BUILDING LEGAL INDEXES TO EXPLAIN RECOVERY RATES: AN ANALYSIS OF THE FRENCH AND UK BANKRUPTCY CODES✣

RÉGIS BLAZY
University of Strasbourg, IEP Strasbourg
EM Strasbourg Business School

BERTRAND CHOPARD
University of Paris 10, EconomiX

NIRJHAR NIGAM
ESSEC Business School

Abstract

In this paper, we test the characteristics of bankruptcy procedures that are likely to generate recoveries for the creditors. Such recoveries are related to the performance of bankruptcy law as they stem from the procedures' ability to preserve the value of bankrupt firms, as basis of creditors' repayment. We give elements of answer by taking into consideration two countries that are good representatives of the two main legal systems prevailing in Europe: France (Civil Law) and United Kingdom (Common Law).

In order to identify the characteristics of bankruptcy procedures that generate recoveries, we build 132 original legal indexes accounting for the main functions of bankruptcy law that were highlighted initially by Hart (2000). Namely, we measure the accessibility of the procedure, their ability to disclose public information, the level of protection of the debtor's assets, the coordination of the claimants and their decision power under bankruptcy, and the sanction of faulty management. We show that the French procedures are more protective of the debtor's assets and favor more the coordination of claims. In United-Kingdom, we find strong opposition between the liquidation and the reorganization procedures: the former ones prioritize the protection of secured claims, while unsecured creditors benefit from higher decision power under the latter ones.

We then use an original database of 833 French and UK bankrupt SMEs to measure the recovery rates that are generated by each procedure. By controlling for the value of assets, the structure of claims, the origins of default, and the firm characteristics, we first isolate the bankruptcy rules that are associated to higher recovery rates: namely, accessibility of the procedure, protection of the debtor's assets, protection and coordination of claims. On the contrary, information disclosure under bankruptcy has negative impact on total recoveries, probably due to the breach in confidentiality. Last, some bankruptcy rules are not significantly related to recoveries, especially the severity towards faulty management.

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INTRODUCTION

Corporate financial distress reflects the debtor's inability to meet previous financial commitments towards creditors. Countries have chosen three ways to collectively resolve such situation. For their most financially distressed firms (when continuation is impossible), a court may order a piecemeal liquidation of the firm's assets. In that case, the firm is closed down and the liquidation proceeds are distributed among creditors according to a specific order of claims, generally close to the absolute priority rule (APR hereafter). Besides, the court may also order a sale as a going concern: here, the main constraint is to find some bidders, and to benefit from well-functioning capital markets. Anew, the proceeds of the sale are distributed according to an order of repayment detailed in the bankruptcy code. Finally, the court may supervise a bargaining procedure in order to prepare firm's reorganization. More precisely, managers and creditors have to bargain on two points: whether the firm should be liquidated or reorganized? (*i.e.* how to restructure the debts?), and how the future

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(uncertain) firm's value should be divided up between all the claimholders? (*i.e.* should APR strictly apply or should deviations from APR be introduced in order to favour firm's reorganization?[1]).

Researchers have first questioned the various designs of national bankruptcy procedures in order to measure, in a second time, their performance. But, to manage this research program, one must define some criteria of "performance". On this topic, Hart (2000) explains that the main objective of bankruptcy law should be to maximize the financially distressed firm's value to be divided between all the stakeholders. This now well known issue deals with the so-called *ex post* efficiency and was pointed out by Bebchuk (1988), White (1989), Aghion, Hart and Moore (1992), and more recently, by Blazy and Chopard (2004), Fisher and Martel (2009). Hart (2000) also explains that there is now a large consensus on the various ways to increase/preserve the firm's value after the bankruptcy filing, *i.e.* on the rules of a "good" bankruptcy procedure. However, we find in the literature, very few empirical evidence of such a relation between some desired bankruptcy rules (from a theoretical point of view) and some proxy of performance (meaning Law's ability to maximize financially distressed firms' value). The purpose of this paper is to provide some elements of empirical evidence. From that perspective, we recall hereafter the main characteristics that Hart (2000) identifies as the components of a "good" bankruptcy procedure.

First of all, Hart (2000) indicates that bankruptcy law should improve coordination between the various creditors. Indeed, a creditors' race might lead to suboptimal dismantlement of the debtor's assets, and finally to an overall loss of value. This "common pool problem" has been widely addressed by Bulow and Shoven (1978), Gertner and Scharfstein (1990), and more recently by Longhofer and Peters (2004). Then, by implementing specific rules (stay of claims and of individual proceedings, creditors' representation, creditors' consultation…), bankruptcy procedures can help in freezing the creditors' individual right to sue the debtor and, more generally, in solving their coordination problems. Besides the resolution of coordination issues, we consider that the protection of the debtor's assets has similar effects, as it prevents them from loosing value before or after default. For instance, the law may order that bankruptcy practitioners recover some assets if the purpose of their sale was to impoverish the creditors, or to strategically file for bankruptcy. In the same topic, courts might apply various managerial rules during the bankruptcy procedure in order to protect the firm's assets (forced extension of previous contracts, supervision of the managers, assets sales in auction procedures …). Finally, preventive rules (*i.e.* rules taking place prior to default) can speed up bankruptcy filings, and hence preserve the firm's value (*cf.* "alert rights", account certification, interview of the managers…).

Second, Hart (2000) indicates that bankruptcy can be viewed as a tool that helps stakeholders, especially creditors, in finding a collective solution that, finally, maximizes the firm's value. Intuitively, finding such solution on a collective basis is more complex when creditors with conflicting interests are numerous. Without any efforts to organize the decision process, the creditors might not reach an agreement, and consequently select an outcome that does not maximize the overall recoveries. To overcome this difficulty, economic theory suggests that the residual owner (i.e. the stakeholder who benefits from any marginal increase in the firm's value) should ultimately decide. However, the identification of the residual owner requires that APR is clearly defined (there is *a priori*

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[1] Remind with Hart (2000) that a strict application of A.P.R may be counterproductive if managers, acting on behalf of shareholders, try to delay bankruptcy filing because they anticipate that the shareholders' payment will equal zero in case of bankruptcy.

no difficulty here) and that the firm's value can be assessed without any ambiguity (this is much more difficult task as such value is not objective). Thus, how to help the creditors to collectively decide on the debtor's fate? In practice, a first way is to give them the right to vote on the final outcome (and to approve reorganization or not). Here, the creditors' decision power is maximized, but the final decision may depend on the firm's capital structure. As mentioned by Bergström, Eisenberg, and Sundgren (2002) and Morrison (2007), the more secured the creditors are, the lower is the likelihood of reorganization under bankruptcy systems that require secured (and unsecured) creditors to approve the reorganization plan[2]. The second solution is to transfer the decision to a Court. Here, the creditors' decision power is minimized as it relies in the hands of one sole decision maker. As a consequence, the final outcome should not depend on conflicting interests anymore. But, errors may arise if the primary objective of the judge does not align with the maximization of the firm's value. As a result, having the power to influence the final choice might have positive (direct and indirect) effects on recoveries. It first gives the creditors more incentives to trigger earlier the procedure as they know they can influence its outcome. In addition, it makes them more involved in the procedure, seeking for the solution which maximizes their interests. Further, benefiting from the decision power might have contrasting effects. It might increase the recoveries of the classes of creditors who have the highest decision power at the expense of the other classes of claimholders. For instance, if shareholders have the right to vote on the final issue, they may obtain some payoff whereas claimholders which are ranked before according to the APR are not fully repaid.

Third, following Hart (2000), we suggest that another means to preserve firm's value is to ensure that the bankruptcy procedure is both accessible to the stakeholders and attractive enough to those at the head of the firm, mainly managers or shareholders. The underlying idea is that the sooner a distressed firm files for bankruptcy, the higher are the chances to resolve financial distress quickly without incurring high bankruptcy costs (Povel, 1999). Consequently, the triggering criteria should not be too restrictive, so that a wide set of stakeholders can turn to bankruptcy, as credible alternative to private attempts of debt renegotiation. Further, to create strong incentives to file for bankruptcy, either managers or shareholders should benefit from this filing. If not, managers would have the incentive to over-invest in order to delay for bankruptcy filing[3]. Shareholders could benefit for some deviations from APR in order to receive some portion of firm's value post bankruptcy. But, making access to bankruptcy procedure easier, or improving the managers/shareholders incentive to file for bankruptcy has a cost. On the one hand, the bankruptcy procedure should not be triggered too easily and/or too early so that the stakeholders cannot use the bankruptcy environment in their sole interests (strategic default: see Delannay, 1999). On the other hand, the bankruptcy procedure should also preserve the bonding role of debt. Indeed, to create good incentives to reimburse their debts (and therefore making prior easier access to credit), there has to be some punishment if the firm defaults, and APR applies

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[2] The intuition of this result runs as follows. As claimholders will vote according to their expected payoff post bankruptcy, totally secured claimholders will rather vote in favour on liquidation as they are sure to be fully reimbursed in that case. At the opposite, junior claimholders will be biased toward continuation, especially when the expected liquidation value does not cover their claims once senior claims are reimbursed. So, depending on both liquidation and continuation values, the voting process, and the structure of claims, some bankrupt firms may be excessively liquidated if senior creditors have the pivotal votes; or firms may be wrongly kept as a going concern if junior claimholders have the pivotal votes.

[3] It means that bankruptcy law could order some leniency to them. For instance, law can order some protection to managers by allowing them to present a reorganization plan.

this principle. Indeed, shareholders are ranked at the bottom of the stakeholders ordering, meaning that they are the most penalized in the bankruptcy states. And managers, who are supposed to act in the shareholders' interest, should run the risk to lose their jobs in case of bankruptcy. As a consequence, punishing managers for their errors has two opposite effects. On the one side, it preserves the bonding role of debt. On the other side, it creates strong incentives to delay bankruptcy filing (with the risk to reduce the bankrupt firm's value).

Finally, the crucial difficulty that Hart (2000) identifies at the time of bankruptcy, is the lack of information on the bankrupt firm's value. For instance, consider the moment when either the court or the stakeholders have to choose between rival issues to resolve financial distress (continuation or liquidation): the more accurate information they have, the lower is the risk of making filtering errors. Generally, information disclosure is facilitated through the implementation of audit procedures under the supervision of the Court[4]. Such costly state verification process is similar to the one described by Townsend (1979) and Gale and Hellwig (1985) regarding the theoretical justification of standard debt contracts. Such a breach of confidentiality is justified as the debtor's financial commitments have not been fulfilled and the creditors might not receive their contractual payments. But, we note that it might generate some discrediting effects leading to the disengagement of key partners and/or to losses of investment opportunities (Sutton and Callahan, 1987).

In this paper, we originally propose to test whether the characteristics of bankruptcy law depicted above may affect our measure of performance of bankruptcy law: the global recovery rate. Indeed, we consider that the percentage of debt that all the claimholders recover at the end of either reorganization or liquidation, is an acceptable proxy for the capacity of bankruptcy procedures to preserve/increase financially distressed firm's value. By doing this, we follow the methodology used by Armour, Hsu, and Walters (2008) and Davydenko and Franks (2008)[5]. In our empirical study, we encompass two countries that belong to the two main legal systems prevailing in Europe: France (civil law) and United Kingdom (common law). We note that in previous European studies dealing with creditor recoveries (see Davydenko and Franks, 2008), there were no legal indexes accounting for the characteristics of bankruptcy law. As a consequence, researchers could only observe differences between various legal environments of bankruptcy, but they failed to comprehend how the legal characteristics impact on creditor recoveries and by this way, how they may perform to maximize the post bankruptcy firm's value. In other words, these studies could answer the following question: "are recoveries higher/lower due to the design of its bankruptcy law or to external factors?" Yet, they were unable to address the following ones: "what are the characteristics of bankruptcy procedures that create more recoveries?"; "are these characteristics linked to the production of information taking place under bankruptcy or to the protection conferred to assets after the triggering or to the coordination mechanisms that are implemented to make a collective choice?", etc…

The rest of the article is organized as follows. Section 1 describes the methodology we use to build legal indexes on corporate bankruptcy law. Section 2 presents the French and UK bankruptcy

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[4] In France, an administrator in charge of the bankrupt company has 20 months to write and forward a report ("*bilan économique et social*") to the Court. This report contains detailed information on (1) the causes of default, (2) the market value of the assets, (3) the number of creditors and the value of their value of the claims, (3) the buyout proposal(s) (if any), (4) an assessment of the chances of recovery…

[5] There are some other ways to measure whether courts (or stakeholders themselves) make the right decision on the future of the firm. In particular, Fisher and Martel (2004) propose to evaluate the risk of type 2 selection errors, meaning the risk that creditors reorganize bankrupt firms whose liquidation were more desirable.

codes. Section 3 uses our legal indexes to compare both legislations. Section 4 presents our dataset on recoveries in France and in UK. Section 5 discusses the results of regression models using legal indexes to explain the total recovery rate in both countries. The last section concludes.

1. LEGAL INDEXES ON BANKRUPTCY LAW

In the introductive part, we have identified 7 means to ensure that bankruptcy filings may be an adequate way to increase/preserve bankrupt firm's value to divide among all claimholders. These 7 "dimensions" of bankruptcy law are (1) the coordination of claimholders' actions, (2) the protection of assets, (3) the decision process, (4) the accessibility of the bankruptcy procedure, (5) the production of information, (6) the absolute priority rule, and (7) the sanction of faulty management, controlling with the direct bankruptcy costs. For every dimension, we build a composite indicator[6]. Each is based on information provided by 13 national experts in bankruptcy law, being either academics or practitioners in their country (three academics and four bankruptcy practitioners in France, two academics and four bankruptcy practitioners in UK). Experts were involved in the production of the legal indexes (by filling/checking the templates), and/or in the analysis of the bankruptcy files. They were required to answer a set of 132 "yes-no" questions regarding the content of corporate bankruptcy law (see the complete list of questions in Appendix A1). We run an anonymous double-checking process on the experts' answers. This overall process took place between March 2006 and November 2010.

This approach differs from previous studies dealing with the use/creation of legal indicators on bankruptcy law at twofold (La Porta *et al.*, 1997, 1998). First, while the previous studies stay at the country-level only, we build here one set of indexes per bankruptcy procedure. We thus account for the fact that several procedures (whose purpose differs) may prevail in the same country. In UK, we explore four procedures: (1) administration, (2) receivership, (3) compulsory liquidation, and (4) creditor voluntary liquidation. In France, we split our sample between (1) liquidation procedure ("*liquidation judiciaire*"), and (2) reorganization procedure ("*redressement judiciaire*"). Second, we consider several classes of claimholders (and not only the secured creditors, see Davydenko and Franks, 2008) which are clearly not equally protected under each bankruptcy regime (and each procedure either). More precisely, we isolate here classes of creditors: (1) the employees, (2) the State, (3) the fixed secured creditors[7], (4) the floating secured creditors[8], and (5) the unsecured creditors.

We describe below our seven legal indicators (one per dimension). To account for coordination efforts at the time of bankruptcy filing, we compute, for each class of creditors, an indicator composed of 5 binary indexes. Each index equals one (and zero otherwise) whenever the answer to the corresponding question (see Appendix A1) is "yes", which represents an improvement in the coordination of claimholders. For instance, when answering "yes" to the sentence "*there is a stay of claims*" or "*a legal mandatory represents them*" means that the procedure facilitates/improves

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[6] Our methodology aims at reducing the heterogeneity of the binary indexes that are aggregated for the computation of composite indicators. In our view, considering bankruptcy law as a homogenous corpus of legal rules is unsatisfactory, and aggregating these rules altogether to obtain an average ranking is even more misleading. Precisely, we use our finite set of 7 dimensions attached to corporate bankruptcy law so that each one can be considered as a linear combination of binary indexes. Thus, their aggregation is acceptable provided it is performed within each identified dimension.

[7] Creditors having collateral(s) on a specific asset of the firm (fixed charge).

[8] Creditors having collateral(s) on the total assets of the firm (floating charge).

creditors' coordination regarding this criterion. Next, we name the resulting indicators (in percentage; the brackets indicate the type of claimholder) "COORD_EMPL" (employees), "COORD_STATE" (the State), "COORD_FIXEDSEC", (fixed secured creditors), "COORD_FLOATSEC", (floating secured creditors), and "COORD_UNSEC", (unsecured creditors).

Further, we build another set of 10 binary indexes (yes/no questions) to test whether and how legal rules may increase and/or facilitate the protection of the debtor's assets under bankruptcy. Their aggregation leads to the composite indicator named "PROTECT_ASSETS" (its value is given in percentage).

To account for the decision process taking place at the end of the procedure, we develop several aggregated indicators (in percentage) that were computed for each class of claimholder: "DECISION_EMPL", (employees), "DECISION_STATE", (the State), "DECISION_FIXEDSEC" (fixed secured), "DECISION_FLOATSEC", (floating secured), "DECISION_UNSEC" (unsecured). More precisely, each indicator is composed of 5 binary indexes. Anew, each index equals one (and zero otherwise) whenever the answer to the corresponding question is "yes", which represents an improvement in their decision making power under bankruptcy.

The indicator "ACCESSIBILITY" (bounded between 0 and 20, and rescaled into percentage) measures how well each bankruptcy procedure is accessible. It depends on 20 binary indexes related to (1) the triggering criteria related to the value of assets, (2) the types of difficulties that justify the opening of a procedure, (3) the stakeholders who are allowed to trigger the procedure, and (4) the creditors' opposition rights to the triggering. Anew, the "yes/no" questions are labelled so that the binary indexes take a strict positive value provided the answer reflects an increase in accessibility.

Now, to account for the production of public information under each bankruptcy procedure, we consider 11 binary indexes related to confidentiality, information and warning rights of the various creditors, audit procedures, and forecast accounting. The resulting composite index is rescaled in percentage and named "INFORMATION".

Further, to measure the degree to which APR applies or not, we study the creditors' ability to (i) obtain additional payments outside of bankruptcy, and (ii) escape debt reduction and/or extended delays. The resulting composite indicators (in percentage) are named, for each class of claimholders: "PROTECT_EMPL" (employees), "PROTECT_STATE" (the State), "PROTECT_FIXEDSEC" (fixed secured creditors), "PROTECT_FLOATSEC" (floating secured creditors), and "PROTECT_UNSEC" (unsecured creditors). And these indicators take higher value when the considered class of claimant is more protected by the Law.

To capture the importance of the sanctions of faulty management, we consider 5 binary variables accounting for the ways to supplant – or at least to control – the faulty and incompetent managers. We also consider the various sanctions that might be pronounced against them (obligation to personally repay the creditors, deprivation of the right to start a new business, fines, imprisonment…). The resulting composite indicator (in percentage) is named "SANCTION".

Finally, we control the capacity of these bankruptcy rules/characteristics to have an impact on global recoveries with the amount of direct bankruptcy costs. Indeed, such costs are eventually borne by the already distressed firm, reducing by the way the global recovery rate. Even if we provide later in the paper some estimates of these costs in France and in UK, we do not primarily aim to measure them within the scope of our building legal indexes. We rather identify in the law the elements which

are related to these costs (to do so, we build six binary indexes, whose aggregation result in the composite index "COSTLY_PROC" (in percentage)). For instance, we consider that these costs should be higher *ceteris paribus*, if a *numerus clausus* limits the number of bankruptcy practitioners who are allowed to operate in the market. Such a limitation prevails in France so that liquidators and administrators do not work under perfect competition. The resulting effect should be an overpricing of bankruptcy files.

2. OVERVIEW OF THE FRENCH AND UK BANKRUPTCY LAWS

In this section, we present the six main corporate bankruptcy procedures prevailing in France ("*Loi sur le redressement judiciaire des entreprises en difficultés*", 1994) and in United Kingdom (*Insolvency Act*, 1986, and *Enterprise Act*, 2002). Indeed, both countries offer a menu of procedures to the stakeholders, depending on the debtor's situation, the types of claims, and the perspectives of recovery. Their analysis shows strong differences that should be reflected in our indexes, and which are likely to impact on the creditors' recoveries.

2.1. French bankruptcy law

Since the 25th January 1985, the French bankruptcy code settled two procedures dedicated to reorganization ("*redressement judiciaire*") or to liquidation ("*liquidation judiciaire*"), with an explicit priority given to reorganization over liquidation[9]. Precisely, the 1st article of the 1985 French code ranks first the continuation of business, second the protection of employment, and third the repayment of creditors. On 10th June 1994, the 1985 legislation was slightly reformed on the following points. First, the secured creditors now benefited from a higher rank in the absolute priority rule (APR) in case of liquidation. Second, prevention was strengthened after 1994. The triggering of "*redressement judiciaire*" or "*liquidation judiciaire*" relies on the same criterion: when the value of liquid assets is less than due debts, the firm has to enter into the procedure rapidly (within 15 days[10]). Once the debtor enters the procedure, an observation period ("*période d'observation*") begins and lasts up to 20 months in order to assess the chances of recovery. Owing to this specificity, the French procedure provides additional time to elaborate a reorganization plan (if possible). Contrastingly, liquidation is the default solution, most of them being decided immediately by the Court when the chances of recovery are obviously minimal. During this observation period, there is a stay of claims. The manager of the bankrupt firm might stay in place with the help of an administrator (in the worst cases, (s)he replaces the manager). Meanwhile, a creditors' representative ("*représentant des créanciers*") is appointed to check the claims and the remaining assets. In case of liquidation, (s)he becomes the liquidator ("*mandataire liquidateur*") of the firm. During the observation period, the bankrupt firm has to keep on running the business: first, the maintenance of the previous contracts might be enforced, and, second, the new creditors (i.e. new money claims) are granted a higher position in the APR in case of liquidation. More crucially, the final decision lies in the hands of the Court that decides either

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[9] More recently, in 2005, bankruptcy law was reformed ("*loi de sauvegarde*", 26th July 2005): the 1985 original structure (and its hierarchy of objectives) has not changed but a new procedure ("*sauvegarde*") is added to the previously ones. This new procedures is close to "*redressement judiciaire*" but is dedicated to solvent firms that face difficulties. This reform is too recent to have reliable information on its macroeconomic impact. We thus restrict our research to the 1994 legal framework.

[10] This delay is extended to 45 days since 2005.

to piecemeal liquidate the firm (i.e. the procedure becomes "*liquidation judiciaire*") or to continue business via a sale[11] or a reorganization plan (i.e. the procedure becomes "*redressement judiciaire*"). According to the *Observatoire Consulaire des Entreprises en Difficultés*, bankrupt firms are liquidated (respectively continued) in 95% (resp. 5%) of the cases. Hence, creditors do not vote or play a significant role in the decision-making process. Such court-administered decision process might temper coordination problems between the creditors, but it might also generate inefficiencies if the Court's objectives systematically prioritize continuation over liquidation. Finally, the APR is quite specific in France: especially, the last (2 months) unpaid wages benefit from a "*superprivilège*": whatever the outcome, they are repaid first. Regarding the other due claims, they are repaid successively following a specific priority order depending on the final outcome.

In case of liquidation (and/or sale), the liquidation proceeds (and/or the sale price) is the basis for the creditors' repayment. The APR is (from the highest to lowest rank): "*superprivilège*" claims, bankruptcy costs, new money claims, preferential and secured claims, and last, unsecured claims. In case of reorganization, all the creditors must be repaid equally. The continuation plan states the extended delays (limited to 10 years) and the debt reductions (if any).

2.2. UK bankruptcy law

Until 2002, the UK corporate insolvency was ruled by the *Insolvency Act* of 1986. In 2002, it was reformed by the *Enterprise Act* that came into force in September, 2003. Among other important changes, this recent reform incorporated an additional objective: "to facilitate company rescue" (in addition to "produce better returns for creditors"). In UK, the stakeholders are offered a menu of procedures: liquidation (85% of cases according to *London Gazette*), administration (5%), and receivership (10%). The latter procedure does not prevail anymore since 2003. Indeed, receivership had been increasingly considered as an inefficient procedure favouring too much liquidation (Armour and Mokal, 2005, and formerly, Aghion, Hart, and Moore, 1992). In addition, a fourth procedure (CVA, for company voluntary arrangement) exists which aims to ease informal renegotiation under the court's supervision. Yet, this latter procedure is not a bankruptcy procedure: it is closer to a workout and does not require default as a prerequisite for initiation.

Let us begin our discussion in detail, with the first procedure: liquidation. As in France, this is the most common outcome (even more frequent). There are 3 types of liquidation procedures: compulsory liquidation (CL), creditor voluntary liquidation (CVL), and member voluntary liquidation (MVL). CL prevails under a rather large set of circumstances: illiquidity, future financial difficulties, no business for more than 1 year, and/or less than 2 associates in the business. Petition for CL can be presented either by the creditors or by the debtor. As can be interpreted literally, second and third types of liquidations are be triggered voluntarily. CVL takes place when the debtor decides to liquidate the firm, as (s)he cannot repay the firm's debts anymore and has become insolvent[12]. MVL happens when the shareholders convene to liquidate: at this point, the firm has sufficient assets to pay off its liabilities and the creditors do not need to be notified. Thus, we exclude MVL from the analysis as it has nothing to do with default companies. For each procedure, a liquidator is appointed. Most creditors are subjected to automatic stay of their claims. However, some secured creditors might be exempt

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[11] In France, sale was viewed as a way of continuation until 2005. Since then, it is assimilated to liquidation.
[12] It is noteworthy that, despite its misleading name, CVL cannot be initiated by the creditors.

from it. The liquidation ends with piecemeal liquidation or sale as a going concern[13]. Once the liquidation process is terminated, the following APR applies: first, the bankruptcy costs, second and third the secured and preferential creditors, fourth the unsecured creditors.

The second procedure is administration, which is a way to reorganize the firm, or to prepare a CVA with its creditors, or to plan liquidation. An administrator is appointed by the court: (s)he replaces the manager(s) and has the duty to protect all the interests at stake (debtor's and creditors'). The individual pursuits are suspended during administration. The procedure can be triggered by the debtor or by the creditors. Two conditions are needed to enter administration: first, the company should be illiquid (or insolvent), and second, the administrator's mission should be reachable. Eventually, the administrator prepares either a reorganization plan (8% of cases, according to Homan, 1989), or prepare a CVA (11%), or organize liquidation (45% as piecemeal liquidation and 36% as sale as a going concern). In case of reorganization, the administration ends with the vote of the creditors who either endorse or reject the plan. Consequently, the creditors are not passive in the decision-making process (even if they remain under the supervision of the court that might impose another solution if the plan is rejected by them).

The third procedure is receivership. It is the most specific one. It had been applicable until 2003 but was abolished thereafter. It is not a mere collective procedure. Indeed, it gives the secured creditors in possession of a *floating charge* (the appointer) the right to appoint a receiver, whose mission is to prioritize and protect the appointer's interests. Consequently, receivership often leads to liquidation. Under receivership, the APR ranks decreasingly secured and preferential creditors, floating charges, liquidator's fees (if receivership leads to liquidation), and junior creditors. Receivership was suspected to be a costly procedure undermining recoveries, as the receiver has no incentives to manage the procedure in the unsecured creditors' interests (Armour, Hsu, Walters, 2008).

3. USING LEGAL INDEXES TO COMPARE FRANCE AND UK

We now use the legal indexes presented in section 2 to analyze the six procedures prevailing in France ("*redressement judiciaire*", "*liquidation judiciaire*") and UK (administration, receivership, compulsory liquidation, voluntary liquidation). We first turn to univariate statistics reported in tables 1a and 1b.

Table 1a. Legal indexes on the French and UK bankruptcy procedures (part 1/2)

	Accessibility of the procedure	Production of public information	Protection of the debtor's assets	Sanction of faulty management
French "redressement judiciaire" (1994)	55%	82%	100%	100%
French "liquidation judiciaire" (1994)	55%	82%	90%	100%
UK Receivership	50%	100%	50%	40%
UK Administration	65%	100%	60%	60%
UK Compulsory liquidation	45%	91%	80%	100%
UK Voluntary liquidation	45%	91%	80%	100%

Note – Columns 1 to 4 respectively show the values of indexes ACCESSIBILITY, INFORMATION, PROTECT_ASSETS, SANCTION.

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[13] Contrary to the French case (until 2005), sale is considered as a way of liquidation.

Table 1b. Legal indexes on the French and UK bankruptcy procedures (part 2/2)

	Employees			State			Fixed Secured Claims			Floating Secured Claims			Unsecured Claims		
	Protec-tion	Coordi-nation	Decision power	Protec-tion	Coordi-nation	Decision power	Protec-tion	Coordi-nation	Decision power	Protec-tion	Coordi-nation	Decision power	Protec-tion	Coordi-nation	Decision power
French "redressement judiciaire" (1994)	100%	60%	20%	33%	100%	40%	67%	80%	20%	50%	80%	20%	33%	80%	20%
French "liquidation judiciaire" (1994)	100%	60%	0%	33%	80%	20%	67%	80%	0%	50%	80%	0%	67%	80%	0%
UK Receivership	67%	60%	20%	50%	60%	20%	100%	20%	60%	83%	60%	80%	50%	60%	20%
UK Administration	50%	80%	40%	33%	80%	40%	83%	80%	40%	33%	80%	40%	17%	80%	40%
UK Compulsory liquidation	17%	60%	20%	17%	60%	20%	100%	20%	40%	67%	0%	40%	17%	80%	20%
UK Voluntary liquidation	17%	60%	20%	17%	60%	20%	100%	20%	40%	67%	0%	20%	17%	80%	40%

Note – For each category of creditor, 3 columns are displayed and respectively show the values of indexes PROTECT, COORD, DECISION.

In Table 1a, the legal indexes for French procedures take almost similar values. It means that they share several features in common: especially the way they are triggered and managed. On the contrary, UK procedures are quite more different in their characteristics. The UK administration is the most accessible procedure, when compared to the others (especially the UK liquidation procedures). Further, concerning public information disclosure, we observe that the INFORMATION index shows rather high values in both countries (more than 80%). Yet, the UK procedures show higher values than in France. Thus, on the one hand, the creditors seem more protected in UK as they benefit from a more transparent legal environment. But, on the other hand, the debtor might suffer from lack of confidentiality and incur opportunity costs. Turning now to the index PROTECT_ASSETS, we observe that the French procedures protect more the firm's assets than the UK ones (especially the UK receivership). Overall, it is worth stressing that the various procedures do not equally protect the firm's assets. As a consequence, it should generate significant differences in the global recovery rates. Concerning the SANCTION index, the French procedures and the UK liquidation procedures are the most severe ones against faulty managers[14].

Now, table 1b shows, for each type of creditor, the values of the legal indexes accounting for PROTECTION, COORDINATION and DECISION. The analysis confirms that the French legislation is more protective of the employees' interests and prioritizes social goals. This finding is coherent with the ranking of objectives, as stated by the 1st article of the 1985/1994 French bankruptcy law. At the opposite, in UK, the (fixed or floating) secured creditors are relatively more protected under receivership, compulsory liquidation, and voluntary liquidation. As most of the secured creditors are banks, one can predict that such orientation of the UK law might generate higher recovery for the banks (Davydenko and Franks, 2008). The scenario changes however with respect to unsecured claims: the UK bankruptcy procedures (except receivership) show quite low protection indexes for them. On the contrary, unsecured creditors seem more protected in France, especially against delays and debt reduction. As most of the unsecured creditors are suppliers (*i.e.* other companies), our findings are coherent with the orientation of the French legislation prioritizing the protection of business. Now, when considering coordination in UK, we find that liquidation procedures do not provide strong coordination tools to the secured creditors. This contrasts with the situation of the other

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[14] Let us remind that we focus on the content of the law only, and not on the way the law is enforced. Especially, a procedure might contain lots of chapters dealing with sanction, but such sanctions might not be effective if the courts are clement towards managers.

creditors (employees, State and public claims, unsecured creditors) who benefit from more efforts of coordination, whatever the procedure. In France, the coordination indexes are quite strong and balanced. So, all the classes of claimholders benefit from a comparable level of coordination. Finally, we turn to the indexes relative to decision. Here, the situation of France contrasts with UK. The lowest values for decision are observed for "*redressement judiciaire*" and "*liquidation judiciaire*". We consider that it is the consequence of the absence of voting procedures in France: the final decision lies in the hands of the Court, so that the decision power of creditors is minimized.

The previous univariate analysis does not capture the combined effects of the indicators altogether. We then turn to multivariate approach and perform principal component analysis (PCA) on the legal indexes to draw a mapping of the six procedures (see Graph 1). Our model explains 72% of the initial inertia: the first axis (43% of inertia) mainly opposes the French and UK procedures, and the second axis (29%) mainly opposes liquidation against reorganization procedures. Each arrow shows a direction indicated by a particular procedure. Interpretation of the PCA mapping is straightforward: a legal index takes higher value (respectively lower) for the procedure(s) that indicate(s) a location close to them. For instance, the indicators COORD_UNSEC, PROTECT_UNSEC and PROTECT_ASSETS *altogether* take relatively higher values for French "*liquidation judiciaire*" than for other procedures, mainly the UK ones.

Graph 1: Mapping of the French and UK bankruptcy procedures (component analysis)
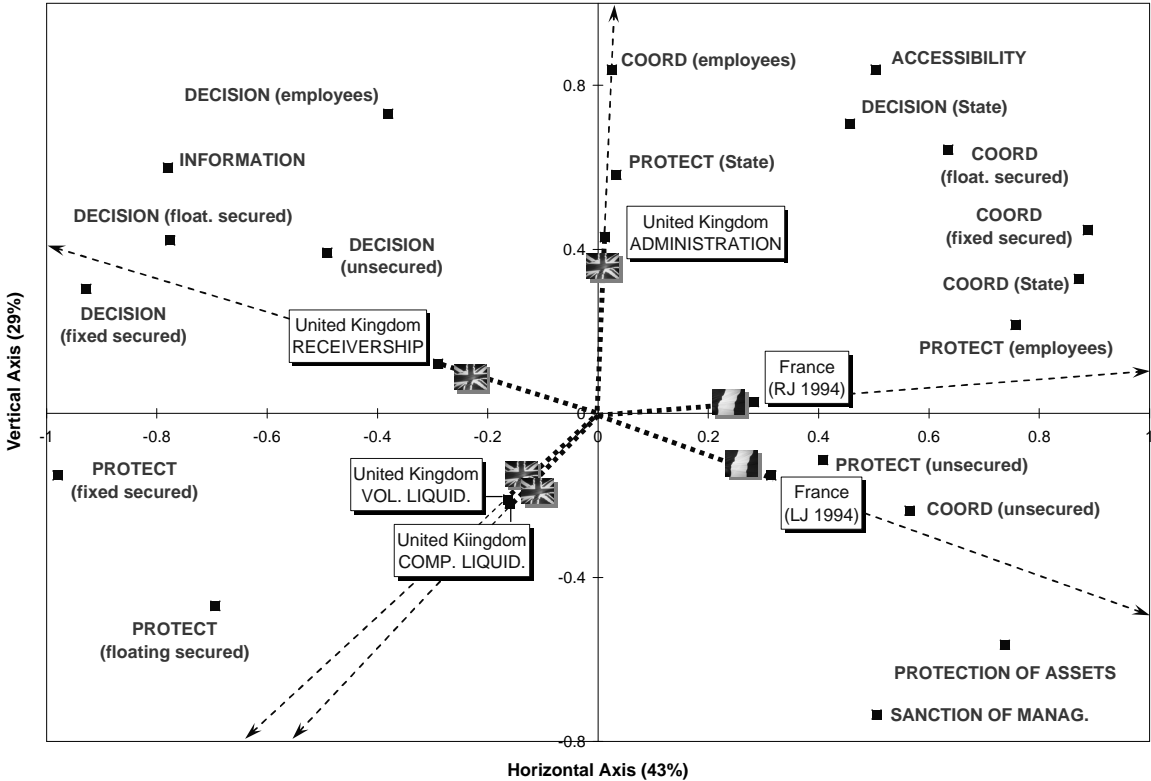
From Graph 1, we report several results. First, UK administration appears relatively accessible to all the stakeholders, and exhibits several differences with receivership. Administration gives the

decision power to public claims and employees' claims, whereas receivership provides more decision power to the secured creditors. This is a natural consequence of the bank-friendly inclination of receivership. Yet, interestingly enough, this procedure remains transparent to all the stakeholders as it shows a high INFORMATION index that makes it comparable to administration. In that view, receivership is actually a collective procedure as it shares information beyond the sole appointer's interests. Last, (compulsory and voluntary) liquidation procedures are quite close to each other. They show higher SANCTION indexes than the other UK procedures. In addition, they provide more protection to the secured claims (fixed and floating). This inclination towards the secured-creditors' interests has a cost, as it exhibits a poor level of protection for the employees, the public claims, and the unsecured creditors. This might have an impact on *ex-post* performance: some of the creditors cannot get secured either because their bargaining power is low outside bankruptcy (employees), or because they can hardly take collaterals to protect their claims (trade creditors).

French bankruptcy law also shows interesting characteristics. First, the coordination of secured claims, public claims, and unsecured claims is higher in France than is in UK (this is less true for the employees). Yet, these stronger coordination mechanisms are compensated by weaker decision mechanisms. Thus, entering the French procedures has two opposite effects (that might impact on the incentives to trigger bankruptcy): on the one hand, the creditors benefit from good coordination that should reduce the common pool problem, but on the other hand, they are excluded from the final choice that finally affects their recoveries. In addition, the French procedures are characterized by a stronger protection of the debtor's assets. This is a core aspect of the French legislation that has been prioritizing prevention and post-default conservatory measures that aim to preserve the firm's assets and, consequently, the chances of reorganization.

We now test whether these differences are sufficient to explain (or not) the differences in the recovery rates for each bankruptcy procedure. We then need to use an additional set of data coming from bankruptcy files in France and in UK. This is the purpose of the next section.

4. BANKRUPTCY LAW AND GLOBAL RECOVERIES

To explore the capacity of bankruptcy law to maximize bankrupt firm's value at the time of the bankruptcy filing, we use as proxy the global recovery rate. *Ceteris paribus*, a higher firm's value should generate more recoveries. Then, we regress this ratio to legal composite indicators accounting for each dimension of bankruptcy law depicted in section 1. We run such empirical analysis for a dataset of 833 small and medium bankrupt firms in UK and France.

4.1. Sample and data

Data were manually collected from bankruptcy files for the period 1993-2005 for France, and for the period 1998-2005 for the UK (see appendix A2 for time repartition of samples). The data on France were collected at the Commercial Court of Paris (*Tribunal de Commerce de Paris*). As the French bankruptcy procedure is mainly carried out under the supervision of the court, data might not fully reflect the countrywide application of the bankruptcy code. Additionally, local conditions might have some influence on reorganization decisions. However, we assume that this potential geographic

bias is marginal when compared to the international differences that our study focuses on. Further, the bankrupt firms were identified using the BODACC that records each new bankruptcy judgement[15]. English data were collected from the Companies House web-database (Insolvency Service). This database collects the main documents of the bankrupt firms located in Greater London, Yorkshire, North, North West, East Midlands, East Anglia, Rest of South East, South West, West Midlands, Wales and Scotland. The bankrupt firms were identified using the bankruptcy filings announcements published in the *London Gazette*. Despite some formal differences, the bankruptcy files in both countries contain similar information, which allowed us to collect data using a common template (see appendix A4). The main available data are: (1) identification of firm (age, legal form, sector, number of employees, part of a group, duration of the procedure); (2) the cause(s) of default (these causes were coded into 51 dummies which were further classified into 7 groups: outlets, strategy, production, finance, management, accident, and macroeconomic environment: see appendix A3); (3) the coverage rates (i.e. the market value of assets divided by the due debts); (4) the estimated value of assets at the time of bankruptcy; (5) the amounts recovered by the creditors; (6) the direct bankruptcy costs.

Our dataset has the following breakdown for the six bankruptcy paths: 164 French "*redressements judiciaires*", 100 "*liquidations judiciaires*" (excluding sales as a going concern), 199 UK administrations, 198 receiverships, 100 compulsory liquidations, and 72 voluntary liquidations. Such distribution of the sample does not reflect the actual distribution between procedures in each country. Indeed, in order to have robust estimates in the subsequent analyses, we need to use a sufficiently high number of observations *for every procedure*. However, if we had the same structure as the national one, the samples would have exhibited excessive imbalance towards liquidation. Yet, to rebuild the original national structure, our estimations weight the observations by using each country's actual repartition of procedures for the given period.

Appendix A2 gathers descriptive statistics on both samples, which are made of young SMEs. The average firm's age lies between 8 and 17 years for both the countries (the liquidated firms being younger than the others). The bulk of the sample is made of limited liability companies (on an average ranging between 90% – 100%). In France, most of the firms do not belong to a group (more than 90% of them), while this figure is in contrast with the percentages applicable to UK firms where 23% and 28% of the companies entering administration (resp. receivership) are a part of group. On the other side, all the firms being liquidated in UK do not belong to a group. We last consider the market value[16] of assets at triggering. The French figures look similar between both the procedures: the most important accounts, in percentage of total assets, are receivables (from 23% to 36%), tangible assets (around 25%), intangible assets (around 13%), and cash (less than 7%). The UK figures are quite different: receivables account for more than 36% (to 44%) of the total assets. Finally, the firms which end up in liquidation show high values of cash (from 27% to 38%) which is in contrast with the administration and receivership files (less than 5%). The latter files show higher values of tangible assets (around 40%).

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[15] BODACC is for *Bulletin Officiel des Annonces Civiles et Commerciales*. For France, the use of external databases over the period makes it possible to identify the companies whose reorganization plan failed or ended successfully: we observe that 89% of plans are successful. If the reorganized company defaults again, subsequent failure signifies that future recoveries are expected to be null. For the other successful plans, we discount the future recoveries using the French Treasury term structure. For UK, we do not observe reorganization plan as the entire files end either in piecemeal liquidation or sale.

[16] This is the estimated value from the administrator's or the manager's point of view. We additionally have the final checked value of the assets that enters in the computation of the recovery rates.

4.2. Descriptive statistics on recovery rates

Now, as the various bankruptcy procedures differ considerably in their scope and their rules, we focus on their effects on the creditors' recovery rate, considered as a proxy of the performance of bankruptcy law. Table 2 shows the recovery rates for each type of procedure and for each class of creditors.

Table 2: Recovery rates, coverage rate, and structure of claims

Variables	France		United Kingdom			
	Redressement judiciaire (incl. sales)	Liquidation judiciaire (excl. sales)	Administration	Receivership	Compulsory liquidation	Voluntary liquidation
Sample size	*164*	*100*	*199*	*198*	*100*	*72*
Recovery rate (total)	**45.8%**	**19.6%**	**20.5%**	**29.7%**	**8.6%**	**12.9%**
Recovery rate (junior)	38.2%	3.1%	3.5%	1.6%	7.7%	4.3%
Recovery rate (preferential)	56.9%	30.8%	42.0%	31.2%	17.2%	18.7%
Recovery rate (secured)	51.9%	40.3%	38.7%	43.7%	16.2%	25.3%
Recovery rate (new money)	62.6%	27.3%	98.7%	100.0%	n.s.	100.0%
Coverage rate	66.7%	46.4%	31.8%	35.8%	15.4%	20.8%
Due claims (amount in K€)	1743	760	1788	3390	283	658
% of junior due claims	45.9%	32.9%	53.6%	35.6%	91.0%	69.5%
% of preferential due claims	33.9%	55.8%	0.7%	5.7%	3.8%	10.3%
% of secured due claims	15.2%	7.6%	31.6%	45.8%	5.1%	10.6%
% of new money claims	2.3%	0.7%	6.1%	7.6%	0.0%	4.2%
% of bankruptcy costs	2.7%	3.1%	8.0%	5.3%	0.1%	5.4%
Duration of the procedure (in months)	11.6	3.1	19.4	38.9	26.4	35.5

The total recovery rate shows significant differences between the procedures. The higher value (46%) is observed for the French "*redressement judiciaire*". Then, come receiverships (30%), administrations (21%), and liquidation procedures. It is noteworthy that UK liquidations show poor total recovery rates (9% for compulsory liquidation, 13% for voluntary liquidation). These figures are in contrast with the higher rate for French liquidations (20%). So, how to explain such differences between the countries? Does the design of bankruptcy law matter? If yes, which features increase (or not) the total recovery rate? To answer these questions, we consider several explanatory factors.

Firstly, the recovery rate mechanically depends on the situation of the firm at triggering, and more precisely, on the value of its assets. To capture this effect, we use the coverage rate which measures the value of assets (at triggering) divided by the total due amounts. We observe in the sample that the coverage rate takes higher values in France (67% for "*redressements judiciaires*" and 46% for "*liquidations judiciaires*"). Thus the French bankrupt firms are in relative better shape when they enter the procedure than the UK ones.

Secondly, the structure of claims (secured, unsecured, new money…) might impact on the total recovery rate. Especially, one can expect the secured creditors to monitor the debtor more as compared to the unsecured ones. In addition, the more secured the assets are, the less value they should loose, as collateralized assets cannot be sold as easily as uncollateralized ones. Table 2 shows the weight of each class of creditors in percentage of total due claims. We observe that the part of junior claims is generally lower in France (between 33% and 46%) as compared to UK. Especially,

UK liquidations show the highest share of junior creditors (between 70% and 91%). On the contrary, the French claims are mainly owned by preferential creditors (between 34% to 56%). This mainly reflects the protection of social claims (employees) and of public claims (State) that benefit from numerous privileges ("*superprivilège des salariés*", "*privilège general des salariés et des créances publiques*"). The share of secured creditors (mainly banks) is on an average higher in UK (especially for administration (32%) and for receivership (46%)) than in France (less than 15%).

Thirdly, the differences in total recovery rates might reflect differences in bankruptcy costs. The share of direct bankruptcy costs differs from one procedure to another. To measure this, Table 2 discloses the percentage of direct bankruptcy fees out of the total claims. The most expensive procedures are administrations (8.0%), voluntary liquidations (5.4%) and receiverships (5.3%). The less expensive ones are "*liquidations judiciaires*" (3.1%), "*redressements judiciaires*" (2.7%), and compulsory liquidations (0.1%). We additionally compute the duration of the procedure. Indeed, as previously suggested by White (1989), duration can be viewed as a proxy of cost of the procedure, or the complexity of the case, or the attempts to keep the firm alive and in view of this, the delay evidently suggests attempts of renegotiation. However, it can also be a proxy of lengthy court and administrative procedures demanding a series of formalities to be fulfilled at the time of trigger or at the time the firm is finally being dissolved. In our sample, we observe differences in the durations across countries. France shows the fastest procedures (less than one year on average). [17]

Fourthly, once the three first effects (coverage rate, structure of claims, bankruptcy costs) have been accounted for, we consider that the fourth explanation of the differences between the total recovery rates can be attributed to the effects of the Law. In other terms, we first have to control for these three first effects (plus some other environmental variables). Then, if significant difference between the total recovery rates remains, this should reflect some differences in the design of the procedure that might be more or less efficient in generating recoveries. To capture such effects, we have to switch from univariate approach to multivariate analysis and regressions. This is the purpose of the last section.

4.3. Regression analysis

We use regression analysis to test the variables that explain the global recovery rate on both countries. We split between control variables and test variables, the latter being related to the procedures and to the legal indexes.

Several control variables enter the model. First, we use the coverage rate to control for the quality of the assets at triggering. Second, to control for the structure of claims, we compute the percentage of secured claims, which mainly represents the weight of bankers' claims. Third, we control for bankruptcy costs, and mainly the indirect ones[18] through the excess duration[19] of the procedure. Fourth, we control for the causes of default: for each category (strategy, production,

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[17] However, the two countries differ in their practices and there can be a considerable delay before the case is closed from an economic point of view and the formal closing by a court. So, we consider the time necessary for creditors (or a court) to make a decision on the outcome of the procedure.

[18] Direct costs are already taken into account in the analysis as the total recovery rate is net of such costs.

[19] The duration itself is a misleading indicator as it is strongly related to the procedure: it is more relevant to use the duration in excess. Indeed, for each procedure, some files are more complex or difficult to deal with, so that they last longer than the average duration. Thus, for each file, we compute the difference between the duration of such file and the average duration that is observed on all the files belonging to the same procedure (in log)

finance, management, accident, outlets, macro.), we built a dummy variable equal to 1 if a cause related to such category was mentioned in the bankruptcy file (and 0 elsewhere). Fifth, we control for a set of variable accounting for the firm's characteristics: age (in log), limited liability (dummy variable), group belonging (dummy variable), percentage of estimated cash in the total assets, and total assets (thousands of euros, in log). Last, we control for the sector (industrial dummy) and for the macroeconomic growth (increase rate of national GDP).

Then, we test the impact of corporate bankruptcy law onto the global recovery rate (our explained variable). From this perspective, we build successive models on the entire sample including both English and French data. In the first set of models, our explanatory variables are the bankruptcy procedures themselves. So, each procedure ("*redressement judiciaire*", "*liquidation judiciaire*", administration, receivership, compulsory liquidation, and voluntary liquidation) is a dummy variable that enters into the regression equation. A positive and significant coefficient indicates that the considered procedure significantly increases (relatively to the others) the total recovery rate.

Table 3: Bankruptcy procedures as explanatory variables of the total recovery rate

Variables	Dependant variable: total recovery rate					
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Constant	0.19903*** 0.0007	0.21721*** 0.001	0.21177*** 0.0004	0.22493*** 0.0002	0.22131*** 0.0002	0.19806*** 0.0009
"Redressement judiciaire"	0.19951*** <.0001					
"Liquidation judiciaire"		-0.00203 0.9173				
Administration			-0.02955 0.3724			
Receivership				0.03023 0.3102		
Compulsory liquidation					-0.05047* 0.0615	
Voluntary liquidation						-0.0828*** 0.0054
Coverage rate	0.13017*** <.0001	0.13419*** <.0001	0.1327*** <.0001	0.13671*** <.0001	0.13576*** <.0001	0.13169*** <.0001
% of secured debts	0.25756*** <.0001	0.24323*** <.0001	0.25096*** <.0001	0.22491*** <.0001	0.23911*** <.0001	0.25*** <.0001
Duration of the procedure (relative to average)	0.00753 0.4075	0.00506 0.5857	0.00472 0.6116	0.00592 0.5252	0.00613 0.5088	0.00866 0.353
ln (age)	-0.00184 0.8028	0.0007 0.9267	0.00087 0.9082	0.00054 0.9422	0.001 0.8939	0.00182 0.8074
Limited liability	-0.16005*** 0.0005	-0.19771*** <.0001	-0.19646*** <.0001	-0.20043*** <.0001	-0.19526*** <.0001	-0.19265*** <.0001
Debtor belongs to a group	-0.09305*** 0.0014	-0.09431*** 0.0016	-0.09247*** 0.002	-0.09811*** 0.0011	-0.0943*** 0.0016	-0.10434*** 0.0005
% of estimated cash in the assets	0.04664 0.1526	0.04906 0.1621	0.05013 0.1326	0.04839 0.1471	0.07373** 0.0383	0.0515 0.1206
ln (total assets, in K€)	0.01835*** 0.0008	0.02251*** <.0001	0.02291*** <.0001	0.02126*** 0.0002	0.01961*** 0.0006	0.02157*** <.0001
Cause of default: strategy	-0.00427 0.8266	-0.00633 0.7528	-0.00521 0.7942	-0.00633 0.7509	-0.00648 0.7448	0.00204 0.9191
Cause of default: production	-0.06569*** 0.0004	-0.06494*** 0.0006	-0.06426*** 0.0007	-0.06463*** 0.0007	-0.06764*** 0.0004	-0.06111*** 0.0013
Cause of default: finance	-0.02334 0.2219	-0.02165 0.2702	-0.0209 0.2849	-0.02203 0.2596	-0.02114 0.2783	-0.01781 0.3607
Cause of default: management	0.08481*** 0.0001	0.08734*** 0.0001	0.0871*** 0.0001	0.08782*** <.0001	0.08647*** 0.0001	0.09557*** <.0001
Cause of default: accident	0.01238 0.49	0.01337 0.4804	0.01509 0.4119	0.01318 0.4723	0.01953 0.2925	0.0188 0.3051
Cause of default: outlets	0.01521 0.3625	0.01125 0.5115	0.01125 0.5098	0.01022 0.55	0.00907 0.5953	0.0206 0.2338
Cause of default: macro	0.00135 0.9362	0.00681 0.702	0.00807 0.641	0.00547 0.7527	0.00622 0.7184	0.01711 0.3299
Sector: industry	0.01756 0.2833	0.01171 0.4906	0.01278 0.4449	0.00981 0.5604	0.01612 0.338	0.01215 0.4649
Annual change in GDP	-0.94378 0.1599	-0.76997 0.2801	-0.77274 0.2601	-0.77761 0.2571	-0.42876 0.5433	-0.54845 0.424
OLS regression **Number of observations: 735**	Fisher Stat: 18.35 (prob: <.0001) Adj. R²: 0.299 Nb. of variables with VIF>2: none	Fisher Stat: 15.75 (prob: <.0001) Adj. R²: 0.266 Nb. of variables with VIF>2: none	Fisher Stat: 15.81 (prob: <.0001) Adj. R²: 0.267 Nb. of variables with VIF>2: none	Fisher Stat: 15.83 (prob: <.0001) Adj. R²: 0.267 Nb. of variables with VIF>2: none	Fisher Stat: 16.02 (prob: <.0001) Adj. R²: 0.270 Nb. of variables with VIF>2: none	Fisher Stat: 16.35 (prob: <.0001) Adj. R²: 0.274 Nb. of variables with VIF>2: none

Note – The dependent variable is the global recovery rate. Table reports coefficients with t-statistics below. *, **, *** denote an estimate significantly different from zero at the 10%, 5% or 1% level. No variable shows a VIF higher than 2.

Table 3 shows the results of OLS regression models. They are globally significant at the 1% level (Fisher stat.); the adjusted R² is satisfactory with values lying between 27% and 30%, and all our variables show an acceptable VIF factor.

When controlling for various factors (value of assets, structures of claims, origins of default, bankruptcy duration, firm's characteristics…), we confirm that bankruptcy law matters, as the total recovery rate strongly depends on the triggered procedure. More precisely, when compared to the others, we find that the French "*redressement judiciaire*" is significantly associated to a higher total recovery rate. Besides, the UK compulsory and voluntary liquidation procedures are significantly associated to lower total recovery rate. This primary result suggests that UK bankruptcy liquidation process may be suspected to generate fewer recoveries than any other bankruptcy procedures. At the same time, the French reorganization process would be the most performing legal process to maximize the recovery rate of all the claims.

This first approach is useful in identifying those procedures which are most efficient in increasing the total recovery rate. Yet, it is not sufficient to highlight precisely the legal features that play a role in generating additional recoveries. In the second set of models, we use our legal indicators as explanatory variables of the total recovery rate. Table 4 summarizes the results of our OLS regressions (see Appendix A5 for a detailed view of our regressions).

Table 4: Legal indexes as explanatory variables of the total recovery rate

Test variables: legal indexes on corporate bankruptcy law (%)			
		Coordination of claims (all claims)	Positive***
Accessiblity	Positive**	*Coordination of claims (employees)*	Non significant
Production of information	Negative**	*Coordination of claims (State, public claims)*	Positive***
Protection of debtor's assets	Positive*	*Coordination of claims (fixed secured)*	Positive**
Sanction of faulty management	Non significant	*Coordination of claims (floating secured)*	Positive***
		Coordination of claims (unsecured)	Non significant
Protection of claims (all claims)	Positive***	*Decision power (all claims)*	Non significant
Protection of claims (employees)	Positive***	*Decision power (employees)*	Non significant
Protection of claims (State, public claims)	Positive***	*Decision power (State, public claims)*	Positive***
Protection of claims (fixed secured)	Negative***	*Decision power (fixed secured)*	Non significant
Protection of claims (floating secured)	Non significant	*Decision power (floating secured)*	Non significant
Protection of claims (unsecured)	Non significant	*Decision power (unsecured)*	Non significant
Control variables (list)			
Coverage rate • Share of secured claims (in % of dues claims) • Age (log) • GDP growth • Limited liability (dummy) • Debtor is part of a group (dummy) • Value of total assets at triggering (thousands of €) • Share of cash (in % of total assets at triggering) • Cause of default: strategy (dummy) • Cause of default: production (dummy) • Cause of default: finance (dummy) • Cause of default: management (dummy) • Cause of default: accident (dummy) • Cause of default: outlets (dummy) • Cause of default: macro. (dummy) • Sector: industry (dummy) • duration of the procedure (in log, relatively to the average duration in the considered country).			

Note – The explained variable is the recovery rate. *, **, *** denote estimates significantly different from zero at the 10%, 5% or 1% level.

As expected, more accessible procedures are associated to higher claimholders' recovery rates. Further, we have assumed with Hart (2000) that the production of information may have two opposite effects on global recovery rate. On the one side, it should destroy value due to the breach in confidentiality. On the other side, producing public signals to the stakeholders should help them to make the adequate choice at the end of the process. Here, we show in the regression analysis that the

former effect over compensates the latter as our legal index relative to production of information is negatively related to total recovery rates (see INFORMATION). In other words, more information or transparency leads to lower recoveries.

Next, we confirm that providing greater protection to the bankrupt firm's assets significantly improves the total recovery rate. We find a similar result regarding both the protection and the coordination of claims (see PROTECT_CLAIMS and COORD_CLAIMS). However, this overall effect is not the same for all the classes of claimholders. We find a reversed result regarding the protection of secured claims. Our intuition of this result runs as follows. The bankruptcy procedures that provide more protection to the secured creditors (receivership for instance) would not be designed in order to increase the overall recoveries, but rather to focus on the repayment of secured creditors.

Finally, we do not find any significant effect of the creditors' decision power on the global recovery rates. We interpret this result as follows. Economic theory suggests that the final outcome should mainly depend on both the structure of claims and the creditors' interests (see the discussion in section 1). But, these data vary from a file to another. As a consequence, the decision process (either in the hands of the court, or in the hands of the various claimholders themselves) would not explain the differences in the recovery rate from one bankrupt firm to another. We can also interpret this result in a symmetric way: leaving the power to decide in the hands of a judge (as in France) should not impact too much on the total recoveries. This finding negates the common vision about the French Bankruptcy code, being suspected to be excessively debtor friendly, and in that sense could compromise the value maximization goal.

CONCLUDING REMARKS

In this paper, we focus on two complementary approaches of corporate bankruptcy law. The first approach belongs to the law and finance paradigm (La Porta *et al*., 1997, 1998). They use legal indexes on bankruptcy law to explain macroeconomic and financial development, without directly explaining whether law may explain creditors' individual recovery rates. The second approach gathers financial works testing for a ranking of countries based on their recovery rates (World Bank, 2009). The drawback of such a work is that they provide little insights into the legal characteristics that can explain their ranking.

In contrast, our approach follows Hart (2000) and proposes for the first time a complete set of legal indexes highlighting the main dimensions of corporate bankruptcy law. More precisely, we build composite indicators on six bankruptcy procedures prevailing in France and UK. We find that the French bankruptcy procedures protect more the debtor's assets, and focus rather more on the coordination of secured claims, public claims, and unsecured claims. In UK, we find a strong opposition between the procedures oriented towards liquidation and both administration and receivership, more oriented toward reorganization. On the one side, UK liquidation procedures are more severe against faulty management and provide more protection for secured claims. This inclination towards the secured-creditors' interests has a cost, as it provides less protection to employees, the State and the unsecured creditors. On the other side, we observe that (i) the decision process under UK administration involves more the employees, and (ii) secured creditors have a greater decision power under UK receivership.

In the second part of the paper, we use an original database of 833 bankruptcy files to measure the global recovery rates for each bankruptcy procedure. Following Davydenko and Franks (2008), we interpret such recoveries as a proxy of *ex-post* performance of bankruptcy law. We first show that average recovery rates strongly differ from one procedure to another. They rank, in decreasing order, as follows: French "*redressement judiciaires*" (46%), receiverships (30%), administrations (21%), French liquidation (20%), UK voluntary liquidation (13%), and compulsory liquidation (9%). We then turn to OLS regressions and use our legal indexes to isolate the potential effects of the characteristics of bankruptcy procedures on the total recovery rate, in France and in UK. By controlling for the value of assets, the structure of claims, the origins of default, and the firm characteristics, we find that (i) accessibility of the procedure, (ii) protection of the debtor's assets, and (iii) protection and coordination of claims are associated to higher recoveries. On the contrary, we find that the production of information during the bankruptcy process has a negative impact on recoveries, probably due to the breach in confidentiality. Finally, we show that greater severity towards faulty management is not significantly related to higher total recovery rates.

At this time, it is very tempting to be normative, and to address some recommendations on the rules/characteristics which increase the global recovery rate (and implicitly the firm's value). But, we have to be very careful because bankruptcy reform (or any other legal reform) includes other dimensions of the law that are not explored in this paper. For instance, one should take into account the manner that courts or judges apply the law, and more generally all the aspects of the country's legal origin (note that our two countries are good representatives of common law and civil law). Reforms in bankruptcy law must also be discussed by including some elements on the ways healthy firms are financed and on the design of the financial system. All these questions open avenues for future research.

REFERENCES

Aghion P., O. Hart, J. Moore, 1992, "The Economics of Bankruptcy Reform", *Journal of Law, Economics and Organization*, Vol. 8, n°3, pp 523-546.

Armour J., A. Hsu, A.J. Walters, 2008, "Corporate Insolvency in the United Kingdom: the Impact of the Enterprise Act 2002", *European Company and Financial Law Review*, 5, pp. 135-158.

Armour J., R.J. Mokal, 2005, "Reforming the Governance of Corporate Rescue: the Enterprise Act 2002", *Lloyd's Maritime and Commercial Law Quaterly*, pp. 28-64.

Bebchuk, L.A., 1988, "A New Approach to Corporate reorganizations", *Harvard Law Review*, 101, pp. 775-804.

Bergström C., T. Eisenberg, S. Sundgren, 2002, "Secured debt and the likelihood of reorganization", *International Review of Law and Economics*, 21, pp. 359-372.

Blazy, R., and B. Chopard, 2004, "Ex-Post Efficiency of Bankruptcy Procedures: a General Normative Framework", *International Review of Law and Economics*, 24/4, pp. 447-471.

Bulow J., J. Shoven, 1978, "The Bankruptcy Decision", *Bell Journal of Economics*, 9, pp. 436-445.

Davydenko S., J. Franks, 2008, "Do Bankruptcy Codes Matter? A Study of Defaults in France, Germany and the UK", *Journal of Finance*, 63, 2, 565-608.

Delaney K., 1999, "Strategic Bankruptcy: How Corporations and Creditors Use Chapter 11 to Their Advantage", *University of California Press*.

Fisher T., Martel J., 2004, "Empirical estimates of filtering failures in court supervised reorganization". *Journal of Empirical Legal Studies*, 1, pp. 143-164.

Fisher T., J. Martel, 2009, "An Empirical Analysis of the Firm's Reorganization Decision", *Finance*, Vol. 30, n°1, pp. 121-149.

Gale D., M. Hellwig, 1985, "Incentive-Compatible Debt Contracts: The One-Period Problem", *Review of Economic Studies*, 52(4), pp. 647-63.

Gertner R., D. Scharfstein, 1991, "A Theory of Workouts and the Effects of Reorganization Law", *Journal of Finance*, 48, pp. 1189-1221.

Gilson S., 1997, "Transactions Costs and Capital Structure Choice: Evidence from Financially Distressed Firms", *Journal of Finance*, 52, pp. 161-196.

Hart, O., 2000, "Different approaches to bankruptcy", *Harvard Institute of Economic Research Discussion Paper*, 1903.

La Porta R., F. Lopez-de-Silanes, H. Schleifer, R.W. Vishny, 1997, "Legal Determinants of External Finance", *Journal of Finance*, 52, pp. 1131-1150.

La Porta R., F. Lopez-de-Silanes, H. Schleifer, R.W. Vishny, 1998, "Law and Finance", *Journal of Political Economy*, 106, pp. 1113-1155.

Longhofer S.D., S.R. Peters, 2004, "Protection for whom? Creditor Conflicts in Bankruptcy", *American Law and Economics Review*, 6, pp. 249-284.

Lubben S., 2010, "What We 'Know' about Chapter 11 Cost is Wrong", *Seton Hall Public Law Research Paper*, n°.1718047.

Morrison E.R., 2007, "Bankruptcy decision making: an empirical study of continuation bias in small business bankruptcies", *The Journal of Law and Economics*, 50, pp. 381-419.

Povel P., 1999, "Optimal soft or tough bankruptcy procedures", *Journal of Law, Economics and Organization*, 15(13), pp. 659-684.

Sutton R., Callahan A., 1987, "The Stigma of Bankruptcy: Spoiled Organizational Image and its Management", *Academy of Management Journal*, vol 30, 3, pp. 405-435.

Townsend R., 1979, "Optimal contracts and competitive markets with costly state verification", *Journal of Economic Theory*, 21(2), pp. 265-293.

White M.J., 1989, "The Corporate Bankruptcy Decision", *Journal of Economic Perspectives*, vol.3, n°2, pp. 129-151.

World Bank, 2009, "Reforming through Difficult Times", *Doing Business Annual Report 2010*, The World Bank, Washington.

A1. *Legal indexes and binary questions (list)*

	France		United Kingdom			
	"Redressement judiciaire"	"Liquidation judiciaire"	Receivership	Administration	Compulsory liquidation	Voluntary liquidation
ACCESSIBILITY						
The triggering criteria does not require the value of the firm's assets to exceed the expected legal costs.	1	1	0	1	0	0
The triggering criteria relies (partially or not) on present financial difficulties (cash shortage, delays…).	1	1	1	1	1	1
The triggering criteria relies (partially or not) on present non financial difficulties (social conflict…).	0	0	0	0	0	0
The triggering criteria relies (partially or not) on future / expected financial difficulties.	0	0	1	1	1	1
The triggering criteria relies (partially or not) on future / expected non-financial difficulties.	0	0	0	0	0	0
The triggering criteria does not require any difficulty, financial or not, present or future.	0	0	0	0	0	0
The debtor (manager or shareholder) can trigger the procedure.	1	1	0	1	1	1
The Court(s) can trigger the procedure.	1	1	0	0	0	0
Debtor's employees can trigger the procedure.	0	0	0	0	0	0
The State & public claims can trigger the procedure.	1	1	0	1	1	0
Secured creditor(s) can trigger the procedure.	1	1	1	1	0	0
Unsecured creditor(s) can trigger the procedure.	1	1	0	1	1	0
Any other stakeholder (account supervisor, customers, etc.) can trigger the procedure.	0	0	0	0	0	0
The debtor cannot oppose to the triggering (when (s)he has not decided to trigger him(her)self) .	0	0	1	0	0	0
The Court (in charge of the corporate bankruptcy affairs) cannot oppose to the triggering.	0	0	1	1	1	1
Debtor's employees cannot oppose to the triggering.	1	1	1	1	1	1
The State & public claims cannot oppose to the triggering.	0	0	1	1	0	1
Secured creditor(s) cannot oppose to the triggering. (whatever the type of collateral)	1	1	1	1	1	1
Unsecured creditor(s) cannot oppose to the triggering.	1	1	1	1	0	1
Any other stakeholder(s) (account supervisors, customers...) cannot oppose to the triggering.	1	1	1	1	1	1
INFORMATION						
The procedure is not confidential.	1	1	1	1	1	1
The law entitles stakeholders (employee…) to alert the manager on the difficulties, prior to bankuptcy.	1	1	1	1	1	1
Any stakeholder has an access to the information in the bankruptcy files, before the procedure is ended.	1	1	1	1	1	1
Any stakeholder has an access to the information in the bankruptcy files, once the procedure is ended.	0	1	1	1	1	1
Court and/or practitionner(s) may share the information they gather with the creditors (whatever their type).	1	1	1	1	1	1
An audit of the debtor takes place during the procedure (origin(s) of the default, last financial reports…).	1	0	1	1	1	1
Some experts can be hired to audit the firm.	1	1	1	1	1	1
The value of the debtor's assets is checked. (market value)	1	1	1	1	1	1
The value of the claims is checked. (some may be accepted or rejected)	1	1	1	1	1	1
Pre-estimation of the debtor's liquidation value is performed during the bankruptcy process.	0	1	1	1	1	1
Pre-estimation of the debtor's continuation value is performed during the procedure (forecast accounting).	1	0	1	1	0	0

	France		United Kingdom			
	"Redressement judiciaire"	"Liquidation judiciaire"	Receivership	Administration	Compulsory liquidation	Voluntary liquidation
PROTECT_ASSETS						
The contracts that took place before bankruptcy can be cancelled if they decreased the value of assets.	1	1	0	1	1	1
Before the procedure, some stakeholder(s) can warn the Court in case of first difficulties.	1	1	0	0	0	0
Before the procedure, the Court can interview the manager(s) in case of first difficulties.	1	1	0	0	0	0
During the procedure, the economic value of the debtor's assets is assessed and checked.	1	1	1	1	1	1
During the procedure, an audit of the restructuring opportunities (if they exist!) is performed.	1	0	1	1	1	1
During the procedure, the debtor's assets cannot be freely sold or liquidated.	1	1	0	0	1	1
During the procedure, major decisions (firing, investing…) are subjected to a legal authorization.	1	1	0	1	1	1
During the procedure, the continuation of previous contracts (supplies, electricity…) can be enforced.	1	1	1	0	1	1
During the procedure, legal practitioners (administrators, experts...) can help the manager(s) to run the firm.	1	1	1	1	1	1
During the procedure, faulty and/or incompetent manager(s) can be fired from the direction of the company.	1	1	1	1	1	1
PROTECT_EMPL						
Employees (prior): can be paid outside the procedure.	1	1	1	0	0	0
Employees (prior): no debt reduction	1	1	1	0	0	0
Employees (prior): no delays	1	1	0	0	0	0
Employees (post): can be paid outside the procedure.	1	1	1	1	1	1
Employees (post): no debt reduction	1	1	1	1	0	0
Employees (post): no delays	1	1	0	1	0	0
COORD_EMPL						
Employees: A legal mandatory represents them	1	1	0	1	0	0
Employees: stay of claim	0	0	1	1	1	1
Employees: stay of individual legal proceedings	0	0	1	1	1	1
Employees: They are consulted for the important decision	1	1	0	0	0	0
Employees: they are granted an information right	1	1	1	1	1	1
DECISION_EMPL						
Employees: They are consulted on the final decision	1	0	0	1	1	1
Employees: They vote on the final decision	0	0	0	1	0	0
Employees: The Court cannot impose a solution on them	0	0	1	0	0	0
Employees: They have an appeal right	0	0	0	0	0	0
Employees: Eventually, they can take the control	0	0	0	0	0	0
PROTECT_STATE						
State & public claims (prior): can be paid outside the procedure.	0	0	0	0	0	0
State & public claims (prior): no debt reduction	1	1	1	0	0	0
State & public claims (prior): no delays	0	0	0	0	0	0
State & public claims (post): can be paid outside the procedure.	0	0	1	1	1	1
State & public claims (post): no debt reduction	1	0	1	1	0	0
State & public claims (post): no delays	0	1	0	0	0	0

	France		United Kingdom			
	"Redressement judiciaire"	"Liquidation judiciaire"	Receivership	Administration	Compulsory liquidation	Voluntary liquidation
COORD_STATE						
State & public claims: A legal mandatory represents them	1	1	0	1	0	0
State & public claims: stay of claim	1	1	1	1	1	1
State & public claims: stay of individual legal proceedings	1	1	1	1	1	1
State & public claims: They are consulted for the important decision	1	0	0	0	0	0
State & public claims: they are granted an information right	1	1	1	1	1	1
DECISION_STATE						
State & public claims: They are consulted on the final decision	1	0	0	1	1	1
State & public claims: They vote on the final decision	0	0	0	1	0	0
State & public claims: The Court cannot impose a solution on them	0	0	1	0	0	0
State & public claims: They have an appeal right	1	1	0	0	0	0
State & public claims: Eventually, they can take the control	0	0	0	0	0	0
PROTECT_FIXEDSEC						
Fixed Secured (prior): can be paid outside the procedure.	0	0	1	1	1	1
Fixed Secured (prior): no debt reduction	1	1	1	1	1	1
Fixed Secured (prior): no delays	0	0	1	0	1	1
Fixed Secured (post): can be paid outside the procedure.	1	1	1	1	1	1
Fixed Secured (post): no debt reduction	1	1	1	1	1	1
Fixed Secured (post): no delays	1	1	1	1	1	1
COORD_FIXEDSEC						
Fixed secured: A legal mandatory represents them	1	1	1	1	1	1
Fixed secured: stay of claim	1	1	0	1	0	0
Fixed secured: stay of individual legal proceedings	1	1	0	1	0	0
Fixed secured: They are consulted for the important decision	0	0	0	0	0	0
Fixed secured: they are granted an information right	1	1	0	1	0	0
DECISION_FIXEDSEC						
Fixed secured: They are consulted on the final decision	1	0	1	1	0	0
Fixed secured: They vote on the final decision	0	0	0	1	0	0
Fixed secured: The Court cannot impose a solution on them	0	0	1	0	1	1
Fixed secured: They have an appeal right	0	0	0	0	0	0
Fixed secured: Eventually, they can take the control	0	0	1	0	1	1
PROTECT_FLOATSEC						
Floating Secured (prior): can be paid outside the procedure.	0	0	1	0	1	1
Floating Secured (prior): no debt reduction	1	1	1	0	0	0
Floating Secured (prior): no delays	0	0	0	0	1	1
Floating Secured (post): can be paid outside the procedure.	0	0	1	1	1	1
Floating Secured (post): no debt reduction	1	1	1	1	0	0
Floating Secured (post): no delays	1	1	1	0	1	1

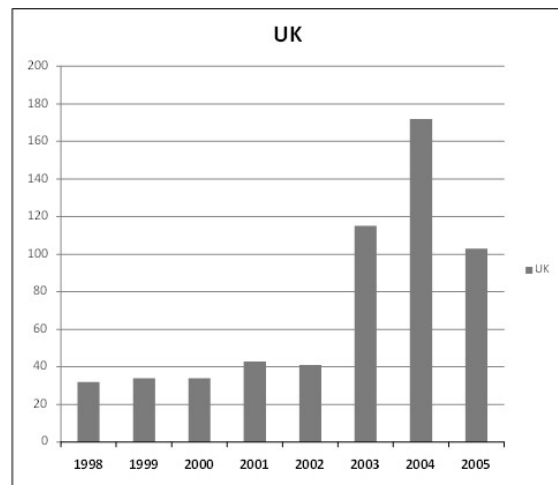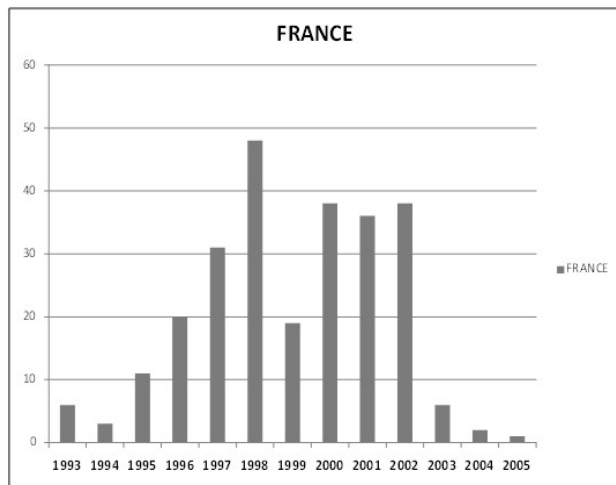|	France		United Kingdom			
	"Redressement judiciaire"	"Liquidation judiciaire"	Receivership	Administration	Compulsory liquidation	Voluntary liquidation
COORD_FLOATSEC						
Floating secured: A legal mandatory represents them	1	1	1	1	0	0
Floating secured: stay of claim	1	1	0	1	0	0
Floating secured: stay of individual legal proceedings	1	1	0	1	0	0
Floating secured: They are consulted for the important decision	0	0	1	0	0	0
Floating secured: they are granted an information right	1	1	1	1	0	0
DECISION_FLOATSEC						
Floating secured: They are consulted on the final decision	1	0	1	1	0	0
Floating secured: They vote on the final decision	0	0	1	1	0	0
Floating secured: The Court cannot impose a solution on them	0	0	1	0	1	1
Floating secured: They have an appeal right	0	0	0	0	0	0
Floating secured: Eventually, they can take the control	0	0	1	0	1	0
PROTECT_UNSEC						
Unsecured (prior): can be paid outside the procedure.	0	0	0	0	0	0
Unsecured (prior): no debt reduction	1	1	1	0	0	0
Unsecured (prior): no delays	0	0	0	0	0	0
Unsecured (post): can be paid outside the procedure.	0	1	1	1	1	1
Unsecured (post): no debt reduction	1	1	1	0	0	0
Unsecured (post): no delays	0	1	0	0	0	0
COORD_UNSEC						
Unsecured: A legal mandatory represents them	1	1	0	1	1	1
Unsecured: stay of claim	1	1	1	1	1	1
Unsecured: stay of individual legal proceedings	1	1	1	1	1	1
Unsecured: They are consulted for the important decision	0	0	0	0	0	0
Unsecured: they are granted an information right	1	1	1	1	1	1
DECISION_UNSEC						
Unsecured: They are consulted on the final decision	1	0	0	1	1	1
Unsecured: They vote on the final decision	0	0	0	1	0	0
Unsecured: The Court cannot impose a solution on them	0	0	1	0	0	0
Unsecured: They have an appeal right	0	0	0	0	0	0
Unsecured: Eventually, they can take the control	0	0	0	0	0	1
SANCTION OF MANAGEMENT						
The pre-default managers' decisions can be cancelled if they have decreased the value of the debtor's assets.	1	1	0	1	1	1
During the procedure, faulty and/or incompetent manager(s) can be fired from the direction of the company.	1	1	1	1	1	1
Manager having contributed to impoverish the debtor (voluntarily or not) may be put to jail.	1	1	0	0	1	1
Manager having contributed to impoverish the debtor may have to personally repay for the company's debts.	1	1	0	0	1	1
Manager having contributed to impoverish the debtor may not be allowed to restart a new business.	1	1	1	1	1	1
COSTLY_PROC						
The firm's assets must exceed the expected legal costs.	0	0	0	0	0	0
The practitioners do not operate under perfect competition: i.e. some barriers limit free entrance.	1	1	1	1	1	1
The legal costs are freely invoiced by the practitioners. Put 'N' if the legal fees are determined by the Law.	0	0	1	1	0	0
The amount of the legal costs does not have to be approved by the creditor(s).	1	1	0	0	0	0
The legal costs are not limited by a pre-determined maximum ceiling. Put 'Y' if the costs are freely invoiced.	0	0	1	1	0	0
The legal costs cannot be reduced for small companies or files. Put 'Y' if the costs are freely invoiced.	0	0	1	1	0	0

A2. *Sample structure and time repartition*

A2.1. Sample structure

Variables	France		United Kingdom			
	Redressement judiciaire (incl. sales)	Liquidation judiciaire (excl. sales)	Administration	Receivership	Compulsory liquidation	Voluntary liquidation
Sample size	*164*	*100*	*199*	*198*	*100*	*72*
Age (in years)	17.4	9.9	13.3	15.2	8.3	12.3
% of LTD companies	87.2%	97.0%	98.0%	97.5%	100.0%	100.0%
Number of employees	26.12	11.96	n.a.	n.a.	n.a.	n.a.
Sector: trade	20.7%	19.0%	15.6%	13.1%	12.0%	13.9%
Sector: industry	25.6%	26.0%	49.2%	58.6%	48.0%	51.4%
Sector: services & others	53.7%	55.0%	35.2%	28.3%	40.0%	34.7%
% of groups	8.5%	5.0%	23.1%	27.8%	0.0%	0.0%
% of intangible assets	13.7%	12.7%	5.8%	5.1%	0.0%	0.0%
% of tangible assets	24.9%	23.9%	39.9%	42.1%	13.5%	24.7%
% of financial assets	6.6%	2.2%	0.1%	0.5%	0.0%	0.9%
% of inventory	14.5%	6.1%	11.1%	8.5%	4.4%	4.4%
% of receivables	23.3%	35.9%	36.0%	39.1%	44.3%	39.0%
% of marketable securities	0.5%	0.1%	0.0%	0.0%	0.0%	0.0%
% of cash	7.0%	5.7%	4.6%	3.1%	37.7%	27.0%
% of other assets	9.5%	13.4%	2.4%	1.7%	0.1%	4.0%
Cause(s) of default: strategy	14.6%	15.0%	29.6%	26.3%	15.0%	11.1%
Cause(s) of default: production	27.4%	19.0%	30.2%	24.7%	11.0%	11.1%
Cause(s) of default: finance	25.0%	24.0%	19.6%	15.7%	10.0%	6.9%
Cause(s) of default: management	13.4%	12.0%	9.0%	8.1%	18.0%	8.3%
Cause(s) of default: accident	28.7%	20.0%	32.7%	22.7%	57.0%	9.7%
Cause(s) of default: outlets	51.2%	59.0%	64.8%	83.3%	45.0%	27.8%
Cause(s) of default: macro	43.3%	21.0%	42.2%	44.9%	19.0%	20.8%

Remark: for each procedure, the sum of all causes is more than 100% as there can be more than one cause per file that did participate to the bankruptcy process.

A2.2. *Time repartition of the sample*

The English data are slightly more recent for three reasons: first, they were already stored in electronic format so that the data collection process was quicker to undertake. Second, we could not extract too many French files for year 2005 as it was a transition year in France (between the old and the new legislation). Third, we had to exclude from the sample the very recent files as we needed to work on closed files only (in order that the computation of recovery rates is reliable and definitive). As the covered period is quite long (more than 10 years), we control for macroeconomic shocks by introducing in our regressions the annual growth rate of GDP.

FRANCE / UK

A3. Codification of the causes of default

	Origin of the default (codifications)
Outlets	[1] Brutal disappearance of customers; [2] Customer(s) in default; [3] Product(s) too expensive (selling price is too high); [4] Bad evaluation of the market; [5] Product(s) too cheap (selling price is too low); [6] Unsuitable products; [7] Obsolete products; [8] Loss of market shares (regular fall of the firm's demand).
Strategy	[1] Youth of the company (inexperience); [2] Voluntary dissolution of the activity;[3] Failure of important projects (partnerships, investments, reorganizations);[4] **Voluntary acceptance of little profitable markets** (dumping...).
Production	[1] **Production capacity was too strong, overinvestment**; [2] Depreciation of the assets; [3] Operating costs were too high (other than wages: external expenses, raw materials...); [4] Wages expenses were too high; [5] Brutal disapearance of suppliers; [6] Unsuitable process of production (obsolete); [7] **Underinvestment**.
Finance	[1] Longer delays on accounts receivable; [2] Contagion / reported losses from subsidiaries; [3] Shorter delays on accounts payable; [4] **Excessive speculation of the company**; [5] end of the financial support from the head office / holding; [6] Lack of equity (compared to leverage/liabilities); [7] Loan refusal to the company; [8] end/reduction of the subventions to the company; [9] Contractual interest rates are too high.
Management	[1] **Weak accounts reporting / informational system is deficient**; [2] **Problems of competence**; [3] Disagreements among the directors / managers; [4] **Excessive takings from the managers**; [5] **Insufficient provisions**; [6] **Lack of knowledge on the real level of costs of returns (causing too weak selling)**; [7] **Bad evaluation of inventory**; [8] Problems of transmission of the company / difficulties in restructuring.
Accident	[1] **Swindle / embezzlements affecting the company**; [2] Another insolvency procedure (for other companies) is extended to the firm (same patrimonies); [3] Disputes with public partners (fiscal inquiry); [4] Disputes with private partners; [5] Death / disease / disappearance of the manager; [6] Disaster; [7] Social problems within the company.
External environment	[1] Unfavorable fluctuation of the exchange rates; [2] Increase of the competition; [3] Decreasing demand to the sector; [4] "Force majeure" (war, natural catastrophe, industrial crisis, politics, bad price evolution); [5] Public policy less favorable to the sector; [6] Period of credit crunch; [7] The general level of interest rates is too high; [8] Macroeconomic increase of operating costs (raw materials, GMW…).

A4. *Structure of the templates*

1. Company's identification	3b. Financial information and bankruptcy costs
Matriculation number	Declared market values of assets (triggering time).
Sector (French NAF national codification)	Verified claims by levels of priority (end of the procedure)
Geographical localization	Number of creditors.
Number of employees	Bankruptcy costs individual estimation
Legal form	**3c. Engaged measures / legal measures**
Creation date	Engaged measures during the bankruptcy procédure (up to 10), each of them to the Court approval.
Manager(s): age, functions, nb. of administrators…	Identification of the legal practitioners
2. Process of default	**3d. Procedure outcome**
Origin of default (up to 10 cumulative causes, based on a specific codification (51 codes). The identification of causes stems from an audit engaged by the administrator.	Realized value of assets (if liquidation)
3. The bankruptcy procedure (from triggering to the final issue)	Characteristics of the buyout plan(s) (if any), in case of a sale as a going co pros and cons of the offer, as analyzed by the legal administrator)
3a Type of procedure	Characteristics of the reorganization plan (length of the plan, repayment sch
Type of the legal procedure (simplified or not)	**3e. Legal sanctions against managers (if any)**
Date of triggering and of ending	Suspect period
Identity of the bankruptcy's initiator	Pecuniary sanctions
Legal issue: liquidation, sale, reorganization	Extra pecuniary sanctions
Remark: all files are closed files (with definitive recovery rates).	Type of fault

A5. *Regression analysis using legal indexes*

Variables	Dependant variable: total recovery rate						
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7
Constant	0.02311 0.8369	0.42319*** 0.0005	0.06667 0.493	0.24511*** 0.0048	0.05943 0.4708	0.03708 0.647	0.21194*** 0.0004
Legal index: "Accessibility"	0.33861** 0.0452						
Legal index: "Production of information"		-0.28488** 0.0499					
Legal index: "Protection of debtor's assets"			0.13677* 0.0557				
Legal index: sanction of faulty management				-0.02473 0.625			
Legal index: protection of claims (all claims)					0.24457*** 0.0071		
Legal index: coordination of claims (all claims)						0.20553*** 0.0014	
Legal index: decision power (all claims)							-0.02061 0.7664
Coverage rate	0.13416*** <.0001	0.12724*** <.0001	0.12709*** <.0001	0.13574*** <.0001	0.13404*** <.0001	0.13022*** <.0001	0.1331*** <.0001
% of secured debts	0.24713*** <.0001	0.28842*** <.0001	0.28950*** <.0001	0.23294*** <.0001	0.24084*** <.0001	0.27275*** <.0001	0.25068*** <.0001
Duration of the procedure (relative to average)	0.00721 0.4394	0.00467 0.6143	0.00411 0.6578	0.00562 0.5478	0.00785 0.3982	0.00814 0.3802	0.00506 0.5862
ln (age)	0.00138 0.8535	0.00177 0.8132	0.00138 0.8544	0.00063 0.9328	0.00184 0.8057	0.00215 0.7739	0.001 0.8951
Limited liability	-0.19374*** <.0001	-0.18799*** <.0001	-0.18688*** <.0001	-0.19938*** <.0001	-0.19506*** <.0001	-0.18477*** <.0001	-0.19688*** <.0001
Debtor belongs to a group	-0.0982*** 0.001	-0.0877*** 0.0034	-0.08635*** 0.0041	-0.09669*** 0.0014	-0.09966*** 0.0008	-0.09644*** 0.0012	-0.09344*** 0.0018
% of estimated cash in the assets	0.0676** 0.0494	0.06567* 0.0549	0.05972* 0.076	0.04933 0.1397	0.07299** 0.0332	0.08472** 0.0152	0.05308 0.1266
ln (total assets, in K€)	0.02044*** 0.0003	0.02358*** <.0001	0.02412*** <.0001	0.02177*** 0.0002	0.01943*** 0.0005	0.01976*** 0.0004	0.02268*** <.0001
Cause of default: strategy	-0.0039 0.845	-0.00179 0.9288	-0.00307 0.8779	-0.0065 0.7449	-0.0005 0.9801	0.00008 0.9967	-0.0054 0.7882
Cause of default: production	-0.06611*** 0.0005	-0.06446*** 0.0007	-0.06469*** 0.0007	-0.065*** 0.0006	-0.06399*** 0.0007	-0.06613*** 0.0005	-0.06485*** 0.0007
Cause of default: finance	-0.02007 0.3035	-0.01819 0.3524	-0.01909 0.3285	-0.02192 0.2625	-0.01823 0.3494	-0.01744 0.3697	-0.02089 0.2874
Cause of default: management	0.09034*** <.0001	0.08826*** <.0001	0.08722*** 0.0001	0.08776*** <.0001	0.09108*** <.0001	0.09203*** <.0001	0.08774*** <.0001
Cause of default: accident	0.01867 0.3117	0.02163 0.248	0.01904 0.3033	0.01312 0.4758	0.02404 0.1973	0.02588 0.1643	0.01522 0.4207
Cause of default: outlets	0.01446 0.3977	0.01484 0.386	0.01449 0.3971	0.01089 0.5245	0.01334 0.4327	0.01781 0.297	0.01191 0.4876
Cause of default: macro	0.01064 0.5391	0.0143 0.417	0.01255 0.4725	0.0061 0.7267	0.01296 0.4546	0.01617 0.3526	0.0085 0.633
Sector: industry	0.01519 0.3643	0.01929 0.2588	0.01859 0.2749	0.01068 0.5282	0.01567 0.3477	0.02109 0.2106	0.01305 0.4446
Annual change in GDP	-0.41031 0.5603	-0.51444 0.4589	-0.62444 0.3636	-0.75582 0.2706	-0.35693 0.609	-0.12779 0.8568	-0.70129 0.32
OLS regression **Number of observations: 735**	Fisher Stat: 16.06 (prob: <.0001) Adj. R²: 0.270 Nb. of variables with VIF>2: none	Fisher Stat: 16.05 (prob: <.0001) Adj. R²: 0.270 Nb. of variables with VIF>2: none	Fisher Stat: 16.04 (prob: <.0001) Adj. R²: 0.270 Nb. of variables with VIF>2: none	Fisher Stat: 15.77 (prob: <.0001) Adj. R²: 0.266 Nb. of variables with VIF>2: none	Fisher Stat: 16.32 (prob: <.0001) Adj. R²: 0.273 Nb. of variables with VIF>2: none	Fisher Stat: 16.54 (prob: <.0001) Adj. R²: 0.276 Nb. of variables with VIF>2: none	Fisher Stat: 15.76 (prob: <.0001) Adj. R²: 0.266 Nb. of variables with VIF>2: none

Note –Table reports coefficients with t-statistics below. *, **, *** denote an estimate significantly different from zero at the 10%, 5% or 1% level. No variable shows a VIF higher than 2.