



fedea

Fundación de
Estudios de
Economía Aplicada

The Spanish Business Bankruptcy Puzzle and the Crisis

by

Marco Celentani*

Miguel García-Posada**

Fernando Gómez***

DOCUMENTO DE TRABAJO 2010-11

March 2010

* Universidad Carlos III and FEDEA.

* FEDEA.

** Universitat Pompeu Fabra.

Los Documentos de Trabajo se distribuyen gratuitamente a las Universidades e Instituciones de Investigación que lo solicitan. No obstante están disponibles en texto completo a través de Internet: <http://www.fedea.es>.

These Working Paper are distributed free of charge to University Department and other Research Centres. They are also available through Internet: <http://www.fedea.es>.

ISSN:1696-750X

Jorge Juan, 46
28001 Madrid -España
Tel.: +34 914 359 020
Fax: +34 915 779 575
infpub@fedea.es

N.I.F. G-78044393

THE SPANISH BUSINESS BANKRUPTCY PUZZLE AND THE CRISIS‡

Marco Celentani
Universidad Carlos III and FEDEA

Miguel García-Posada
FEDEA

Fernando Gómez
Universitat Pompeu Fabra

March 8, 2010

Abstract

Spain has the world's lowest business bankruptcy rate (number of formal business bankruptcies divided by number of firms). We document this fact, analyze the Spanish institutional framework and compare it with those of other European countries. We argue that a way to organize the documented evidence is to keep into account both the ex-post and the ex-ante efficiency repercussions of the Spanish institutional framework. We propose a view that is based on the idea that the unattractiveness of bankruptcy procedures and the efficiency of mortgage collateral lead Spanish firms to reduce the risk of bankruptcy. We show that this view is compatible with stylized features of firms' capital structures, asset structures, and profitability. We conclude with a description of recent developments in bankruptcies and bankruptcy legislation in Spain, and with a brief discussion of potential policy implications.

‡ Paper prepared for the II FEDEA Annual Policy Conference, *The Crisis of the Spanish Economy*, Madrid, October 28-30, 2009. We gratefully acknowledge the financial support of FEDEA and the Spanish Ministry of Innovation and Science for financial support, under grants SEJ2007-60503 and SEJ2007-10041. We thank Luis Garicano, Luis Gonzaga Serrano de Toledo, Maria Gutiérrez, Roberto Mantovano and Tano Santos for useful discussions and suggestions and Carlos Alberto Ruiz and Gabriela Antonie for excellent research assistance. Marco Celentani, Universidad Carlos III, Department of Economics, Getafe (Madrid), 28903, Spain; email: marco.celentani@uc3m.es. Miguel García-Posada, FEDEA, Calle Jorge Juan 46, Madrid 28001, Spain; email: mgarcia@fedea.es. Fernando Gómez, Universitat Pompeu Fabra, Department of Law, Ramon Trias Fargas 25-27, 08005 Barcelona, Spain; email: fernando.gomez@upf.edu.

1. Introduction

The ways in which corporate financial distress is dealt in relatively similar countries, such as developed countries with similar income levels, are surprisingly diverse. Countries differ in terms of the probabilities of firms being involved in bankruptcy or other insolvency procedures, as well as in the final results of these procedures, e.g., agreements with creditors under court supervision, or liquidation of the company.

Figure 1 plots business bankruptcy rates (number of bankruptcies per 10,000 firms) and average per capita GDP levels for 2006 for most Western European countries. In Figures 2 and 3 we plot instead average business bankruptcy rates (number of bankruptcies per 10,000 firms) and average business conditional bankruptcy rates (number of bankruptcies divided by number of firms going out of business), against per capita GDP for a smaller selection of Western European countries and for the period 2004-2006.

This paper does not attempt to provide a complete explanation for the positive relations exhibited in Figures 1-3. Figures 1-3 constitute instead a graphical representation of the *observation* that motivates this work, and of the *reason* why we believe it is important to explain this observation. The *observation* is that Spain has extremely low business bankruptcy rates. The *reason* why we think it is important to explain this is that low bankruptcy rates may indicate that the legal environment discourages business risk-taking with obvious repercussions on growth and on the riskier components of its drivers, such as innovation.

The extremely low Spanish business bankruptcy rates have been noted before. But given that there is no accepted explanation for these low rates, we refer to them as the *Spanish business bankruptcy puzzle* (SBBP). This paper is a first step to attempt to explain the SBBP. The main objective of the paper is to propose an explanation that is not immediately contradicted by a number of related aggregate stylized facts that we document. Because the data we use are aggregate, we cannot test our view. We can simply use the data as a guide to propose a coherent explanation and as an indication of how useful it may be to pursue this line of research.

One could think that a simple explanation of the SBBP is that Spanish bankruptcy legislation makes formal bankruptcy a legal necessity only when firms are in a situation of extreme financial distress and that it leaves more room for private workouts. In other words a firm would enter a formal bankruptcy procedure only in rare events, when private workouts fail, or when the deterioration of its financial condition is so abrupt as to skip the attempt to arrange a private workout.

Taken to the extreme, this Coasian view could mean that the SBBP is nothing but a statistical reflection of a legislation with an unusually low implied

“insolvency test” that assigns more firms in financial distress to informal workouts (that are difficult to document) and fewer to formal bankruptcies (that are recorded in official statistics), but that *otherwise has no practical relevance*.

We have two objections to this view. One is logical; the other one is based on empirical evidence. On logical grounds we find it hard to believe that assigning firms in financial distress to informal workouts or to formal bankruptcy procedures has no practical relevance, given that the rules and the institutions available in a formal bankruptcy procedure are not easily replicable in private workouts. For example, it would not be easy to get many poorly informed small creditors to voluntarily accept a stay on their claims or debtor-in-possession financing by which new financing is given higher priority than their claims.

From the empirical point of view, although the available evidence is not very ample and data from different countries are not easily comparable, it also seems that Spanish firms involved in bankruptcy procedures are not in worse financial conditions than their foreign counterparts.

There is ample literature, both within and outside economics, arguing that the institutional framework dealing with the creditor-debtor relationships and the insolvency of firms is very relevant for economic outcomes.

The ways in which legal systems distribute claims against assets of insolvent firms to debtors and creditors and assign the rights to control these assets to creditors, debtors or third parties (such as judges or insolvency practitioners) obviously influence ex-post outcomes, i.e., the allocation of resources after the insolvency procedure has been initiated. But legal provisions for insolvent firms also have important ex-ante effects, because they affect productive activities and their financing and also because they ultimately influence the probability that firms become insolvent.

In this paper we propose the idea that, in order to explain the Spanish business bankruptcy puzzle, it is necessary to keep into account both the ex-ante and the ex-post repercussions of the Spanish bankruptcy law. The view that we propose in this paper can be summarized as follows: (1) Creditor/debtor orientation of insolvency law and (2) efficiency of bankruptcy procedures and (3) mortgage efficiency have an impact on (4) the choice of capital structure and (5) business decisions on asset purchases and the level of risk-taking; (4) and (5) have an impact on (6) the probability of financial distress and on (7) the probability that a financially distressed firm ends up in a formal bankruptcy procedure.

The paper is organized as follows. In section 2 we discuss the related literature. In section 3 we describe the Spanish business bankruptcy legal procedure and we compare it with the ones of France, Germany, Italy and the UK. In section 4 we expose our view of the Spanish experience. In section 5 we contrast our view with aggregate data on capital and asset structure of nonfinancial firms in Spain, France, Germany, and Italy. In section 6 we present the recent

developments in bankruptcy proceedings and the recent changes in the Spanish bankruptcy law. In section 7 we conclude and provide a brief discussion of our findings and of the policy implications of our view. The Appendix contains details on the sources of the data that we use in the paper.

2. Related literature

Our work relates to existing literature in economics, finance, law and economics and law and finance.

Many authors have already stressed the importance of how and how efficiently bankruptcy code splits claims and control rights on the assets of financially distressed firms or in other words of (1) the creditor/debtor orientation and (2) the efficiency of bankruptcy procedures. For instance, La Porta, Lopez de Silanes, Shleifer and Vishny (1997 and 1998) have made international comparisons of insolvency procedures constructing indices of their propensities to allocate these claims and control rights to creditors.¹ La Porta, Lopez de Silanes, Shleifer and Vishny (1997) also use indices of the “efficiency of the judicial system,” the “rule of law” and “corruption” elaborated by the Business International Corporation and the International Country Risk Guide. Djankov, Hart, McLiesh, Shleifer (2008) have designed a survey to provide a quantitative measure of the losses in debt enforcement around the world and of the causes of these losses, e.g., what part is due to legal costs, duration, or inefficient decisions relative to the liquidation of an insolvent firm.

Many authors have concentrated on the ex-ante implications of bankruptcy codes and in particular on (4) firms’ capital structures. Morrison (2008) argues that the complexity of a firm’s capital structure is one of the determinants of the use of the bankruptcy law –vis-à-vis other insolvency procedures- in case of financial distress. La Porta, Lopez de Silanes, Shleifer and Vishny (1997), find that shareholder protection encourages the development of equity markets, and to a lesser extent that creditor protection encourages the development of credit markets. Jappelli & Pagano (2002) suggest that lenders may respond to poor creditor protection by sharing information about borrowers via private credit bureaus or public credit registers. Qian and Strahan (2007) study how creditor protection rules affect price and non-price terms (such as debt maturity) in bank loans in a sample of 60 different countries. In their international comparisons of capital structures, Rajan and Zingales (1995) suggest that bankruptcy laws may be one of the important reasons why firms in different countries have different capital structures and conjecture that the creditor friendliness of the bankruptcy code may be a determinant. Giannetti (2003) finds that institutions that favor creditor rights are associated with higher leverage and greater availability of long-term debt. Davydenko and Franks (2008) compare the capital structure of firms that defaulted on their bank debt in France (which has a creditor unfriendly code) and Germany and the United Kingdom (whose bankruptcy

¹ See also the independent classification of Lopez, Garcia and Torre (2009).

laws are much more creditor friendly). Acharya , Sundaram, and John (2008) propose a model in which optimal leverage depends on the creditor friendliness of the bankruptcy code but also on the anticipated liquidation value of the firm. They find support for the model's implication that the difference in leverage between the debtor friendly code (US) and the creditor friendly code (UK) is a decreasing function of the anticipated liquidation value. Gennaioli and Rossi (2008) propose a model that implies that stronger creditor protection leads to a capital structure with floating charge financing.

The idea that the choice of capital structure is inherently linked to (5) business decisions such as asset choices and the degree of risk-taking is an old hand in the corporate finance literature. Jensen and Meckling (1976) for instance maintain that the shareholders of a levered firm have incentives to inefficiently increase risk, because debt makes their payoff convex. Grossman and Hart (1982) point out that if bankruptcy is costly to managers (e.g., because of a reputational loss they suffer) debt can align the incentives of managers and shareholders. Kim and Maksimovic (1990) suggest that firms' creditors can link the availability of financing to the use of productive assets that are more easily monitored and that retain more value in liquidation.

Other authors have also suggested that the legal treatment of involuntary creditors under insolvency also affects (4) and (5), because it affects the choice of asset levels and the firms' standards of behavior with respect to many kinds of laws and regulations (Shavell, 1986; Ganuza and Gomez, 2008). Firms, for instance, may engage in several strategies leading to material undercapitalization that will determine its inability to face the liabilities or monetary penalties resulting from its activities: divest activities in poorly capitalized subsidiaries, or in purely instrumental limited liability entities; externalize risky portions of the activity to small-sized contractors; choose an excessive amount of senior or secured debt that will be preferred to the claims of tort victims for damages, or to the claims of the Government for penalties, all of these leading to distortions with respect to optimal behavior in externality-creating activities.

Claessens and Klapper (2005) is one of very few papers to point out that it is important to also analyze (6) times (7), i.e., the frequency with which formal bankruptcy regimes are used (as opposed to informal workouts), because it is a way to understand the effective importance of specific creditor rights. They find that the rule of law increases bankruptcy usage and that the aggregate credit protection score proposed by La Porta, Lopez de Silanes, Shleifer and Vishny (1997) is not significant. But they also find that two of the components of the aggregate index have significant impacts with opposite signs. In particular they find that usage rates are increased by (creditor oriented) restrictive reorganization rules (requiring, for instance, creditors' consent for

reorganization) but also by (debtor oriented) provisions of automatic stay of creditors' rights during insolvency procedures.

Given that the main preoccupation of this paper is to explain the low usage rate of formal bankruptcy procedures in Spain, one may think that Claessens and Klapper (2007) may provide a useful off-the-shelf explanation for it – so that the Spanish business bankruptcy puzzle would not be a puzzle after all. But this is not the case. Claessens and Klapper's (2007) empirical work has an ambitious goal of providing an explanation of usage rates for a large cross section of developed and developing countries. But their results (that high judicial efficiency, the ability of creditors to restrict reorganization processes and the existence of automatic stays of creditors during bankruptcy) indicate that Spain should have relatively high usage rates. In other words, while the work of Claessens and Klapper (2007) may be useful to understand usage rates in many countries around the world, it is totally useless to make sense of the low usage rates in Spain.

3. Spanish Insolvency Law in context

The current Spanish insolvency law dates from 2003, though its entry into force was delayed until September 1 2004. Prior to that, the Spanish regime was notoriously chaotic and inefficient (Cerdá and Sancho, 2000). It was sharply divided in two different procedures. One of them (*quiebra*) could be initiated by both the insolvent debtor and the creditors, and implied that the firm's management was taken over by creditor-appointed representatives who were essentially in charge of liquidating assets and paying creditors in due order, although an agreed restructuring was also possible. The rules were very rough on the debtor and archaic –mostly in the 1885 Commercial Code, but also in an earlier Commercial Code from 1829. The procedure was complex and lengthy - 25 years was not unheard of- and the ex-post efficiency in terms of asset realization was meagre to say the best. The other was essentially –because it could also end up in liquidation eventually- a restructuring procedure (*suspensión de pagos*) which could be initiated solely by the debtor, who typically would retain control of the firm. The procedure, though substantially simplified from that of the *quiebra*, was still cumbersome, and the occasions for debtor and creditor opportunism were plenty.

Various attempts to radically reshape Spanish insolvency Law failed, until the 2003 Bankruptcy Act (*Ley concursal*, LC in what follows). The old arrangements probably were an important explanatory factor behind the observation that Spain had an astonishingly low rate of bankruptcy proceedings taking into account the number of firms. In Claessens and Klapper (2005) out of 35 countries in Europe, America and Asia, Spain had the lowest formal bankruptcy rate, of 0.02%, only close to Peru (roughly double the Spanish rate) and Portugal (about four times the Spanish rate).

The new insolvency regime applied by Spanish courts since 2004 may be summarily described by the following features:

1. It is a unified procedure, eliminating the previous two avenues to channel firm insolvency. It is also unified in the sense that it serves both firms and individuals, though there is a simplified procedure when the estimate of its liabilities does not exceed €10,000,000,² and the firm has simplified accounts and no audited books.
2. Both the debtor and the creditors may initiate the proceedings. In practice, since its entry into force in September 2004, more than 85% have been so-called voluntary filings, on the debtor's initiative. The debtor and the firm managers are encouraged to file early through different means: first, they may file even when no actual insolvency exists, as long as the inability to face payments is imminent; second, the debtor and firm management are under a legal duty to file in two months from actual insolvency, and this will be presumed after 3 months of default in tax and social security contributions, or salaries. If they do not file in the prescribed time, there will be a presumption that insolvency is not without fault, which may imply serious personal liabilities for management; third, the filing is simplified, because only the accounts, a list of creditors and assets, and a brief explanation of the situation of the firm is required for filing being complete; fourth, if they do not file, but the creditors do, the rule is that firm management will be taken over by court-appointed representatives. In 2009 the LC has been modified to coordinate early filing with incentives for debt renegotiation: if the debtor is negotiating a proposal for restructuring agreement (*convenio anticipado*), it may avoid the obligation to file for insolvency by notifying the court that it is in such negotiation process. Then, a window of 3 months opens for such a process, with an additional 1 month to file if renegotiation fails, in which no procedures may be initiated by creditors.
3. Once the petition for bankruptcy has been formalized, the courts – Mercantile courts, specialized in commercial matters- will start the procedure (*sección primera*) and decide whether to accept or reject the petition. Courts should do so summarily – the LC, very optimistically, foresees that this will happen in one day in case of petition by the debtor. Roughly 20% of petitions are rejected, to a higher degree when the petition is not voluntary on the debtor's side. In case of creditor's initiative, opposed by the debtor, typically because insolvency is not convincingly shown. In the case of debtor's initiative, it is essentially because some of the formal requirements are missing or defective, possibly on purpose, when the debtor may try to hastily fulfil the duty to file, or get a head start in petition over creditors.

² This figure was raised from the initial €1,000,000 foreseen in 2003 by the changes introduced in the LC earlier in 2009 (Real Decreto-Ley 3/2009, of urgent measures in tax, financial, and insolvency matters, in the face of the evolution of the economic situation), as a result of the greatly increased workload for the Mercantile courts due to the crisis.

4. The second section of the procedure deals with the court-appointed administrators. The general rule is that there will be three of them (in the simplified procedure, just one), all designated by the court, but from a different pool. One has to be a practising lawyer selected by the court from the list provided by the Bar Association. The second, an auditor, economist or commercial expert (*titulado mercantil*) also from the lists provided by the relevant professional bodies. The third will be a creditor, either ordinary or privileged –but not with secured credit on a valuable asset. They will be compensated over the debtor’s assets, on a variable basis depending essentially on the value of the assets and the volume of credit. As many criticisms were raised against excessive compensation, the LC was changed in 2009 to fix a cap on the level of compensation. No performance incentives (neither in restructuring nor in liquidation) are built into this compensation scheme.

The insolvency administrators take over management when the court so decides –more commonly in creditors’ initiated procedures- and in the remaining cases they oversee current management, and have to authorize all transactions outside day to day business of the firm. They also draw the list of assets and creditors, have to give an opinion on all restructuring plans that may be presented, and are in charge of drafting the liquidation plan of the firm’s assets, unless the debtor himself has presented an early liquidation plan that has obtained court approval.

5. The court declaration of insolvency that starts the formal procedure determines an automatic stay in all unsecured credits until the end of the procedure, and interest cease to accrue, with very limited exceptions. Secured creditors over assets that are integrated in the debtor’s production process are also affected by the stay, for the minimum of 1 year or the date in which a restructuring plan that does not affect their rights is approved.
6. The insolvency administrators produce a list of all the debtor’s assets (*sección tercera*) and credits against the insolvent debtor (*sección cuarta*). Credits are subject to the following ordering: (i) preferential credit (*créditos contra la masa*) will be the first to be paid, and comprise salaries for the last month of activity, the costs of the procedure itself, including compensation for the insolvency administrators, plus the new debt incurred by the firm in its activities after the insolvency declaration. This means that new funds for the on-going operation of the firm, even new financial debt, will enjoy priority over old secured debt; (ii) secured credit of all kinds over specific assets of the firm (*créditos con privilegio especial*); (iii) privileged credit (*créditos con privilegio general*) such as other labor credits, and public and tort creditors up to a certain amount; (iv) ordinary credits (*créditos ordinarios*) as the residual category: all credits that do not belong to any other type; (v) subordinated credit (*créditos subordinados*) which includes those of closely related parties (managers,

shareholders, etc.) and some other kinds, such as interest, sanctions and fines, etc.

7. The LC provides for some claw-back actions and procedures aimed at redressing the assets of the debtor –now, presumably, with the creditors as residual claimants- of the harmful consequences of actions that took place prior to the insolvency declaration. Thus, advanced payments and transactions with related parties –managers, shareholders- may be clawed-back at the initiative of the administrators or the creditors, and the proceeds will increase the debtor’s assets. The possibility of claw-back also affects the grant of secured status to credits replacing existing credit. In some –but very few indeed- cases Spanish courts ruled to eliminate the securities granted to banks having re-financed the existing debt. This created huge alarm in the financial sector, and led to a change in the LC in order to exempt re-finance transactions from claw-back, if some conditions are met: the re-finance plan is agreed by 3/5 of existing credit, and the plan is ok-ed by an independent expert appointed by the Commercial Registry (*Registro Mercantil*).
8. After the list of assets and creditors is approved by the court, the common phase of the procedure ends, and we may have reorganization or liquidation. A restructuring or reorganization plan may be proposed both by the debtor and by the creditors. Data shows that in virtually all cases –nearly 97%- it is the debtor who has the initiative of the plan. The debtor may also make use of the opportunity to present an anticipated plan, together with the petition for bankruptcy (with the support of at least 10% of outstanding credit) or within one month of the court declaration of insolvency (with the support of at least 20% of outstanding credit). Anticipated plans have been popular in terms of presentation, but they have been approved much less frequently than ordinary plans³.

The plan has to be informed by the insolvency administrators, approved by a majority of ordinary creditors, and finally authorized by the court. Secured and privileged creditors will not be affected by the plan and will fully enjoy their legal rights against the insolvent firm unless they vote in favor of the plan. The plan may not –except in extraordinary cases that need to be justified by the court- imply a loss for ordinary creditors beyond 50% of their nominal value, nor a delay in payment of more than 5 years.

9. If no plan is presented or reaches approval⁴, or if the approved plan fails, the insolvency administrators submit a liquidation plan to the court, in

³ Although anticipated plans have accounted for a 23% of all the proposed reorganization plans, they have only accounted for a 14% of the approved plans, while the remaining 86% have been ordinary plans.

⁴ Only in 11% of the total bankruptcy filings a reorganization plan was presented, and only in 5% of these filings a plan was approved.

order to sell the assets and pay the creditors in the order summarized above.⁵

10. The LC mandates that the court should examine the potential liabilities of the debtor –the firm’s management in the case of a company- when there is liquidation of the firm, or when the reorganization plan implies a serious loss to creditors: a hair-cut of more than 33%, and a delay in payment of more than 3 years. The LC contains some presumptions of fault on the part of the debtor or its managers, and taking them into account, and considering the evidence presented, the court may declare the bankruptcy to be fortuitous (*concurso fortuito*) or guilty (*concurso culpable*). A finding of guilt may imply a judgment against the individual manager involving incapacitation to run a company from 2 to 15 years, payment of damages to the firm or to creditors, and even, in case of liquidation, the obligation to face the unpaid sums in favor of the creditors. These liabilities are independent of the criminal liabilities that may apply if a criminal behavior –fraud, embezzlement- is found and proven.

How similar or different is the current Spanish insolvency law to those of other developed economies? Most commentators, both in economics and in law, tend to ascribe an insolvency regime to one or the other of two ideal types of regime. There are creditor-friendly regimes, essentially driven by creditors and focused upon maximizing the net recovery of their credit. Debtor-friendly regimes, on the other hand, are mostly concerned about keeping the firm as a running enterprise, and allow space for the debtor to reorganize and be back in business, while at the same time keeping an eye on safeguarding the interests of other stakeholders, particularly employees.

The UK⁶ is typically considered to possess a clear creditor-oriented system. This orientation may have probably weakened following legislative changes earlier in this decade, but the full effects of these changes may not yet be entirely perceptible. Although various insolvency procedures co-exist in the UK, the most important regimes for business insolvency are summarized here. Prior to the Enterprise Act (2002), secured creditors were almost entirely in charge of bankruptcy under an administrative receivership scheme. The holder of a floating charge on the business⁷, commonly one bank providing the bulk of finance to the company, could appoint, with almost no other constraints, as soon as there was a default in the loan, a receiver who would take over the entire company, and would try to maximize recovery for the holder of the floating charge. Of course, this normally did not imply piecemeal liquidation of the assets, but the sale of the business to a new entrepreneur. Floating charges

⁵ The debtor may also present a liquidation plan to the court, with the petition for bankruptcy or at any time 15 days later than the list of assets and creditors has been produced.

⁶ The main source for insolvency Laws in Europe is McBryde, Flessner, and Kortmann (2003).

⁷ Davydenko and Franks (2008) present evidence that financing of each individual firm is more concentrated in UK firms than in other European countries.

agreed after the enactment of the Enterprise Act do not give rise to such power. The bank may, however, under some conditions, appoint an administrator who takes over the management, although he owes duties also to other creditors and to the company itself. The procedure may be initiated by the secured creditor even without court order and proof of insolvency. The company management is entirely replaced, and the administrator is supervised by the court, and by a committee of creditors. The administration implies a stay for non-secured creditors, but the individual enforcement of secured credit needs to be authorized by the administrator or the court. As for liability of management following an insolvency procedure, it is mainly criminal, and based on a finding of fraudulent trading that may be attributed to the actions or decisions of the managers.

France is commonly placed at the opposite end of the spectrum, essentially due to the ample powers of the insolvency courts, at the service of the goal of preserving the company and employment. Among the different procedures, the *redressement judiciaire* seems to be by far the most important insolvency regime for companies. To initiate the procedure, the inability of the firm to meet current liabilities with liquid assets needs to be ascertained. The request may come from the debtor himself -who is under the duty to file in a period of 15 days after having ceased payments, the breach of which may imply severe sanctions-, the creditors, the public prosecutor and the court itself.

After the procedure is formally opened, typically the debtor remains in possession and control of assets, and the management remains in place, although they will be subject to authorization by a special judge (*juge commissaire*). In rare cases, the management will be replaced by an administrator, who also needs to report to the special judge. The procedure determines a stay both for unsecured and secured creditors, with the exception of employees, for certain amounts. Reorganization plans play a major role in the proceeding, although it may also end up in liquidation of firm assets, and orderly payment to creditors. Reorganization plans are divided in continuation and transfer plans, depending on whether the current debtor will still be in control of the business. All players may have the initiative to present a plan, though the court is solely responsible, after hearing all affected parties, to decide about its approval, and the other players hold no veto power. In fact, the court may use certain sticks -a long moratorium upon creditors, imposition of liabilities- to guide the goal and content of the plan in the desired direction. Finally, managers of the insolvent firm may be found liable if they have, with fault, caused the insolvency situation. A finding of liability leads to monetary sanctions -up to full payment of unpaid debt- and incapacitation for managing firms.

Germany has also experienced a process similar to the UK. It was considered a very creditor-friendly country, but in 1999 the new regime (*Insolvenzordnung*) softened that character. The procedure may be initiated by the debtor himself or by the creditors, when inability to pay current debt can be shown. The debtor has to file for insolvency within 3 weeks of finding its own inability to pay. Also

potential insolvency, as in the Spanish LC, may allow filing. The court does not only verify the factual insolvency, but also runs a level of assets test. If the assets are unlikely to be able to cover the costs of the procedure, the court will reject the filing.

As soon as the procedure is formally started, the court appoints an administrator who would replace current management. Creditors may change the administrator in the first creditors' meeting, though this happens only in exceptional cases, mostly of very large insolvent debtors in which substantial amounts are at stake for the financial creditors. The administrator is overseen both by the court and by the creditors, who could replace him. Less commonly, the court may authorize the debtor to remain in control in which case the court will appoint a supervisor to oversee management. Non-secured credits are stayed after formal insolvency is declared. Secured creditors over movable assets are stayed up to the first creditors' meeting. Secured creditors over real estate are not automatically stayed, but the court may stay individual enforcement at the request of the administrator, if it is deemed to prevent adequate reorganization.

If the creditors do not decide in favor of preserving the company, and no plan has been presented, the administrator must proceed to liquidate assets and pay creditors in an orderly fashion. Reorganization plans may be presented by the debtor or by the administrator, and they have to be approved by a majority – number and value- of affected creditors. Those who are not affected by the plan are not entitled to vote. The plan has then to be accepted by the debtor, and confirmed by the court, which can refuse confirmation only under specific grounds. Liability imposed on management of the insolvent firm seems not to play a large role, although the violation of the duty to file may trigger liabilities *vis-à-vis* creditors under general principles of tort Law.

Italy knows a wide array of insolvency procedures (*fallimento, concordato preventivo, amministrazione controllata, liquidazione coatta amministrativa, amministrazione straordinaria delle grandi imprese insolventi*), but one of them – *fallimento*- stands out, by far, as the most widely used scheme. The triggering event is again the inability to regularly meet current liabilities. The debtor, creditors, the public prosecutor and the court itself may initiate the procedures. Data show that many filings are brought by creditors. In such cases, the debtor has to be heard and may oppose the insolvency declaration. This explains the relatively high rate of rejected filings in the Italian system.

Once the procedure is formally opened, the debtor is dispossessed of the company, and a court appointed administrator (*curatore fallimentare*) takes over, under the supervision of the court. The procedure implies an automatic stay of non-secured claims. Secured creditors may separately and individually enforce their rights, albeit only after the statement of debtor's liabilities has been prepared and approved, which in practice implies a temporary stay of variable length. Liquidation of assets and orderly payment of creditors seems to be the normal course of events of the procedure, unless a reorganization plan is

drafted and approved. Only the debtor may have the initiative to present a plan. Approval from 2/3 of non-secured creditors, and confirmation by the court –it may be denied on the merits of the plan itself- are both required for it being effective. Liabilities of existing management do not appear to play a major role, although the administrator, on behalf of creditors, may sue the managers for damages accrued to the assets due to faulty behavior.

A comparison of the final outcomes of bankruptcy procedures is also useful to understand what the different legislation imply in practice.

Between 2004 and 2008 out of a total of 6,371 bankruptcy filings in Spain, there have been a total of 316 reorganization plans approvals, or only 5% of the filings. To assess the likelihood of a bankruptcy procedure to lead to reorganization, however, one would need to make two corrections, one that would tend to increase the total, and the other that would decrease it. The upward correction would be needed because there have been some bankruptcy cases that started sufficiently late that there was no possibility for a reorganization plan to be approved. On the other hand, not all reorganization plans succeed and there are a few cases in which, after the approval, the plan fails and the firm is subsequently liquidated. Because neither correction is likely to be large, approximately 5% of Spanish firms filing for bankruptcy are successfully reorganized.

In the UK in the same period 98% of the total of 102,677 filings, consisted of liquidations (compulsory liquidations, creditors' voluntary liquidations, self-employed bankruptcies) and only 2% were successful reorganizations (company voluntary arrangements).⁸ Italian data for 2004-2007 show that 96% of the total of 51,794 filings ended with liquidations and only 4% led to reorganizations. In France out of 218,093 filings, 191,019 or 88% were liquidations. The remaining 27,074, or 12% were reorganization in the sense of firm continuity, or sale of the firm as a going concern. But the figure also includes cases whose final outcome is not known yet. For the case of France there seems to be a somewhat higher chance of reorganization that is not surprising given that the French bankruptcy code prescribes that employment maintenance may advise the continuation of the firm even if it does not maximize creditors' recovery or the value of the firm.

4. A thought model for the Spanish insolvency law

One way of describing bankruptcy laws is by characterizing their ability to promote ex-ante and ex-post efficiency. One would normally think that ex-post efficiency simply requires the maximization of the expected value of the assets of the firm, conditional on the firm having entered a bankruptcy procedure. The

⁸ In these computations we have chosen to ignore administrative receiverships and simple receiverships, since they can lead to assets liquidation or the sale of the firm as a going concern. However, due to the Enterprise Act of 2002, their weight in the period 2004-2008 is negligible.

reason is that control rights should be assigned in such a way as to maximize the value of the assets and financial claims on the assets could then be assigned in any way that promotes ex-ante efficiency.⁹ In a similar way, it seems relatively natural to identify ex-ante efficiency with the maximization of the expected value of a firm.¹⁰

If it were really possible to assign control rights and financial claims on the assets independently of one another, it would then follow that ex-post efficiency would be a necessary condition for ex-ante efficiency. But there are a number of reasons to think that this is not true in practice and that a sizable trade-off between ex-ante and ex-post efficiency exists.

First of all, bankruptcy procedures have substantial legal and administrative costs. This means that a bankruptcy law with lower ex-post efficiency but that induces a lower probability of reaching an insolvency state may be preferable.

What's probably more important is that several individuals involved in the bankruptcy procedure are likely to be cash-constrained (first and foremost the debtor). This implies that not all transfers are possible and that the assignment of control rights and of financial claims are not independent of each other. To give an example, think about a situation in which the maximization of the value of assets requires assigning control rights to the debtor who would keep the firm as a going concern. Imagine, however, that ensuring the availability of credit that promotes ex-ante efficiency required assigning substantial financial claims to the creditor. If the debtor were not cash constrained, all that would be needed would be for the debtor to make a transfer to the creditor. But, given that the debtor is likely to be cash constrained, this is not possible. In this situation ex-ante efficiency may therefore require assigning control rights to the creditors. But because creditors are inherently biased towards liquidation (as the nature of their claims implies that they don't fully reap the gains of upside potential), an ex-post efficiency loss would arise.

A paper that examines in detail the trade-off between ex-ante and ex-post efficiency is Ayotte and Yun (2007) and because we think that it is especially suited to analyze the Spanish case we want to summarize some of its arguments and conclusions.

Ayotte and Yun (2007) start from the observation that bankruptcy laws either allocate significant control rights to third parties, such as judges or insolvency

⁹ For this to be the appropriate notion of efficiency, one needs to assume that preferences are quasi-linear in wealth, that no party is cash constrained, and that the only assets that are involved in the bankruptcy procedure are the assets of the firm. This may not be the case, for instance, when the manager/entrepreneur's reputation also depends on the final outcome of bankruptcy, when workers have firm-specific human capital, or when the losses to creditors may precipitate them in insolvency.

¹⁰ It may be important to determine whether one should think about the maximization of the value of a potential firm that has not been set up yet, or the maximization of the value of the existing firms. But because, we will not discuss this issue we prefer to ignore it.

practitioners (IP), or allow them to mediate in the allocation of these rights to debtors and creditors. The reason why such an arrangement may be superior for debtors and creditors is that third parties can act on “soft” information (e.g., recent evolution of cash flows) that is difficult to describe and that is therefore not contractible. In other words, the discretion of judges or IP’s can enhance the efficiency of ex-ante contracts between debtors and creditors.

It is important to notice that the assumption is not that judges or IP’s have superior information. What’s important is that judges or IP’s provide a technology to include soft information in contractual agreements.

One of the main tasks to be performed by judges and IP’s in a bankruptcy procedure is to determine whether the value of the firm as a going concern (either under current or under new management) is higher or lower than what can be realized through a piecemeal liquidation of assets. Depending on their ability to make sound *business* judgments, this task can be executed with lower or higher probabilities of type I and type II errors¹¹ (respectively, maintaining as a going concern a firm that is worth more if liquidated piecemeal, liquidating piecemeal a firm that is worth more as a going concern). This implies that the ex-post efficiency gains of judicial and IP’s discretion are increasing in the judges and IP’s ability to make business judgments.

As an alternative the bankruptcy law could assign the control rights in a more mechanical way that foregoes the potential gains of judicial and IP’s discretion. But in this case, the bankruptcy law should focus on the ex-ante perspective and should assign control rights to creditors to promote the ex-ante availability of credit by maximizing the recovery of credit upon bankruptcy and by reducing the probability that a state of insolvency prevails.

Based on the previous premises, Ayotte and Yun’s (2007) point is that to a certain extent laws should be best responses to the abilities of its enforcers, more than the other way around. The reason is that it is simpler and more economical to adjust a bankruptcy law to the existing distribution of professional skills than to wait for a decade or so for an appropriate professional elite –in terms of skills and experience- to emerge in the judiciary and the professional pools of insolvency administrators, possessing the appropriate competencies to provide the tailored enforcement envisioned by the law.¹²

Ayotte and Yun’s (2007) conclusion is that the optimal trade off between ex-post efficiency and ex-ante efficiency depends on the ability of the third parties that may be assigned control rights in bankruptcy. If judges and IP’s have high abilities in separating out viable from nonviable firms, the bankruptcy law

¹¹ We follow the terminology used by White (1994).

¹² Ayotte and Yun (2007) mention that the Bankruptcy and Composition Act of the Slovak Republic has been amended 14 times in 10 years.

should make use of these abilities to promote ex-post efficiency. But if judges and IP's have low abilities in discerning viable from nonviable firms, the ex-post gains of discretion are lower and the optimal insolvency law should be more creditor oriented in the sense that it should assign ample control rights and financial claims to creditors. This implies that, in the first case, there would be a higher propensity to reorganization in the sense that, for any exogenously given distribution of firms that reach bankruptcy, there would be more reorganizations than in the second. This does not imply, however, that more reorganizations would *take place* in the first case than in the second, because the distribution of firms in the economy and therefore the distribution of firms that reach bankruptcy would also depend on the choice of the bankruptcy law.

What's more important is that Ayotte and Yun (2007) also ask the following question: What would happen if, in the face of a low ability of bankruptcy judges and IP's, the legal system failed to optimally respond with a creditor oriented bankruptcy code? This question is interesting for the Spanish case, because, as the discussion of the previous section should have clarified, the Spanish bankruptcy code is relatively debtor oriented and yet makes use of judges and IP's who probably know the law well, but who have no special skills, nor clear incentives to make appropriate business decisions regarding the continuation of the firm. The answer to the question provided by Ayotte and Yun (2007) is that "[w]here the bankruptcy code does not provide enough creditor protection to make lending feasible, our model predicts that credit contracts will be written so that distress is resolved outside of bankruptcy, thus reducing bankruptcy usage rates."¹³

In the next section we will show that a view similar to the one described above is compatible with the stylized features of Spanish businesses balance sheets and profit and loss accounts when they are compared to those of businesses subject to different bankruptcy laws in other European countries.

The view that we propose can be summarized as follows. The relatively debtor oriented 2003 Spanish Bankruptcy act, and the low efficiency of bankruptcy procedures in Spain, in particular the low ability of judges and administrators to determine which firms should be liquidated piecemeal and which should be maintained as a going concern and reorganized, imply that, compared to their foreign counterparts, Spanish firms and their creditors make choices that lead to a lower risk of reaching a bankruptcy procedure.

5. Reducing bankruptcy risk? The aggregate evidence

In the introduction we have already documented that the risk of formal bankruptcy is substantially lower for Spanish firms and the comparative analysis of section 2 is our way of claiming that premises (1) and (2) of the view summarized at the end of the previous section hold for Spain.

¹³ Ayotte and Yun (2007), page 5.

To convince the reader that this view is not incompatible with available evidence, in this section we turn to international comparisons of stylized facts that are related to the activities in which firms and lenders can engage to reduce the risk of bankruptcy.

As is obvious, we need to be explicit about the concrete channels that Spanish firms and lenders have available and may use to reduce the risk of bankruptcy. Following the existing literature we conjecture that, *ceteris paribus*, each of the following *activities* reduces the risk of bankruptcy: (a) Choosing low financial leverage; (b) Substituting unsecured with secured debt; (c) Choosing projects that trade off return for lower risk; (d) Choosing projects that trade off return for lower liquidation costs (to minimize the cost of liquidating the firm before a worsening financial situation precipitates into a formal bankruptcy procedure); (e) Increasing lenders' screening and monitoring.

Following these ideas, in each of the subsections of this section we will investigate whether aggregate data indicate that for Spanish firms, compared to their foreign counterparts, (a) Leverage is lower; (b) The weight of tangible fixed assets that can be used as collateral is higher; (c) Profitability (measured by return on assets) is lower; (d) The weight of (industry) specific assets that have low liquidation value is lower; (e) The weight of debt held by banks is higher given that banks are more likely to screen and monitor firms than other creditors that have smaller stakes, such as trade creditors.

Before turning to the empirical analysis, however, it is important to notice that some of the activities mentioned above may be strategic substitutes in reducing the risk of bankruptcy. For instance, securing debt makes it easier to have higher leverage and may also reduce the value of monitoring. On the other hand, the choice of a less risky project makes liquidation costs less important and may therefore reduce the incentives to choose projects with lower liquidation costs.

This implies that that our view is consistent with evidence of a differential intensity in some of these activities, but *not necessarily all*. In other words, while we conjecture that increasing the intensity of each of the activities (a)-(e) *alone* reduces the risk of bankruptcy, we cannot exclude that a reduction in the risk of bankruptcy is obtained optimally by increasing some activities and by decreasing or maintaining constant the rest.

In this section we compare aggregate leverages, assets and profitability of Spanish firms with those of firms in France, Germany and Italy using data on balance sheets and profit and loss accounts of nonfinancial firms available from the Bank for the Accounts of Companies Harmonized (BACH). We have restricted our comparative analysis to this limited set of countries because they are the countries in BACH for which we have also reported bankruptcy rates. The Appendix contains a description of the firms contained in BACH for each

country. In Table 1 we summarize the balance sheets of the firms included in BACH for the year 2006.

Given that the countries that we consider have different sectoral compositions and different size distributions, to make the comparisons as meaningful as possible we will look separately at the most important sectors in the 1-digit NACE classifications (D-K) and we will also distinguish among small firms (with a turnover lower than 10 million €), medium firms (with a turnover between 10 and 50 million €), and large firms (with a turnover over 50 million €).

5.a Financial leverage: From bankruptcy law to capital structure

To document the extent of leverage, we consider two different measures of aggregate financial leverage.

The first one, Nonequity Liabilities/Total Assets, is broader and is influenced by the volume of trade, given that includes accounts payable in the numerator and accounts receivable in the denominator. In terms of this measure (see Table 2) Spanish firms exhibit substantially lower leverage ratios than those of the remaining countries. Aggregating over sectors, small and medium firms have a difference of 8 and 14 points respectively, while large firms only 7. Spanish firms have the lowest leverage for 16 of the 21 sizes/industry classes and the second lowest in the remaining 5. The only cases in which the leverage of Spanish firms is higher than the mean of the other 3 countries are medium firms in sector H (Hotels and restaurants).

The second measure of financial leverage, Debt/Capital, is more restrictive and it excludes trade credit but also other factors that may have nothing to do with financing, such as pension liabilities arising from labor market contracts and assets held against them. In terms of this measure (see Table 3) Spanish and French firms exhibit substantially lower leverages than German and Italian firms. Among small firms the differences are of the order of 8 points (with Italy) and 20 points (with Germany). Among medium firms the differences are of the order of 9-14 points. Among large firms the differences are of the order of only 2-7 points.

Notice that, of the previous two measures of leverage, Rajan and Zingales (1995) regard Debt/Capital as the most appropriate mainly because it is not affected by the volume of trade credit in different industries. But given that trade credit is an important source of financing and given that we control by industry and by size, the comparisons of the Nonequity Liabilities/Total Assets of Table 2 are also important.

The comparisons of Tables 2 and 3 indicate that the aggregate financial leverage of nonfinancial firms of countries with bankruptcy codes which are not creditor oriented (Spain, France, and Italy) is substantially lower than that of the firms of the country with higher creditor orientation (Germany). Spanish firms in

particular can be singled out for their low leverage, and especially small and medium sized firms.

The evidence of Tables 2 and 3 is therefore consistent with the idea that the creditor orientation of the bankruptcy code has an impact on firms' leverage and that this is especially true for small and medium firms.¹⁴ Because high levels of leverage are normally associated with higher probabilities of bankruptcy, the evidence also contributes to explain the low rates of Spanish business bankruptcies. But we should also acknowledge that, while French and Italian firms have leverages similar to Spanish firms, the usage rates of the formal bankruptcy systems in France and Italy are much higher. The next subsections try to account for these differences.

To see that it makes sense to view the comparisons of Tables 2 and 3 as being related to the different insolvency laws, it is important to discuss the possible effects of other known determinants of leverage.

First, notice that by controlling for size and industry in Tables 2 and 3 we factor out the effects of two well documented determinants of financial leverage. Second, while the evidence is sometimes mixed, low leverages are normally expected when (i) capital and personal tax rates are low (because the tax savings of issues debt are lower); (ii) the weight of tangible fixed assets is lower (because tangible fixed assets can be used as collateral); (iii) returns are higher (because returns are an alternative source of financing).¹⁵ But because Spanish firms, as compared to the other three countries, do not face lower taxes¹⁶, they have a higher weight of tangible fixed assets¹⁷ and their projects yield lower returns,¹⁸ our finding of lower leverages is all the more remarkable and makes our conjecture of a relationship with the insolvency legislations all the more sensible.

5.b Tangible fixed assets: From bankruptcy law to secured debt? Or is it mortgage collateral efficiency?

If institutions and in particular the bankruptcy code do not protect creditor rights, a possible response for a firm that attempts to obtain credit is to choose an asset structure that makes it easy to secure its debt. If this were true, one

¹⁴ Large firms are often believed to be less dependent on the local institutions for creditor protection because they have easier access to equity financing and to credit from foreign sources.

¹⁵ See, for instance, Titman and Wessels (1988) and Rajan and Zingales (1995).

¹⁶ According to the OECD Tax Database, in 2006 Spain had the second highest Corporate Income Tax Rate of the four countries (35%), a higher highest top marginal rate in its Personal Income Tax (45%, also applicable for sole proprietorships), although it had the second lowest Effective Tax Rate on Dividends. However some of these rates were lowered in subsequent years. For more information see www.oecd.org/ctp/taxdatabase.

¹⁷ See subsection 5.b.

¹⁸ See subsection 5.c.

would expect to observe a negative relationship between the creditor orientation of the bankruptcy code and the weight of tangible fixed assets.

For this reason we analyze the ratio of tangible fixed assets to total assets in Table 4 and the tangible fixed asset turnover (i.e., turnover divided by tangible fixed assets) in Table 5.

The result that emerges from Table 4 is that Spanish and German firms generally have substantially higher ratios than their French or Italian counterparts. In particular, of the total of 21 size/industry classes, Spain has the highest ratio in 14 cases and the second highest in 6 cases. The only cases in which Spanish firms have a lower ratio than the mean of the remaining countries are sector E (Electricity, gas and water supply) for both small and medium firms, sector K (Real estate, renting and business activities) for both medium and large firms and sector F (Construction) for large firms.

The evidence on Spanish firms is consistent with the idea that high ratios of tangible fixed assets are a response to a bankruptcy code with little creditor protection. But the evidence on the remaining countries suggests that there must be some other important determinant of these ratios, given that creditor protection is high in Germany and low in France and Italy.

A possible explanation is that mortgage collateral is known to be very efficient in Spain and Germany, but not in France and Italy. According to a survey of the European Mortgage Federation (2007), for instance, the usual interval between mortgage foreclosure and the actual distribution of the proceeds of the sale is 7 to 9 months in Spain, 12 months in Germany, 15-25 months in France and 5-7 years in Italy. For France it should also be kept into account that the French bankruptcy code and the practice of bankruptcy courts do not provide much protection for mortgage holders, and it is therefore not surprising that French firms substitute tangible fixed assets with accounts receivables to secure their debt (see Davydenko and Franks (2007)).

Relating tangible fixed assets to firm turnover provides an even clearer indication of the fact that firms in Spain overinvest in tangible fixed assets. Table 5 reports the tangible fixed asset turnover which is normally seen as an indicator of the efficiency of the investment in capacity. In 20 of the 21 size/industry classes (all but large construction firms) Spanish firms have a tangible fixed asset turnover lower than the average of the other three countries. In 10 size/industry classes the Spanish turnover is less than half the average of the other three countries. In 14 of the 21 size/industry classes Spanish firms have the lowest turnover of the four countries

5.c Profitability

Another way to reduce the risk of bankruptcy is to choose projects that trade off return for lower risk. Table 6 shows the most common measure of a firm's

profitability, ROA (return on assets), computed as the EBITDA (earnings before interests, taxes, depreciation and amortization) over total assets in order to avoid that differences in accounting and tax systems across countries distort the conclusions. Table 6 shows a consistent pattern in which Spanish firms' ROA is lower than the average of the other three countries.

ROA is often decomposed as the product of profit margin (EBITDA over turnover) and asset turnover (turnover over total assets), which are shown in Tables 7 and 8, respectively. While the profit margin for Spanish firms is nearly always greater than the average of the other three countries, the asset turnover is always lower than the average. This means that the low ROA of Spanish firms is driven by a low asset turnover, which indicates low levels of operating efficiency.¹⁹

5.d Specific assets

Just as it seems reasonable to think that private contracting responds optimally to the existing bankruptcy code and to the way it is implemented, lowering leverage when creditor protection is limited or poorly enforced, it seems natural to think that in these situations firms will shy away from firm or industry specific assets that may have low value if a sectoral downturn or an idiosyncratic situation of financial distress make a liquidation desirable to avoid a possible bankruptcy procedure.

In Table 9 we report the ratios of specific assets, i.e., plant and machinery, to total assets computed from BACH. No clear pattern emerges from Table 9. More often than not Spanish firms have higher ratios than those of the other countries, but the differences are never sizable.

Relating the investment in specific assets to turnover, on the other hand, indicates that Spanish firms invest more in specific assets than the firms in the other three countries (Table 10). However, before drawing conclusions from Tables 9 and 10 we need to keep in mind that plant and machinery are fixed assets that are both specific and tangible. As discussed in section 5.b, Spanish firms have substantially higher ratios of tangible fixed assets to total assets. Therefore, the proportion of plant and machinery may be determined by two opposite effects, a "specificity effect" that should make Spanish firms have less plant and machinery than their European counterparts and a "tangibility effect", which should make them have more.

A first reading of Tables 9 and 10 seems to lend no support to the idea we proposed that Spanish firms may underinvest in specific assets as a way to

¹⁹ It is worth noticing that asset turnover, just as tangible fixed asset turnover, is computed using the assets' net value, i.e., net of accumulated depreciation. However, we have also computed them using the assets' gross value in order to rule out that differences in accounting rules across countries, in interaction with tax systems, are the factors behind the differences in these ratios.

reduce the risk of formal bankruptcies (because in this way they prepare for informal workouts that may avoid formal bankruptcies). To see that this conclusion is unwarranted, it is important to reflect on the fact that liquidations take place not only in informal workouts, but also in formal bankruptcy procedures and that reducing the risk of bankruptcy (with all the activities discussed above) also reduces the gain from underinvesting in specific assets.

In other words, as was mentioned at the start of this section, the strategic substitutability of the activities in which firms can engage to reduce the risk of bankruptcy makes it possible that at the optimum firms will engage in some of them with less intensity than if they had a lower aversion to bankruptcy and the evidence contained in Tables 9 and 10 should not therefore be seen as opposing our view of the Spanish bankruptcy legislation.

5.e Bank debt

Table 11 reports the weight of debt held by banks and shows a very consistent pattern with Italian and especially Spanish firms having shares of bank debt higher than the average of their French and German counterparts. Spanish firms in particular have higher shares than the average of the other three countries in virtually all size/industry classes and in 10 of the 21 classes they have the highest share of the four countries.

Table 11 is therefore consistent with the idea that Spanish firms and their lenders react to an unattractive bankruptcy legislation by using means of financing that promote screening and monitoring and therefore reduce the risk of bankruptcy.

5.f How to explain the difference between Spain and France? Early termination, refinancing, and sanctions

The arguments proposed and the aggregate evidence exhibited so far have shown several similarities between Spain and France (debtor friendly code, inefficient business decisions in case of reorganization, low leverage) but also two important differences, in ratios of tangible fixed assets and usage rates. We now try to explain how to accommodate these differences in our view of the problem.

The efficiency of mortgage collateral in Spain implies that secured creditors are unlikely to be held up by a debtor. By contrast in France a secured creditor knows that the recovery rate of its secured debt in bankruptcy may be low, for two reasons. First, it takes longer for the proceeds of the sale to be distributed to secured creditors. Second, secured creditors may suffer a loss if the judge decides to sell the firm as a going concern to a buyer who commits to maintaining employment in exchange for a low economic offer. This implies that even a secured creditor may have incentives to give extra credit in case of

financial distress with an eye to increasing the probability of recovery of its existing credit.

This in turn implies that a situation of financial distress is more unattractive for a Spanish manager/entrepreneur because in such an event he has almost no bargaining power with creditors and for this reason he is more likely to prefer a project with low risk and/or a low cost from early termination and will therefore reach a formal bankruptcy procedure with smaller probability.

Another difference between the French and the Spanish legislation may help explain the wildly different formal bankruptcy usage rates. The French legislation includes sanctions for debtors who do not file for bankruptcy in time. But the possibility of sanctions or liabilities conditional on having filed in time is remote. This means that French company administrators know that a voluntary filing for bankruptcy, provided it is timely, reduces the probability of a sanction very substantially. By contrast the Spanish legislation includes sanctions for late filing (in this case guilt is presumed) but also for gross negligence or fault (*culpa grave*) that includes having “caused or aggravated the insolvency.” This means that even a timely filing does not drive to 0 the probability of a finding of guilt. As a consequence, firm managers may prefer not to file at all. But this, in turn, means that they prefer not to find themselves in the condition of having to file and to avoid such a situation, and so they may choose projects with low levels of risk and with a possibility of an early liquidation without large losses.

6. Recent developments

The current crisis has had very different repercussions on formal bankruptcy proceedings in different countries. In Figure 4 we report the bankruptcy rates for several European countries. Most countries (the Netherlands, Denmark, the UK, Finland, Sweden) have experienced increases in a range of 30-120% between the beginning of 2007 and the third or the fourth quarter of 2009. The only two exceptions are Germany and Spain. Germany has been fairly stable.²⁰ Spain, on the other hand, while it still has remarkably low bankruptcy rates, has experienced an increase of approximately 550% between the first quarter of 2007 and the fourth quarter of 2009. This is seen more clearly in Figure 5 and should be a reason for concern, because unless sufficient resources are deployed, judicial congestion in the specialized commercial courts handling bankruptcy cases and other commercial matters (*Juzgados de lo Mercantil*) is likely to increase very substantially the duration of bankruptcy proceedings.

Figure 6 and 7 give some additional detail about Spanish bankruptcy filings. Figure 6 shows that the normal pattern of bankruptcy rates has not been altered by the crisis: bankruptcy rates are lowest for micro firms (with 0-9 employees)

²⁰ This may be a consequence of the provision of the German bankruptcy code that does not allow a bankruptcy to be filed if the firm does not have assets sufficient to cover the legal costs.

higher for small firms (10-49 employees), still higher for large firms (200 employees or more), and highest for medium firms (50-199 employees). Not surprisingly, Figure 7 shows that the effect of the crisis has been largest on the construction sector. But it also shows that even now the bankruptcy rates in the construction sector are lower than in manufacturing and energy. Figure 8 finally shows that the growth rates of bankruptcy rates for companies and self-employed have been similar, although the current bankruptcy rate for self-employed is still around 20 times lower than the corresponding rate for firms.

The onset of the crisis and the spectacular increase in bankruptcy filing in Spain has led to a modification of the Spanish bankruptcy law. Chapter III of Real Decreto-Ley 3/2009, of March 27 has introduced a number of significant modifications. Some of these (the availability of the simplified procedure for firms with up to € 10 million in debt, the changes in the compensation of insolvency administrators) were already mentioned in section 3. Here we simply discuss one change that has stirred some debate and that deserves some comments.

The change has to do with the provision of collateral for refinancing purposes in the two years prior to filing for bankruptcy. The LC allowed the provision of collateral to be clawed back, with an important degree of discretion for the court in interpreting the relevant legal provision on the specific circumstances of the case. The result is that there was a possibility of claw-back not only when there was evidence that the refinancing was meant to favor one creditor to the detriment of the rest, but also if the judge believed that the refinancing did not help the firm. If the collateral provision was clawed back, moreover, the creditor's priority could be lowered to subordinated credit if there was a finding of bad faith.

In the hasty debate that preceded the Real Decreto-Ley, a concern was aired that this provision would make it very difficult for firms to refinance their debt with banks, and that creditors' demand for legal security required an intervention that would ultimately reverberate in the interest of firms in financial distress. What was not mentioned in the debate is that there had been a total of 5 cases in which the collateral was clawed back from the onset of the law, on September 1, 2004. In other words, even though the wording of the law was generic enough to justify a concern, this concern should have not survived the test of available evidence.

While the effects of the modification of the law are not known yet, in our view there are at least two reasons for concern. The first is that the new law may turn into a Catch 22-type of situation for firms that may impede refinancing rather than facilitating it. The reasons are the following: A possible judicial interpretation is that the absence of a formal approval of creditors representing 3/5 of debt and of a report of an independent expert justifies the presumption that the refinancing was not in the interest of the firms and its current creditors. On the other hand, there are reasons to believe that a firm that is considering refinancing its debt would not want to alarm its current creditors requesting

their approval because this may indicate that (i) a situation of insolvency is imminent, and (ii) without a substantial majority approval there may be reasons for a judge to think that the refinancing is not in the interest of the firm or its current creditors.

The second reason to be concerned about the modification of the LC is that it may have an anticompetitive effect because the approval of 3/5 of existing creditors gives an advantage to incumbent creditors over potential competitors and may therefore make it more costly for firms to obtain financing.

One more observation about the recent development is useful. As was mentioned in section 3, the LC mandates that the court should examine the potential liabilities of the debtor. The rate of fortuitous findings over all findings on this matter from the onset of the law until the end of 2007 has been of 80.39%, but for 2008 it goes down to 73.43%. In other words, contrary to what one would expect, judges are more inclined to find debtors –essentially, the managers of the insolvent firm- guilty (to have caused or aggravated the insolvency) despite the fact that the crisis makes insolvency much more likely, even when no misbehavior of any kind may be attributed to management of the insolvent firm.

7. Discussion

In this work we have ignored two factors that could be related to the Spanish business bankruptcy rate. The first is that labor regulations may interact with business financial distress and bankruptcies. Claessens and Klapper (2005), for instance, find a negative relationship between bankruptcy rates and labor regulation. They suggest that labor regulations may affect bankruptcy rates through their impact on business demography. Since restrictive labor laws may reduce entry rates and entry rates are generally positively correlated with exit rates, more restrictive labor laws may imply lower exit rates and consequently lower bankruptcy rates. However, our findings do not substantially change when we take into account exit rates, as it is shown in Figure 3.

The second is that there may be reasons to think that there is some degree of hysteresis in bankruptcy rates and that the Spanish business bankruptcy puzzle may be due in part to the fact that the new law enters into force in substitution of a chaotic and archaic procedure for which there was no demand.

We have also explored the possibility of analyzing the effect of the introduction of the 2003 Spanish Bankruptcy act.²¹ To do this we have investigated whether the capital and asset structures of Spanish firms in 2006 differed substantially from the ones of 2002.²² The only difference worth reporting is that large

²¹ We thank Tano Santos for suggesting this exercise.

²² The 2003 Spanish Bankruptcy act entered into force only in the last quarter of 2004. According to bankruptcy experts we have interviewed, it can be claimed that in 2002 there was hardly any anticipation of the new law that could have affected the 2002 balance sheets of Spanish firms.

Spanish firms have partially closed their leverage gap with respect to their foreign counterparts. We are reluctant to draw implications from this observation. But we do take some comfort in the fact that the introduction of the new law, that has led to no changes in the usage rates of formal bankruptcy, has also been accompanied by no changes in the balance sheets of Spanish firms, as this may provide some additional indication of a connection between the usage rates and the financing of productive activities.

The view that we have proposed of the Spanish bankruptcy code and its interaction with economic and financial decisions can be summarized in the following terms.

- The Spanish bankruptcy law endows the debtor with sufficient leeway to attempt the continuity of firm, but does not guarantee that the continuation decision is made efficiently. In other words, it sacrifices the protection of creditor rights without achieving sizable gains in terms of ex-post efficiency.
- The efficiency of mortgage collateral in Spain provides a source of business financing that is secure for the creditor and leads to little renegotiation in case of financial distress.
- The potential sanctions that a company manager faces in case of bankruptcy make it a very unattractive option from the point of view of expected liabilities.
- All the above factors lead to a choice of projects with low risk and low return, and to the purchase of tangible fixed assets that can be used as collateral, and a capital structure with low leverage.

It is unclear whether low usage rates of formal bankruptcy procedures should be considered undesirable in general. But in this paper we have made a first attempt to interpret the strikingly low usage rates of formal bankruptcy procedures in Spain. We have shown that our theory is not contradicted by international comparisons of the stylized features of balance sheets, and the profit and loss accounts of nonfinancial firms. According to our view, the low usage rates of formal bankruptcy procedure can be interpreted as an indication that the Spanish insolvency legislation is implicitly favoring the choice of projects with low risk and low returns.

As we mentioned at the start, because we only make use of aggregate data, we cannot claim that we have shown that our theory is confirmed by data. But we believe that the stylized facts that we have documented are sufficient at least to encourage further research on this issue along the lines pursued here.

We don't have enough evidence to comfortably draw policy implications from our work. But at this stage if we had to venture directions of change for the Spanish bankruptcy legislation, we would propose to eliminate what we have identified as the causes of the Spanish business bankruptcy puzzle. We would support a bankruptcy regime with more protection of creditor rights (e.g., making it easier for a creditor to propose the liquidation or a reorganization

plan), more possibilities to direct the appointment of professional insolvency practitioners (and probably actively involving creditors in the appointment, along the lines of the German or the English systems), and that relaxes the concern of company managers that an external adjudicator such as the Court running the bankruptcy proceeding may impose severe sanctions on them, on the basis of a criterion as vague and elusive as gross negligence in the running of a business.

Appendix: The data

The main data sources this paper uses are the Bank for the Accounts of Companies Harmonized (BACH), Eurostat's business demography statistics and several national sources.

A.1 BACH

BACH is a database containing harmonized annual accounts statistics of non-financial enterprises for 11 European countries, Japan and the United States, broken down by major activity sector and by size. It is the result of the cooperation between the European Commission and the European Committee of Central Balance-sheet data offices (ECCB), whose members are several European central banks. Its main goal is the harmonization of the data to make them comparable across countries. However, perfect comparability has not been fully achieved yet, due to the special characteristics of the national accounting methodologies; but several documents, elaborated by the ECCB and the national central banks, help the researcher determine which comparisons can be made. More information on BACH can be found in European Commission and European Committee of Central Balance Sheet Offices (2006) and in Cano (1997).

This paper uses BACH data on 4 European countries -Spain, France, Germany and Italy- and on the following productive sectors:

D-Manufacturing
E-Electricity, gas and water supply
F-Construction
G-Wholesale and retail trade
H-Hotels and restaurants
I-Transport, storage and communication
K-Real estate, renting and business activities

Firms are also classified by size, according to the following criterion:

Size class	Turnover
Small	<10 Million €
Medium	Between 10 & 50 Million €
Large	>50 Million €

The distribution of firms by size for 2006, the relevant countries and the relevant sectors is shown in the table below, in % of the total numbers:

	Spain	France	Germany	Italy
Small	98.7	86	65	41
Medium	0.9	11	24	47
Large	0.4	3	11	11
Total number of firms	339,939	182,157	41121	39,390

Similarly, the distribution of employees for 2006 is:

	Spain	France	Germany	Italy
Small	52	31	8	12
Medium	8	21	18	31
Large	39	48	74	57
Total number of employees	4,439,102	8,713,318	5579064	4,235,148

Another important aspect of the database is its coverage ratio, i.e. how large are the samples relative to their population sizes, where this ratio may be computed using number of employees or turnover (the so-called coverage base). The tables below summarize this information:

Coverage ratios	Spain	France	Germany	Italy
Small	44	n.a.	n.a.	n.a.
Medium	46	n.a.	n.a.	n.a.
Large	48	n.a.	n.a.	n.a.
Total	46	72	73	74

Country	Coverage base
Spain	Employees
France	Employees
Germany	Turnover
Italy	Turnover

Finally, another important issue is whether the companies' accounts are consolidated or not, since firms with unconsolidated balance sheets may appear to have lower leverage than otherwise identical firms who report consolidated balance sheets (Rajan and Zingales, 1995)

Country	Consolidated data?
Spain	Non-consolidated
France	Non-consolidated
Germany	Non-consolidated
Italy	Non-consolidated

A.2 Eurostat business demography statistics

In this paper we use Eurostat business demography statistics to obtain the stock of firms and the firm deaths in a certain country and year. The stock of firms is the population of enterprises that were active at any time in the year, even for a limited time. Deaths relate to real enterprise deaths, so that they do not include neither exits from the population due to mergers, take-overs, breakups and restructuring of a set of enterprises nor exits from a sub-population resulting only from a change of activity. Moreover, deaths are not confirmed until after two years to exclude the possibility of a firm reactivating.

A.3 National Sources

National Sources are mainly the National Central Banks and the National Institutes of Statistics. They are used to obtain bankruptcy figures on corporations and self-employed.

References

Acharya, V. V., R. K. Sundaram, and K. John (2008), "Cross-Country Variations in Capital Structures the Role of Bankruptcy Codes," AFA 2005 Philadelphia Meetings; Tuck Contemporary Corporate Finance Issues III Conference Paper, December.

Ayotte, K., and H. Yun (2007), "Matching Bankruptcy Laws to Legal Environments," *The Journal of Law, Economics, & Organization*, vol. 25, no. 1.

Cano, J.R. (1997), "Las comparaciones internacionales de empresas no financieras y la base de datos BACH," Central Balance Sheet Office, Bank of Spain.

Cerdá, F. and I. Sancho (2000), *Curso de Derecho concursal*, Colex, Madrid.

Claessens, S. and L. F. Klapper (2005), "Bankruptcy around the World: Explanations of Its Relative Use," *American Law and Economics Review*, vol. 7. no. 1

Credireform Economic Research Unit (2007), "Insolvencies in Europe"

Davydenko, S. A., and J. R. Franks (2008), "Do Bankruptcy Codes Matter? A Study of Default in France, Germany, and the U.K.," *The Journal of Finance*, vol. LXIII, no. 2., April.

Djankov, S., O. Hart, C. McLiesh, and A. Shleifer (2008), "Debt Enforcement around the World," *Journal of Political Economy*, vol. 116, no.6

European Committee of Central Balance Sheet Offices and European Commission (2006), "BACH: Guide for the database users"

European Mortgage Federation (2007), "Study on the efficiency of the Mortgage Collateral in the European Union," EMF Publication, May 2007.

Ganuzza, J. and Gomez, F. (2008), "Realistic Standards: Optimal Negligence with Limited Liability", *The Journal of Legal Studies*, vol. 37, June, 577-594.

Gennaioli, N. and S. Rossi (2008), "Judicial Discretion in Corporate Bankruptcy," CEI Working Paper Series, no. 2008-5

Giannetti, M. (2003), "Do Better Institutions Mitigate Agency Problems? Evidence from Corporate Finance Choices," *Journal of Financial and Quantitative Analysis*, 38(1), 185-212.

Grossman, S. J. and O. D. Hart (1982), "Corporate Financial Structure and Managerial Incentives," in *The Economics of Information and Uncertainty*, 107-140, John McCall, ed.

Jappelli, T. and Pagano, M. (2002): "Information sharing, lending and defaults: Cross-country evidence," *Journal of Banking & Finance* 26, 2017-2045.

Jensen, M. C. and W. H. Meckling (1976), "Theory of the firm: Managerial behavior, agency costs, and ownership structure," *Journal of Financial Economics*, 3, 305-360.

Kim, M. and V. Maksimovic (1990), "Debt and input missallocation," *The Journal of Finance*, vol. XLV, no. 3., April.

La Porta, R., F. Lopez de Silanes, A. Shleifer, and R. W. Vishny (1997), "Legal Determinants of External Finance," *Journal of Finance*, 53, 1131-1150.

La Porta, R., F. Lopez de Silanes, A. Shleifer, and R. W. Vishny (1998), "Law and Finance," *Journal of Political Economy*, 106, 1113-1155.

López, C., M. García and B. Torre (2009), "The influence of bankruptcy law on equity value of financially distressed firms: An European comparative analysis," *International Review of Law and Economics*, 29, 229-243.

McBryde, W. W., A. Flessner, and S. Kortmann (editors) (2003), *Principles of European Insolvency Law*, Kluwer, The Hague.

Morrison, E. (2008): "Bankruptcy's Rarity: An Essay on Small Business Bankruptcy in the United States," proceedings from the Second ECFR Symposium on Corporate Insolvency (October 2007), 172-188.

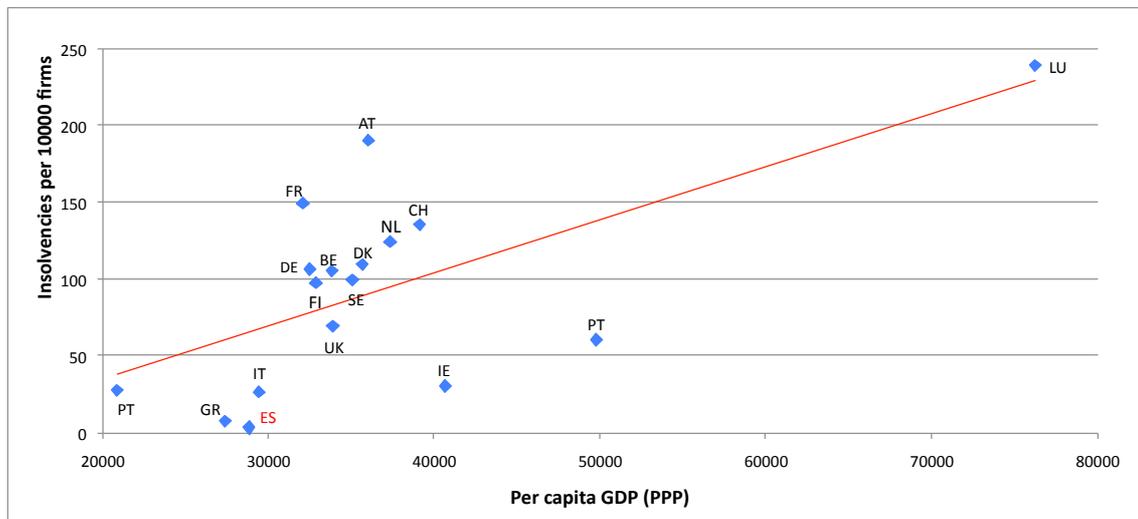
Qian, J. and P. Strahan (2007), "How Laws & Institutions Shape Financial Contracts: The Case of Bank Loans," *Journal of Finance*, 52(6), 2803-2834.

Rajan, R.G. and L. Zingales (1995), "What Do We Know about Capital Structure? Some Evidence from International Data," *The Journal of Finance*, vol. L, no. 5., 1421-1460.

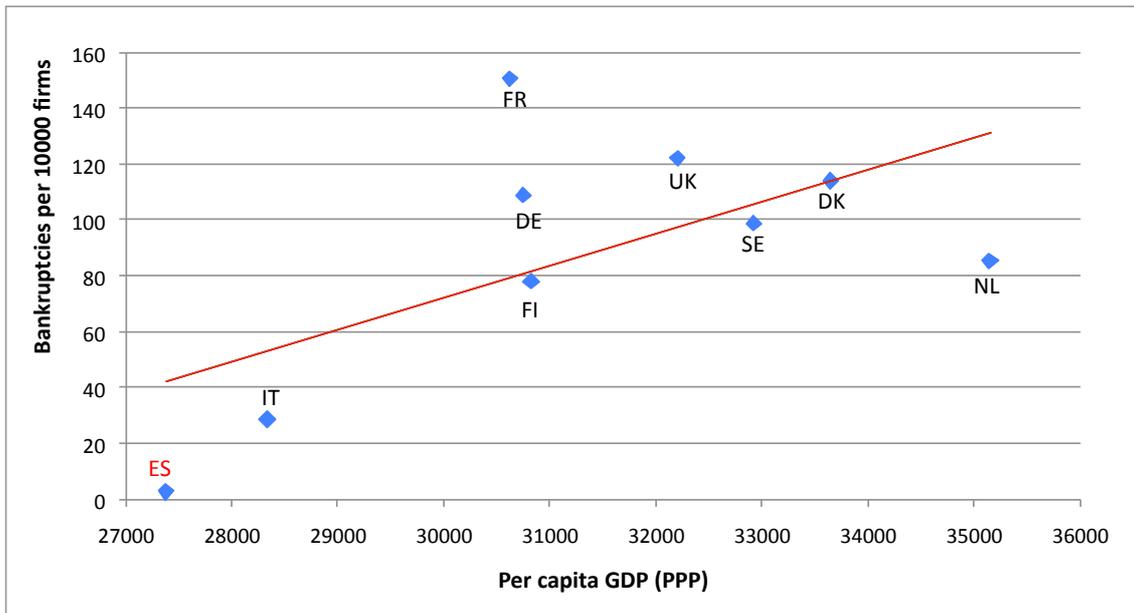
Shavell, S. (1986), "The judgement proof problem," *International review of law and economics*, 43-58.

Titman, S., and R. Wessels (1988), "The Determinants of Capital Structure Choice," *Journal of Finance*, 63, 1-19.

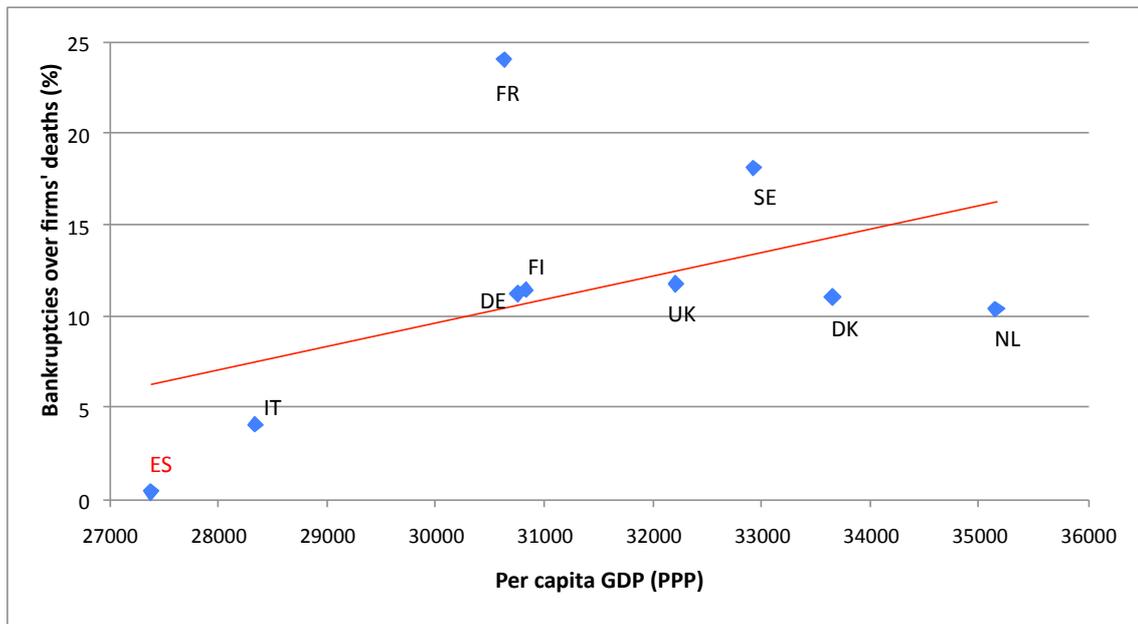
White, M. (1994) "Corporate Bankruptcy as a Filtering Device: Chapter 11 Reorganizations and Out-of-Court Debt Restructurings," *Journal of Law, Economics and Organization*, 10, 268-295

Figure 1: Insolvency rates and GDP, 2006

Source: Authors' calculations on CreditReform Economic Research Unit (2007) and World Economic Outlook data

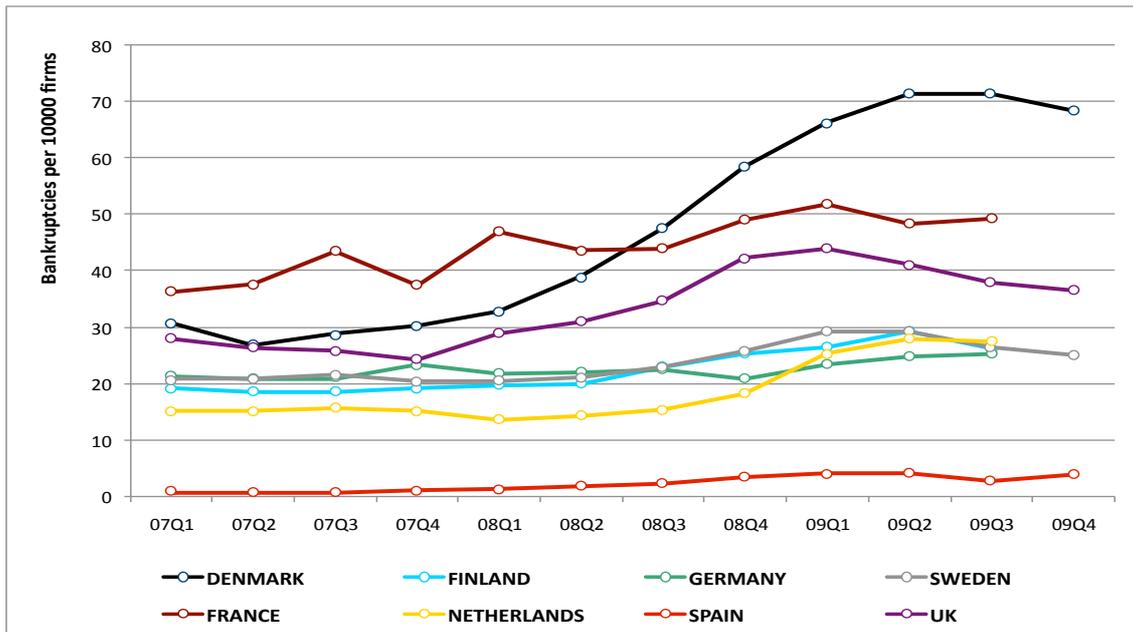
Figure 2: Bankruptcy rates and GDP, 2004-06

Source: Authors' calculations on data from Eurostat, World Economic Outlook and various National Sources

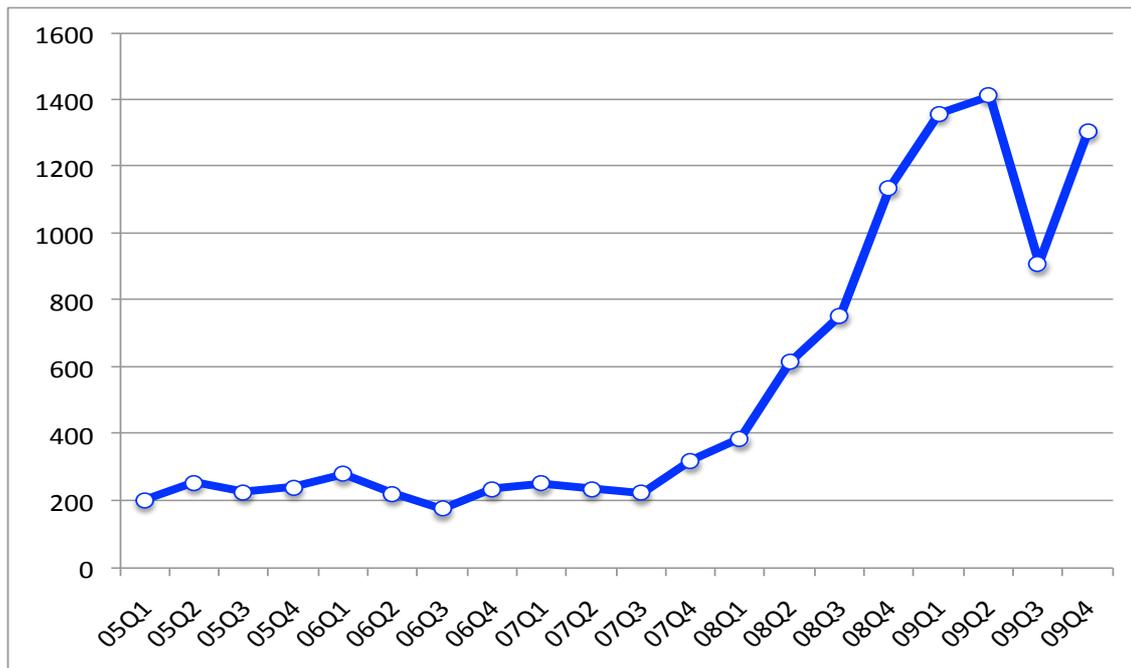
Figure 3: Conditional Bankruptcy rates and GDP, 2004-06

Source: authors' calculations on data from Eurostat, World Economic Outlook and various National Sources

Figure 4: Bankruptcy rates, 2007-2009

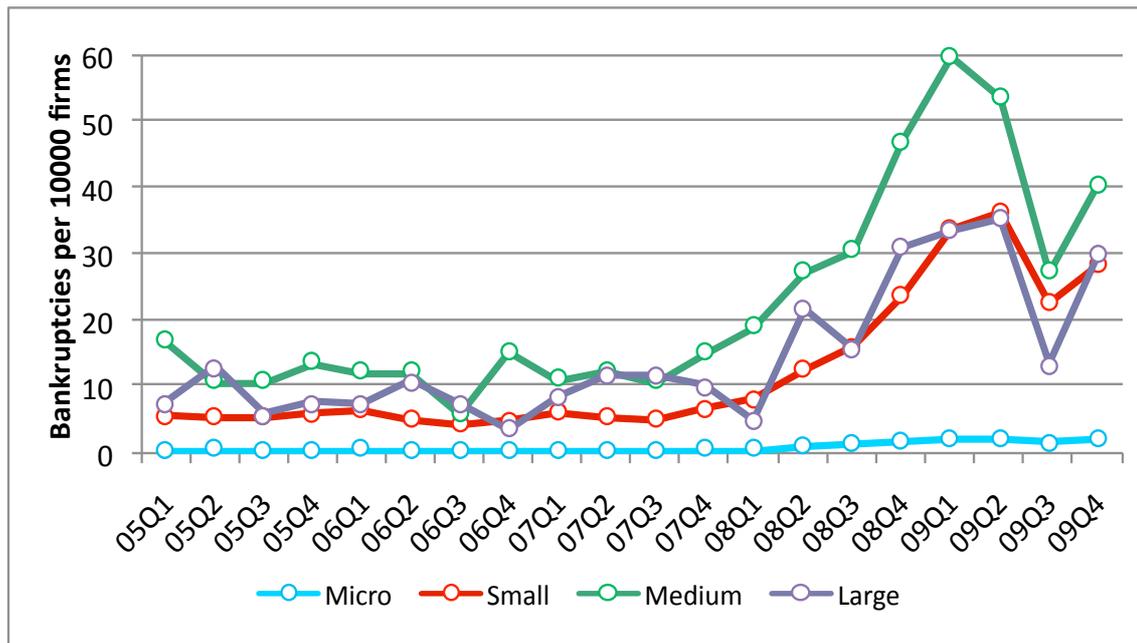


Source: Authors' calculations on data from Eurostat and various National Sources

Figure 5: Total bankruptcies in Spain (firms & self-employed)

Source: Authors' calculations on data from Instituto Nacional de Estadística

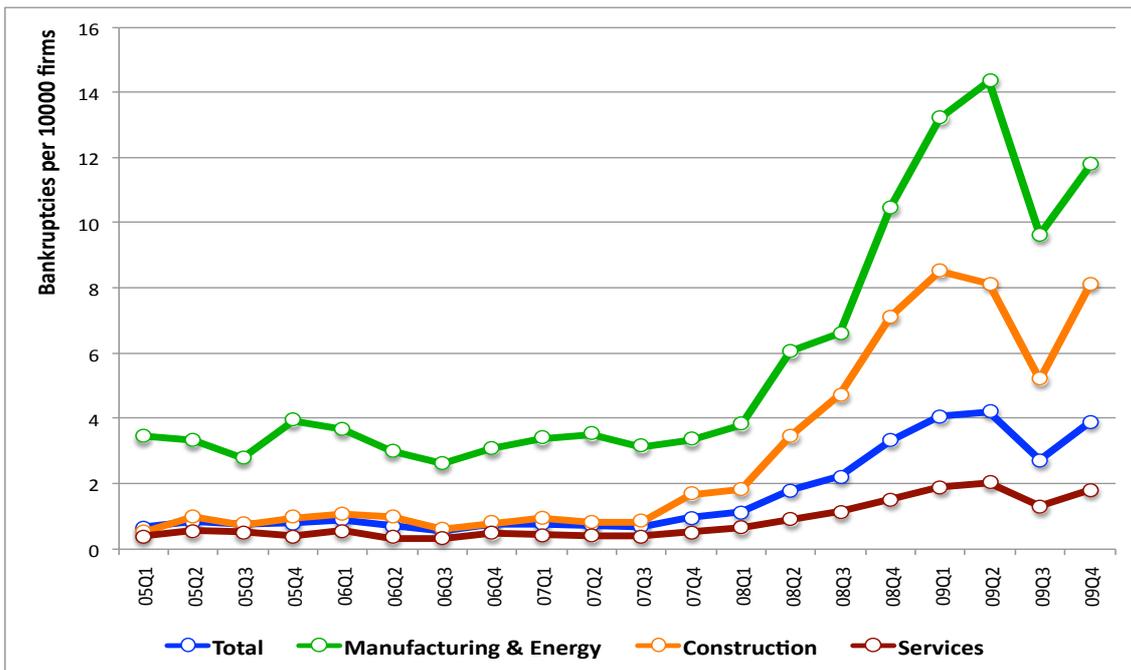
Figure 6: Bankruptcy rates by size (Spain)



Source: Authors' calculations on data from Instituto Nacional de Estadística

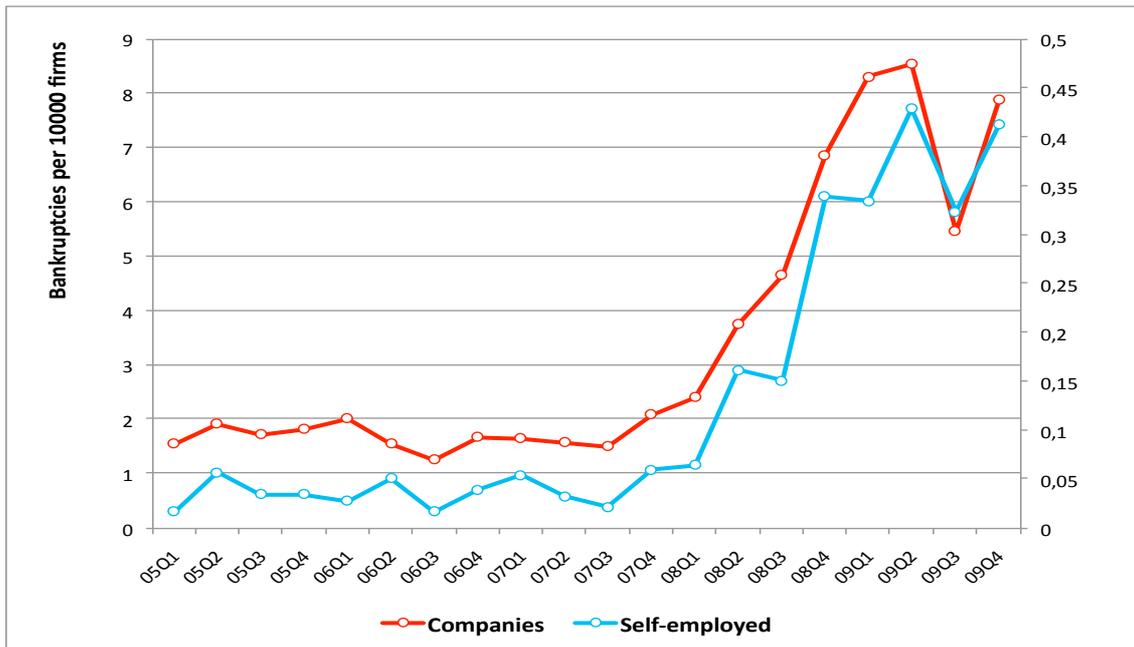
Size	Number Employees
Micro	[0,9]
Small	[10,49]
Medium	[50, 199]
Large	≥ 200

Figure 7: Bankruptcy rates by sector (Spain)



Source: Authors' calculations on data from Instituto Nacional de Estadística

Figure 8: Bankruptcy rates for companies and self-employed (Spain)



Source: Authors' calculations on data from Instituto Nacional de Estadística. The left axis shows the scale for firms, the right axis the scale for self-employed.

Table 1: Balance Sheets
(each item as % of total assets)

	Spain	France	Germany	Italy
ASSETS				
Current assets	47.5	51.6	55.0	62.9
Cash and current investments	5.2	8.8	7.9	6.0
Accounts receivable/other debtors	30.9	31.5	31.7	41.2
Inventories	11.4	11.3	15.5	15.7
Fixed assets	52.3	47.5	44.5	36.3
Intangible fixed assets	3.2	5.0	1.7	6.1
Tangible fixed assets	21.0	17.7	22.0	20.2
Financial fixed assets	28.1	24.9	20.7	10.0
Assets-other	0.2	0.9	0.5	0.8
Total assets	100	100	100	100
LIABILITIES				
Current liabilities	41.1	35.9	39.2	51.0
Amounts owed to credit institutions	5.0	2.2	4.4	11.1
Accounts payable/other creditors	33.4	31.0	31.0	38.5
Payments received on accounts of orders	2.7	2.7	3.8	1.4
Long-term liabilities	21.5	22.9	11.0	12.8
Amounts owed to credit institutions	10.7	7.5	6.3	6.5
Accounts payable/other creditors	10.5	11.5	4.0	5.3
Debenture loans	0.3	3.9	0.7	1.0
Liabilities-other	2.9	6.0	20.6	7.7
Capital and reserves	34.5	35.2	29.2	28.4
Total liabilities, capital and reserves	100	100	100	100

Source: Authors' calculations on BACH data.

Table 2: Non-equity liabilities to total assets (%), 2006

SMALL FIRMS	Spain	France	Germany	Italy	AVERAGE
D-Manufacturing	62	59	72	74	68
E-Electricity, gas and water supply	55	71	65	52	62
F-Construction	72	70	81	80	77
G-Wholesale and retail trade	68	67	75	66	69
H-Hotels and restaurants	62	72	81	71	75
I-Transport, storage and communication	67	67	76	75	73
K-Real estate, renting and business activities	49	48	71	71	64
AVERAGE	62	65	74	70	70
MEDIUM FIRMS	Spain	France	Germany	Italy	AVERAGE
D-Manufacturing	54	62	65	71	66
E-Electricity, gas and water supply	48	77	59	58	65
F-Construction	67	80	82	80	81
G-Wholesale and retail trade	63	69	71	79	73
H-Hotels and restaurants	67	54	74	73	67
I-Transport, storage and communication	37	65	68	73	68
K-Real estate, renting and business activities	53	58	70	75	67
AVERAGE	56	66	70	73	70
LARGE FIRMS	Spain	France	Germany	Italy	AVERAGE
D-Manufacturing	63	63	70	67	66
E-Electricity, gas and water supply	60	76	70	60	69
F-Construction	78	85	84	76	81
G-Wholesale and retail trade	63	70	73	78	74
H-Hotels and restaurants	60	67	69	74	70
I-Transport, storage and communication	55	79	58	71	69
K-Real estate, renting and business activities	67	52	79	75	69
AVERAGE	64	70	72	71	71

Source: Authors' calculations on BACH data. Non-equity liabilities are both short-term and long-term financial debt, accounts payable, provisions, accruals and deferred income. Last column, arithmetic mean of France, Germany and Italy. When the Spanish figure is lower than the arithmetic mean of the last column, it is reported in red. Last row for each firm size, arithmetic mean of the sectors.

Table 3: Debt to Capital (%), 2006

SMALL FIRMS	Spain	France	Germany	Italy	AVERAGE
D-Manufacturing	44	31	59	55	48
E-Electricity, gas and water supply	27	52	57	34	48
F-Construction	53	31	62	65	53
G-Wholesale and retail trade	49	41	63	37	47
H-Hotels and restaurants	48	63	74	62	66
I-Transport, storage and communication	48	46	67	55	56
K-Real estate, renting and business activities	39	43	66	57	55
AVERAGE	44	44	64	52	53
MEDIUM FIRMS	Spain	France	Germany	Italy	AVERAGE
D-Manufacturing	37	35	50	52	45
E-Electricity, gas and water supply	33	63	48	37	49
F-Construction	48	40	55	63	53
G-Wholesale and retail trade	42	40	59	60	53
H-Hotels and restaurants	59	46	58	63	56
I-Transport, storage and communication	26	39	53	51	47
K-Real estate, renting and business activities	43	51	65	50	55
AVERAGE	41	45	55	54	51
LARGE FIRMS	Spain	France	Germany	Italy	AVERAGE
D-Manufacturing	45	34	52	45	44
E-Electricity, gas and water supply	49	59	47	39	48
F-Construction	50	55	53	54	54
G-Wholesale and retail trade	37	38	61	58	53
H-Hotels and restaurants	51	45	51	54	50
I-Transport, storage and communication	40	68	46	60	58
K-Real estate, renting and business activities	62	44	71	47	54
AVERAGE	48	49	55	51	51

Source: Authors' calculations on BACH data. Financial debt is both short-term and long-term financial debt, i.e. non-financial liabilities such as accounts payable are excluded. Capital is debt, equity and reserves. Last column, arithmetic mean of France, Germany and Italy. When the Spanish figure is lower than the arithmetic mean of the last column, it is reported in red. Last row for each firm size, arithmetic mean of the sectors.

Table 4: Tangible fixed assets to total assets (%), 2006

SMALL FIRMS	Spain	France	Germany	Italy	AVERAGE
D-Manufacturing	32	15	26	23	21
E-Electricity, gas and water supply	48	35	67	59	54
F-Construction	22	9	16	16	13
G-Wholesale and retail trade	26	10	15	9	11
H-Hotels and restaurants	59	39	42	58	47
I-Transport, storage and communication	39	19	46	35	33
K-Real estate, renting and business activities	40	4	59	18	27
AVERAGE	38	19	39	31	30
MEDIUM FIRMS	Spain	France	Germany	Italy	AVERAGE
D-Manufacturing	27	17	25	20	21
E-Electricity, gas and water supply	43	52	67	50	56
F-Construction	17	6	12	12	10
G-Wholesale and retail trade	18	10	14	12	12
H-Hotels and restaurants	53	17	48	49	38
I-Transport, storage and communication	59	30	42	38	37
K-Real estate, renting and business activities	16	17	72	15	35
AVERAGE	33	21	40	28	30
LARGE FIRMS	Spain	France	Germany	Italy	AVERAGE
D-Manufacturing	20	15	13	18	15
E-Electricity, gas and water supply	48	45	33	50	43
F-Construction	4	6	8	6	6
G-Wholesale and retail trade	29	9	12	13	11
H-Hotels and restaurants	35	23	33	20	26
I-Transport, storage and communication	54	59	30	41	43
K-Real estate, renting and business activities	4	13	63	19	32
AVERAGE	28	24	27	24	25

Tangible fixed assets are land and buildings, plant and machinery, payments on account and assets in construction and other fixtures. They are reported at their net values, i.e., net of accumulated depreciation. Last column, arithmetic mean of France, Germany and Italy. When the Spanish figure is higher than the arithmetic mean of the last column, it is reported in red. Last row for each firm size, arithmetic mean of the sectors. Source: authors' calculations on BACH data.

Table 5: Tangible Fixed Asset Turnover, 2006

SMALL FIRMS	Spain	France	Germany	Italy	AVERAGE
D-Manufacturing	3.5	9.1	6.8	4.3	6.8
E-Electricity, gas and water supply	0.8	1.7	0.7	0.4	0.9
F-Construction	5.3	19.0	12.6	4.5	12.0
G-Wholesale and retail trade	5.9	19.7	17.4	9.6	15.5
H-Hotels and restaurants	1.5	2.9	5.7	0.8	3.1
I-Transport, storage and communication	3.1	6.8	4.2	2.5	4.5
K-Real estate, renting and business activities	0.8	3.5	1.0	3.4	2.6
AVERAGE	3.0	8.9	6.9	3.6	6.5
MEDIUM FIRMS	Spain	France	Germany	Italy	AVERAGE
D-Manufacturing	3.5	8.0	6.8	5.2	6.7
E-Electricity, gas and water supply	0.7	1.1	1.0	0.9	1.0
F-Construction	4.2	21.6	15.2	6.8	14.5
G-Wholesale and retail trade	10.6	22.2	21.0	13.6	18.9
H-Hotels and restaurants	0.7	2.7	5.0	1.2	3.0
I-Transport, storage and communication	0.6	4.7	4.4	2.5	3.9
K-Real estate, renting and business activities	1.2	1.4	0.5	6.4	2.8
AVERAGE	3.1	8.8	7.7	5.2	7.2
LARGE FIRMS	Spain	France	Germany	Italy	AVERAGE
D-Manufacturing	5.7	8.6	9.2	5.9	7.9
E-Electricity, gas and water supply	1.1	0.7	3.4	1.7	1.9
F-Construction	18.8	17.8	16.5	12.9	15.7
G-Wholesale and retail trade	7.0	24.6	31.9	14.6	23.7
H-Hotels and restaurants	1.7	6.2	6.7	4.9	5.9
I-Transport, storage and communication	0.8	1.1	2.0	0.7	1.3
K-Real estate, renting and business activities	2.1	1.9	1.0	5.9	2.9
AVERAGE	5.3	8.7	10.1	6.6	8.5

Tangible Fixed Asset Turnover is the ratio between turnover and tangible fixed assets. Tangible fixed assets are reported at their net values, i.e., net of accumulated depreciation.

Table 6: Return on assets, ROA (%), 2006

SMALL FIRMS	Spain	France	Germany	Italy	AVERAGE
D-Manufacturing	9.5	11.7	15.0	7.9	11.5
E-Electricity, gas and water supply	9.2	9.7	9.7	6.3	8.6
F-Construction	9.0	12.3	11.5	5.9	9.9
G-Wholesale and retail trade	7.8	10.2	12.8	4.2	9.1
H-Hotels and restaurants	9.1	14.4	17.5	8.5	13.4
I-Transport, storage and communication	12.3	9.4	16.8	7.2	11.1
K-Real estate, renting and business activities	6.3	3.3	8.9	9.4	7.2
AVERAGE	9.0	10.1	13.2	7.1	10.1
MEDIUM FIRMS	Spain	France	Germany	Italy	AVERAGE
D-Manufacturing	10.2	10.5	14.1	9.1	11.2
E-Electricity, gas and water supply	9.0	8.7	12.3	7.9	9.6
F-Construction	6.9	9.6	9.2	6.3	8.3
G-Wholesale and retail trade	9.6	9.9	12.6	7.5	10.0
H-Hotels and restaurants	6.5	3.7	11.0	9.1	8.0
I-Transport, storage and communication	6.1	9.5	12.8	9.4	10.6
K-Real estate, renting and business activities	4.8	3.9	7.3	10.2	7.1
AVERAGE	7.6	8.0	11.3	8.5	9.3
LARGE FIRMS	Spain	France	Germany	Italy	AVERAGE
D-Manufacturing	10.8	9.4	7.7	9.7	8.9
E-Electricity, gas and water supply	10.9	8.7	9.0	11.6	9.8
F-Construction	5.6	7.5	2.7	9.8	6.7
G-Wholesale and retail trade	10.4	9.4	10.1	7.9	9.1
H-Hotels and restaurants	8.4	12.7	7.0	9.0	9.6
I-Transport, storage and communication	12.5	11.8	8.8	7.2	9.2
K-Real estate, renting and business activities	2.6	4.6	13.2	11.5	9.8
AVERAGE	8.7	9.2	8.4	9.5	9.0

ROA is the EBITDA (earnings before interests, taxes, depreciation and amortization) over total assets, in %. Last column, arithmetic mean of France, Germany and Italy. When the Spanish figure is lower than the arithmetic mean of the last column, it is reported in red. Last row for each firm size, arithmetic mean of the sectors. Source: authors' calculations on BACH data.

Table 7: Profit Margin (%), 2006

SMALL FIRMS	Spain	France	Germany	Italy	AVERAGE
D-Manufacturing	8.5	8.5	8.4	8.0	8.3
E-Electricity, gas and water supply	22.5	16.2	21.2	24.5	20.6
F-Construction	7.7	7.6	5.8	8.1	7.2
G-Wholesale and retail trade	5.1	5.2	4.8	4.8	4.9
H-Hotels and restaurants	10.6	12.9	7.3	18.6	12.9
I-Transport, storage and communication	10.0	7.1	8.7	8.1	8.0
K-Real estate, renting and business activities	20.5	21.5	15.9	15.1	17.5
AVERAGE	12.1	11.3	10.3	12.4	11.3
MEDIUM FIRMS	Spain	France	Germany	Italy	AVERAGE
D-Manufacturing	10.8	7.7	8.4	8.7	8.3
E-Electricity, gas and water supply	29.1	15.6	17.7	18.5	17.2
F-Construction	9.6	7.0	5.1	7.6	6.6
G-Wholesale and retail trade	4.9	4.3	4.2	4.5	4.3
H-Hotels and restaurants	16.5	8.1	4.6	15.2	9.3
I-Transport, storage and communication	16.4	6.7	6.9	10.0	7.9
K-Real estate, renting and business activities	24.5	16.5	20.5	10.4	15.8
AVERAGE	16.0	9.4	9.6	10.7	9.9
LARGE FIRMS	Spain	France	Germany	Italy	AVERAGE
D-Manufacturing	9.4	7.4	6.4	9.1	7.6
E-Electricity, gas and water supply	20.8	27.0	8.0	13.9	16.3
F-Construction	8.5	7.2	2.2	12.8	7.4
G-Wholesale and retail trade	5.1	4.1	2.7	4.2	3.6
H-Hotels and restaurants	14.0	8.8	3.2	9.0	7.0
I-Transport, storage and communication	27.9	19.1	14.3	23.9	19.1
K-Real estate, renting and business activities	27.5	18.5	21.6	10.5	16.9
AVERAGE	16.2	13.1	8.3	11.9	11.1

Profit Margin is the EBITDA (earnings before interests, taxes, depreciation and amortization) over total turnover, in %. Last column, arithmetic mean of France, Germany and Italy. When the Spanish figure is lower than the arithmetic mean of the last column, it is reported in red. Last row for each firm size, arithmetic mean of the sectors. Source: authors' calculations on BACH data.

Table 8: Asset Turnover, 2006

SMALL FIRMS	Spain	France	Germany	Italy	AVERAGE
D-Manufacturing	1.1	1.4	1.8	1.0	1.4
E-Electricity, gas and water supply	0.4	0.6	0.5	0.3	0.4
F-Construction	1.2	1.6	2.0	0.7	1.4
G-Wholesale and retail trade	1.5	1.9	2.6	0.9	1.8
H-Hotels and restaurants	0.9	1.1	2.4	0.5	1.3
I-Transport, storage and communication	1.2	1.3	1.9	0.9	1.4
K-Real estate, renting and business activities	0.3	0.2	0.6	0.6	0.4
AVERAGE	0.9	1.2	1.7	0.7	1.2
MEDIUM FIRMS	Spain	France	Germany	Italy	AVERAGE
D-Manufacturing	0.9	1.4	1.7	1.0	1.4
E-Electricity, gas and water supply	0.3	0.6	0.7	0.4	0.6
F-Construction	0.7	1.4	1.8	0.8	1.3
G-Wholesale and retail trade	2.0	2.3	3.0	1.7	2.3
H-Hotels and restaurants	0.4	0.5	2.4	0.6	1.2
I-Transport, storage and communication	0.4	1.4	1.9	0.9	1.4
K-Real estate, renting and business activities	0.2	0.2	0.4	1.0	0.5
AVERAGE	0.7	1.1	1.7	0.9	1.2
LARGE FIRMS	Spain	France	Germany	Italy	AVERAGE
D-Manufacturing	1.1	1.3	1.2	1.1	1.2
E-Electricity, gas and water supply	0.5	0.3	1.1	0.8	0.8
F-Construction	0.7	1.0	1.3	0.8	1.0
G-Wholesale and retail trade	2.0	2.3	3.8	1.9	2.7
H-Hotels and restaurants	0.6	1.5	2.2	1.0	1.6
I-Transport, storage and communication	0.5	0.6	0.6	0.3	0.5
K-Real estate, renting and business activities	0.1	0.2	0.6	1.1	0.7
AVERAGE	0.8	1.0	1.6	1.0	1.2

Asset turnover is the ratio between turnover and total assets.

Table 9: Specific assets over total assets (%), 2006

SMALL FIRMS	Spain	France	Germany	Italy	AVERAGE
D-Manufacturing	12.9	6.5	9.5	7.2	7.7
E-Electricity, gas and water supply	40.4	16.7	48.9	41.2	35.6
F-Construction	6.3	2.9	3.0	1.8	2.6
G-Wholesale and retail trade	5.0	1.5	1.9	1.3	1.6
H-Hotels and restaurants	9.7	4.1	1.4	3.9	3.1
I-Transport, storage and communication	8.0	3.7	6.3	9.1	6.4
K-Real estate, renting and business activities	0.9	0.2	1.5	2.8	1.5
AVERAGE	11.9	5.1	10.4	9.6	8.4
MEDIUM FIRMS	Spain	France	Germany	Italy	AVERAGE
D-Manufacturing	11.4	8.2	9.7	7.8	8.5
E-Electricity, gas and water supply	32.3	32.7	51.2	37.5	40.5
F-Construction	5.3	2.9	3.5	2.6	3.0
G-Wholesale and retail trade	3.8	1.9	1.7	2.0	1.8
H-Hotels and restaurants	5.4	2.5	1.3	5.3	3.0
I-Transport, storage and communication	2.2	6.3	12.3	13.3	10.6
K-Real estate, renting and business activities	0.9	0.9	1.3	2.6	1.6
AVERAGE	8.7	7.9	11.5	10.1	9.9
LARGE FIRMS	Spain	France	Germany	Italy	AVERAGE
D-Manufacturing	9.0	8.4	4.9	8.5	7.3
E-Electricity, gas and water supply	40.5	35.5	24.7	39.8	33.3
F-Construction	1.3	3.3	2.4	2.6	2.8
G-Wholesale and retail trade	6.0	1.5	1.4	2.4	1.7
H-Hotels and restaurants	7.9	4.5	2.4	2.0	3.0
I-Transport, storage and communication	15.6	11.5	17.8	15.0	14.8
K-Real estate, renting and business activities	0.0	0.7	3.6	3.0	2.4
AVERAGE	11.5	9.3	8.2	10.5	9.3

Specific assets are plant & machinery. They are reported at their net values, i.e., net of accumulated depreciation. Last column, arithmetic mean of France, Germany and Italy. When the Spanish figure is lower than the arithmetic mean of the last column, it is reported in red. Last row for each firm size, arithmetic mean of the sectors. Source: authors' calculations on BACH data.

Table 10: Specific-asset turnover (%), 2006

SMALL FIRMS	Spain	France	Germany	Italy	AVERAGE
D-Manufacturing	8.6	21.4	18.8	13.9	18.0
E-Electricity, gas and water supply	1.0	3.6	0.9	0.6	1.7
F-Construction	18.5	55.0	65.4	41.2	53.9
G-Wholesale and retail trade	30.5	129.0	137.8	70.6	112.4
H-Hotels and restaurants	8.9	27.1	166.8	11.8	68.6
I-Transport, storage and communication	15.5	35.6	30.6	9.8	25.3
K-Real estate, renting and business activities	34.4	64.2	38.1	22.1	41.5
AVERAGE	16.8	48.0	65.5	24.3	45.9
MEDIUM FIRMS	Spain	France	Germany	Italy	AVERAGE
D-Manufacturing	8.2	16.8	17.3	13.5	15.9
E-Electricity, gas and water supply	1.0	1.7	1.4	1.1	1.4
F-Construction	13.6	47.6	51.7	31.6	43.7
G-Wholesale and retail trade	51.4	122.6	179.4	85.9	129.3
H-Hotels and restaurants	7.3	18.5	190.0	11.3	73.3
I-Transport, storage and communication	17.3	22.4	15.1	7.1	14.9
K-Real estate, renting and business activities	20.9	26.2	28.3	37.6	30.7
AVERAGE	17.1	36.5	69.0	26.9	44.2
LARGE FIRMS	Spain	France	Germany	Italy	AVERAGE
D-Manufacturing	12.7	15.2	24.5	12.5	17.4
E-Electricity, gas and water supply	1.3	0.9	4.6	2.1	2.5
F-Construction	50.2	32.0	52.6	28.9	37.8
G-Wholesale and retail trade	33.5	154.3	283.5	79.1	172.3
H-Hotels and restaurants	7.6	32.6	93.9	49.3	58.6
I-Transport, storage and communication	2.9	5.4	3.4	2.0	3.6
K-Real estate, renting and business activities	309.1	36.1	16.8	37.1	30.0
AVERAGE	59.6	39.5	68.5	30.2	46.0

Specific assets are plant & machinery. They are reported at their net values, i.e., net of accumulated depreciation. Last column, arithmetic mean of France, Germany and Italy. When the Spanish figure is higher than the arithmetic mean of the last column, it is reported in red. Last row for each firm size, arithmetic mean of the sectors. Source: authors' calculations on BACH data

Table 11: Bank credit to total credit (%), 2006

SMALL FIRMS	Spain	France	Germany	Italy	AVERAGE
D-Manufacturing	40	18	36	40	31
E-Electricity, gas and water supply	21	14	61	36	37
F-Construction	39	10	21	40	24
G-Wholesale and retail trade	39	19	32	24	25
H-Hotels and restaurants	49	37	41	55	44
I-Transport, storage and communication	41	16	45	37	33
K-Real estate, renting and business activities	54	24	63	27	38
AVERAGE	40	20	43	37	33
MEDIUM FIRMS	Spain	France	Germany	Italy	AVERAGE
D-Manufacturing	35	16	29	38	28
E-Electricity, gas and water supply	27	10	55	36	34
F-Construction	40	5	13	38	19
G-Wholesale and retail trade	35	17	31	34	27
H-Hotels and restaurants	52	15	20	53	29
I-Transport, storage and communication	47	17	33	33	27
K-Real estate, renting and business activities	53	34	73	23	43
AVERAGE	41	16	36	36	30
LARGE FIRMS	Spain	France	Germany	Italy	AVERAGE
D-Manufacturing	16	10	8	26	15
E-Electricity, gas and water supply	18	2	20	24	15
F-Construction	19	9	5	32	15
G-Wholesale and retail trade	17	10	19	22	17
H-Hotels and restaurants	48	11	22	39	24
I-Transport, storage and communication	34	27	10	17	18
K-Real estate, renting and business activities	40	21	47	12	26
AVERAGE	27	13	18	24	19

Source: authors' calculations on BACH data. Bank credit comprises both short-term and long-term liabilities owed to credit institutions. Total credit comprises bank credit, short-term and long-term other financial debt, accounts payable, etc. Last column, arithmetic mean of France, Germany and Italy. When the Spanish figure is higher than the arithmetic mean of the last column, it is reported in red. Last row for each firm size, arithmetic mean of the sector

ÚLTIMOS DOCUMENTOS DE TRABAJO

- 2010-11: “The Spanish Business Bankruptcy Puzzle and the Crisis”, **Marco Celentani, Miguel García-Posada y Fernando Gómez.**
- 2010-10: “Promoting Employment of Disabled Women in Spain; Evaluating a Policy”, **Judit Vall Castello.**
- 2010-09: “The Role of Construction in the Housing Boom and Bust in Spain”, **Carlos Garriga.**
- 2010-08: “Did Good Cajas Extend Bad Loans? Governance, Human Capital and Loan Portfolios”, **Vicente Cuñat y Luis Garicano.**
- 2010-07: “Unemployment and Temporary Jobs in the Crisis: Comparing France and Spain”, **Samuel Bentolila, Pierre Cahuc, Juan J. Dolado y Thomas Le Barbanchon.**
- 2010-06: “La Subida del Impuesto Sobre el Valor Añadido en España: Demasiado Cara y Demasiado Pronto”, **Juan Carlos Conesa , Javier Díaz-Giménez, Julián Díaz-Saavedra y Josep Pijoan-Mas.**
- 2010-05: “Off-the-peak preferences over government size”, **Francisco Martínez-Mora y M. Socorro Puy.**
- 2010-04: “Green Shoots? Where, when and how?”, **Maximo Camacho, Gabriel Perez-Quiros y Pilar Poncela.**
- 2010-03: “The Spanish Crisis from a Global Perspective”, **Jesús Fernández-Villaverde y Lee Ohanian.**
- 2010-02: “Fiscal Centralization and the Political Process”, **Facundo Albornoz y Antonio Cabrales.**
- 2010-01: “The Evolution of Adult Height Across Spanish Regions 1950-1980: A New Source of Data”, **Mariano Bosch, Carlos Bozzoli y Climent Quintana-Domeque.**
- 2009-40: “Demographic Change and Pension Reform in Spain: An Assessment in a Two-Earner, OLG Model”, **Alfonso R. Sánchez Martín y Virginia Sánchez Marcos.**
- 2009-39: “The new growth model: How and with Whom?”, **Florentino Felgueroso y Sergi Jiménez-Martín.**
- 2009-38: “Rain and the Democratic Window of Opportunity”, **Markus Brückner and Antonio Ciccone.**
- 2009-37: “International Commodity Prices, Growth, and the Outbreak of Civil War in Sub-Saharan Africa”, **Markus Brückner and Antonio Ciccone.**
- 2009-36: “Determinants of Economic Growth: Will Data Tell?”, **Antonio Ciccone y Marek Jarocinski.**
- 2009-35: “The Timing of Work and Work-Family Conflicts in Spain: Who Has a Split Work Schedule and Why?”, **Catalina Amuedo-Dorantes y Sara de la Rica.**
- 2009-34: “Fatter Attraction: Anthropometric and Socioeconomic Characteristics in the Marriage Market”, **Pierre-André Chiappori, Sonia Oreffice y Climent Quintana-Domeque.**
- 2009-33: “Infant disease, economic conditions at birth and adult stature in Brazil”, **Víctor Hugo de Oliveira Silva y Climent Quintana-Domeque.**
- 2009-32: “Are Drinkers Prone to Engage in Risky Sexual Behaviors?”, **Ana I. Gil Lacruz, Marta Gil Lacruz y Juan Oliva Moreno.**
- 2009-31: “Factors Explaining Charges in European Airports: Competition, Market Size, Private Ownership and Regulation”, **Germà Bel y Xavier Fageda.**
- 2009-30: “Are Women Pawns in the Political Game? Evidence from Elections to the Spanish Senate”, **Berta Esteve-Volart y Manuel Bagues.**
- 2009-29: “An Integrated Approach to Simulate the Impacts of Carbon Emissions Trading Schemes”, **Xavier Labandeira, Pedro Linares y Miguel Rodríguez.**
- 2009-28: “Disability, Capacity for Work and the Business Cycle: An International Perspective”, **Hugo-Benítez-Silva, Richard Disney y Sergi Jiménez-Martín.**
- 2009-27: “Infant mortality, income and adult stature in Spain”, **Mariano Bosch, Carlos Bozzoli y Climent Quintana-Domeque.**
- 2009-26: “Immigration and Social Security in Spain”, **Clara I. Gonzalez, J. Ignacio Conde-Ruiz y Michele Boldrin.**
- 2009-25: “Business Cycle Effects on Labour Force Transitions for Older People in Spain”, **Sergi Jiménez-Martín y Judit Vall Castello.**
- 2009-24: “Inequality of Opportunity and Growth”, **Gustavo A. Marrero y Juan G. Rodríguez.**
- 2009-23: “A Characterization Of The Judicial System In Spain: Analysis With Formalism Indices”, **Juan S. Mora.**
- 2009-22: “Anthropometry and Socioeconomics in the Couple: Evidence from the PSID”, **Sonia Oreffice y Climent Quintana-Domeque.**
- 2009-21: “Stimulating Graduates' Research-Oriented Careers: Does Academic Research Matter?”, **Mauro Sylos Labini y Natalia Zinovyeva.**
- 2009-20: “Papers or Patents: Channels of University Effect on Regional Innovation”, **Robin Cowan y Natalia Zinovyeva.**
- 2009-19: “Innovation, Tangible and Intangible Investments and the Value of Spanish Firms”, **Aitor Lacuesta, Omar Licandro, Teresa Molina y Luis A. Puch.**