation in Table 3)
Ve: economic value of the firm
Vc: continuity value of the firm
V_L: liquidation value
$X1, \ldots, Xn$: financial variables

In order to contrast the existence of this relationship, the *Tobit analysis* is used here (which, in contrast to the simple regression model, allows to control for the financial characteristics of the firms which do not restructure, for which we have no data available concerning the amount recovered by their creditors). In Table 4 it can be noted that the larger the size of the firm, the greater the creditors' recovery expectations, which could possibly indicate a better negotiating preparation of the creditors of large firms. And it is also seen that the more resources the company generates, the larger the percentage of agreed payment is: it seems that the restructuring plan implicitly incorporates the quality of the firm and that payment does not depend on random factors.[11]

[11] It is also possible to observe that, interpreting the *year* variable as an approximation to the breach of general obligations (such as was argued in Section 4.1), the fact that those which satisfied the mercantile registry at a time close to entering into suspension of payments acquire a greater commitment with the creditors would be explained by their better economic situation.

TABLE 4: ***Tobit analysis, ordinary creditors recovery rates.*** [12]

Dependent variable: Recovery (34 cases, censored with 0 value in non-restructuring cases (125)	Coef. B (Signif.)
Ln (Total Assets)	13.51143 (0.010)
Year (Dummy) 1: 1994 (a)/ 0: 1993	-42.60456 (0.007)
Activity (Dummy) 1: Industry / 0: no industry	17.02377 (0.233)
Cash flow / Total liabilities	93.47951 (0.057)
Retained earnings / Total Assets	80.36377 (0.116)
Total Assets/ Total Liabilities	-38.95539 (0.235)
Short-term assets (without stocks)/ Short-term liabilities	11.75157 (0.456)
Ln (Total Assets)	-261.4392 (0.020)
se 59.77419 8.747893 (Ancillary parameter)	
Log likelihood (all observations) = -228.40966 Prob > chi2 = 0.0000	

It is fitting to point out, however, that not being able to know the values of continuity and of liquidation does not allow for the verifying of whether a greater recovery rate owes to: a) whether the creditors have a certain *negotiation power* in which, when they see that the debtor can pay more (as a consequence of a greater value of continuity, Vc), they pressure so that his commitment is greater; or, b) whether they really are receiving more due to the possibility of exercising their *exit option*, or quantity obtained in the case of negotiation breakdown (which is nothing but the value of liquidation, V_L).[13] A theoretical model which allows for understanding these two possibilities better is shown in Appendix 2.

[12] The Heckman model of selection, with which the probability of restructuring (selection of the firms which achieve a restructuring agreement) previous to calculating the explanatory model of the recovered quantity by the creditors, has been tested. However, the contrast showed that the model of selection was not justified, indicating that the results did not significantly change with respect to those that had been obtained without it.

Control Dimension

Once the "financial dimension" is analyzed, it is worth asking oneself for the rest of the covenants, related to the "control dimension". The fulfillment of the financial commitments depends on the situation of the firm and the accuracy in the taking of decisions by those who run it. To the extent in which the recovery rates depend on the management, the creditors can have interest in introducing clauses which allow them to carry out tasks of control. That is, the financial crisis could act as a catalyst of change in the running of the firm by means of the intervention of the creditors (Wruck, 1990).

What is certain is that after signing the agreement the possibility exists that *moral hazard* will occur, in such a way that the executives-owners could be able to make decisions which would only favor them, in detriment to the interests of the creditors (by reducing the probabilities of fulfillment of what was agreed upon). In this sense, the agreement could have similar characteristics to those of other financial contracts such that the creditors included clauses destined to reduce this type of behavior. These clauses could have as an objective the avoiding of, for example: 1) the excessive payment of dividends, leaving the creditors without any value whatsoever; 2) the entry in excessively risky investments, with the consequent effect of increasing the value for the owners, but diminishing the possibilities of payment at the same time, and 3) the rejection of profitable investments, due to the incomes generated going towards paying only the creditors.[14]

Taking the costs caused by these undesired conducts into account, the appearance of covenants destined to reduce them could be expected: legislation does not oppose their inclusion in the agreement. Such as the agency theory defends, the way in which creditors control owners could affect the global value of the firm. For this, certain clauses could increase the creditors' value, in spite of representing costs of supervision for them.

After the analysis of the restructuring agreements, we have made the following classification: a *strong* form of control exists when creditors affect aspects related to the running of the firm, trying to avoid the types of behavior described above, and the *weak* form, which is seen when the agreement only foresees the control of the fulfillment of the

[13] Logically, the creditors will not accept a commitment whose current value is inferior to VL.
[14] See the work by Smith and Warner (1979) in which the typology of clauses in contracts of obligations in the U. S. and their effects on the value for owners and creditors of the firm is analyzed.

payments agreed upon to the creditors. The results of this analysis are presented in Table 5, where the cases in which *no type of control whatsoever* was observed are also indicated.

TABLE 5: Firms' creditors ex *post* control

Category					
Strong form	***Control on the management of the company***				
Type 1	Interim management				
Type 2	Member of board of directors				
Type 3	Commission creditors (right to veto)				
Weak Form	***Supervision of the execution of the payments***				
Type 4	Commission of creditors (supervision of agreement compliance)				
No control	*No type of control whatsoever*				
Tipo 5	No control.				
Types of Control:	All	Industry	Services	Size < 250 millions (1993)	Size > 250 millions (1993)
Tipo 1	0	0	0	0	0
Tipo 2	0	0	0	0	0
Tipo 3	6	5	1	1	5
Tipo 4	22	14	6	11	11
Tipo 5	5	1	4	5	1

In some cases (above all in industry) this control ends up affecting aspects of the management of the firm. Nevertheless, it is normal that control is limited to the *following of the fulfillment of the payments* agreed upon and that the instrument chosen for this is a commission of creditors. This suggests that the covenants which imply additional control could be excessively costly.

With respect to the six cases of strong control, this should not be interpreted in terms of improving the management of the firm, but rather as prevention. The fact that in all of them the charges on the assets or sales were explicitly limited is significant. That is, it specifically deals with restrictions of an assets nature. On the one hand, limiting the possibility of the sale of the assets contributes to preserving the value of continuity of the productive totality of the firm, extending one of the principal advantages of bankruptcy (assets protection) beyond the procedure. On the other hand, the assets cannot constitute a

guarantee of future debts, nor be sold with the aim of rising liquid means which could be invested in riskier projects and which would be detrimental to the creditors.[15]

Furthermore, in five cases of *strong control* a restriction related to the prohibition of distributing dividends during the duration of the agreement was also established. By introducing this clause, creditors avoid the loss of value which is produced by diverting funds which could be invested in the firm itself.[16] However, with respect to the policy of financing, a possible inconvenience is that the firm which does not distribute dividends only with great difficulty will be able to attract new contributions of capital.

6. Conclusions

Evidence on the characteristics of firms which enter in the Spanish bankruptcy system has been provided in the present article. However, more questions remain open than those which have been answered. For example, it has not been possible to contrast the efficiency of the bankruptcy system in its task of reassigning resources, that is, it has not been possible to establish whether the liquidation of efficient firms (whose value of continuity is superior to that of liquidation) occurs or whether inefficient firms continue (with a liquidation value superior to that of continuity).

The results point out that, in general, firms which continue find themselves relatively better that those which are liquidated, judging by the contrasted ratios of economic-financial quality (particularly emphasizing those related with the cash flow generation of resources). As far as the path chosen for liquidation is concerned, it can be said that the firms which achieve an agreement of liquidation within the suspension of payments as well as those which are bankrupt show very similar indicators of economic quality. However, the latter are very small and, what is more significant, they are less capitalized. That could reflect a smaller economic capacity on the part of the debtor who, in spite of his preference for liquidating in the suspension of payments, cannot assume the

[15] Just as Smith and Warner (1979, p. 127) indicate, one of the inconveniences of this clause is that it could limit operations of beneficial sales when the asset sold had, for third parties, a value superior to that which the firm itself gives to it. A clause which permitted sales conditioned to the purchase of assets which substitute the assets which left the firm could contribute to reducing this problem.

[16] Just as Smith and Warner (1979, p. 134) comment, with this the incentives to infra-invest pointed out by Myers (1977) are also reduced, although it could cause problems of over-investment, by preferring projects of greater variance (even those of negative Net Present Value).

costs of negotiations with the creditors and decides to abandon the firm to its fate in the bankruptcy procedure.

The analysis of restructuring agreements brings up some results which should be the object of future investigations. On the one hand, it has been seen that the percentage of recovery agreed upon with the creditors is related with the economic quality of the firm (measured by the generation of resources relative to the debt). On the other hand, from a *contractual technique* point of view, clauses destined to restrict or influence in the future activities of the debtor are included in few agreements, probably due to the elevated costs which the supervision of their fulfillment would imply.

Appendix 1: Elaboration and Characteristics of the Sample

The obligation of the presentation of the Annual Accounts contained in the Commerce Code was developed in Art. 329.1 of Royal Decree 1597/1989, of December 29th, by which the Regulation of the Mercantile Registry was passed. Firms which presented their accounts in the Mercantile Registry relative to fiscal year 1992 have been taken into account in this reference, obtaining a sample of those for which there was knowledge of a suspension of payments or bankruptcy in the two-and-a-half subsequent years. Fiscal year 1992 was chosen because it would not have been possible to obtain sufficient observations with previous and subsequent fiscal years and the computer system of the Registry required this procedure of selection. Some cases, above all those closest to 1/1/93, could not be observed, among other reasons because firms which find themselves close to suspension of payments and bankruptcy frequently stop presenting their accounts. Many of the firms which initiated a procedure during 1993 probably stopped presenting accounts relative to 31/12/92. See the general characteristics of the sample in Table 6.

TABLE 6: Sample Characteristics[17]

Number (%)	Industry	Services	Construction	Total
Bankruptcies	18 (37,5%)	23 (47,9%)	7 (14,6%)	48
Susp of payments	56 (50,5%)	47 (42,3%)	8 (7,2%)	111

Assets (millions ptas.)	Average	Median	Max.	Min.
Bankruptcies	174,6	101,5	923,9	9,5
Susp of payments	765,2	180,3	10.301,8	25,0

Asset comparisson between groups Million Ptas

Group	Observations	Average	Standard deviation	Max.	Min.	ANOVA (F prob)(2)
Restructuring	34	1.417	2.457	47	10.302	
Dismissals (3)	47	425	842	25	4.745	0,0120
Liquidation within susp payments	30	559	941	25	4.203	0,0771
Bankruptcies	48	174	199	9	924	0,0008

To arrive at the final sample, a total of 226 suspensions of payments and 77 bankruptcies which satisfied the requisite of having presented their accounts in 1992 was used as the starting point. A filtering process was performed on them in order to insure accounting quality (coherency of accounting *entries* and *sub-entries*) as well as whether the firm developed a minimum of activity (concretely: to have income, total fixed assets and short-term debtors). Firms which formed part of the sample entered into a bankruptcy procedure in the period of time between the beginning of 1993 and the middle of 1995, with a distance average of one year from when they deposited their balance sheets.

[17] Notes on Table 6: (1) It was not possible to know whether in some case bankruptcy ended in agreement, given that the Mercantile Registry does not receive this type of information. However, the generalized opinion exists that this is a very infrequent situation. (2) Variance analysis has been performed comparing restructurings with the rest of the groups. (3) Note that in this sample/sampling the elevated proportion of cases without agreement can be due to a mere question of time: numerous cases of agreement were still to be resolved.

Appendix 2: Model of Negotiation

Let us suppose that only one Debtor and one Creditor exist. Let us define r(C) and r(D) as that which Creditor and Debtor would receive, respectively, in case of a breakdown of negotiations. Let Vc be the value of continuity of the firm (that is, the value which would be divided if a restructuring agreement of the firm were reached). Let *z* be the power of negotiation, whose possible values are found within the interval (0,1), and let us define Rc and R_D as the value which after negotiations Creditor and Debtor, respectively, receive. Under these premises, the Nash solution to the posed problem of negotiation will come given by,[18]

$$Rc = r(C) + z\,[Vc - r(C) - r(D)] \qquad [1]$$

$$R_D = r(D) + (1-z)\,[Vc - r(D) - r(C)] \qquad [2]$$

Such as the Spanish bankruptcy system is designed, in case of a breakdown the Creditor obtains the value of liquidation of the firm, represented by V_L, while the Debtor receives nothing, so that:

$$Rc = V_L + z\,[Vc - V_L] \qquad [3]$$

$$Rc = (1 - z)\,V_L + z\,[Vc] \qquad [4]$$

If the Creditor did not have any negotiation power (z=0), he would only receive the equivalent to the value of liquidation; on the contrary, in the case that he could influence in the final payment, the parameter of negotiation power *z* would be significantly greater than 0. It is only possible to empirically contrast this model if two conditions are satisfied: in the first place, to have information available on the values of continuity and of liquidation of the firm (or, if not, co-related variables which serve as *proxies*), and, in second place, that there does not exist a correlation between Vc and V_L. If the opposite were true, the contrast would not have validity. The information available in this study does not allow for

the carrying out of this exercise principally due to the fact that it is not possible to clearly reject the non-existence of a correlation of the values of continuity and of liquidation of the firm.

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[18] Be warned that the axiomatic root approach of Nash (1953) has been contested by other authors (see Binmore and others, 1986) in the sense that explaining this solution as a result of a more realistic process of offers and counter-offers (Bebchuk and Chang, 1993; Bergman and Callen, 1991).

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