JUDICIAL EFFICIENCY AND BANKRUPTCY RESOLUTION IN SPAIN[1]

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Abstract

The principal aim of this study is to analyze the effect of judicial efficiency in bankruptcy resolution. As far as we know, this is the first work in this line due to its theoretical arguments, and it follows the literature about the relationship between judicial efficiency and the credit market. This study uses a sample of 575 Spanish firms that filed for bankruptcy between 2004 and 2009 and obtained a resolution by the end of 2012. The results reveal that greater judicial efficiency favors the reorganization of bankrupt firms, especially in those firms in which bank entities have a predominant position.

KEYWORDS: Judicial efficiency, bankruptcy resolution, banks.

JEL classification: K22, G21

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1. INTRODUCTION

Bankruptcy legislation should provide a framework that allows economically viable firms to reorganize and continue their business activities and simultaneously forces inefficient firms to be liquidated. In this sense, the literature on bankruptcy resolution identifies two opposing types of systems that act as a function of the legislation—debtor-friendly systems (e.g., US Chapter 11) and creditor-oriented systems (e.g., UK legislation)—and a wide debate exists about the efficiency of each one. Thus, in debtor-friendly systems, it is unlikely that viable firms will be liquidated, but inefficiency rises in the continued existence of unprofitable firms. In Spanish legislation, the 2003 Bankruptcy Law gives less protection to debtors than in the previous law, which raises some doubts about its efficiency (Fernández, 2004).

Judicial efficiency is determined by the way the legal rules are actually applied. For this reason, although bankruptcy legislation is national, its application can be different in each judicial district. Therefore, this fact allows us to analyze whether the differences in the judicial efficiency have an impact on bankruptcy resolution. In this sense, judicial efficiency can affect creditors' attitudes in general, especially the banks (Jappelli et al., 2005; Rosales, 2006). Thus, greater judicial efficiency offers more recovery guarantees to the creditors, which can favor the reorganization of bankrupt firms. However, less efficiency can cause a preference for liquidation because the creditors are afraid of the loss of asset value. To demonstrate that hypothesis, the present study wants to analyze this relationship in Spanish autonomous communities, using a sample of firms that filed for bankruptcy between 2004 and 2009 and obtained a resolution by the end of 2012. In accordance with the predictions, the results reveal that, *ceteris paribus*, greater judicial efficiency increases the likelihood of reorganization, particularly for the firms in which bank creditors have a principal role.

The study is structured as follows. Section two summarizes the bankruptcy legislation on resolution proceedings under the framework of Spanish bankruptcy legislation, and the judicial efficiency problem is presented. Theoretical arguments are then described, and the hypotheses are presented in section three. The sections four and five describe the empirical study. Finally, the sixth and final section is dedicated to concluding remarks.

2. THE BANKRUPTCY RESOLUTION LEGISLATION AND JUDICIAL EFFICIENCY IN SPAIN

Bankruptcy resolution is the stage of the proceeding in which it is decided whether the firm continues its activity with the approval of an agreement or is liquidated. Concretely, in Spanish Law, this moment is the end of the common phase and the beginning of the successive phase.

According to the preamble of the Spanish bankruptcy proceeding Law, reorganization is the normal solution from the proceedings, causing the Law to promote a series of measures whose purpose is to reach a satisfactory agreement with the creditors. The arrangement needs judicial approval. However, the approval of this agreement does not suppose the end of the bankruptcy, which is only obtained with its compliance. In fact, liquidation can be produced by breach of the arrangement.

Another possibility of the bankruptcy proceeding resolution is liquidation. Liquidation can occur at the request of the debtor at the moment the bankruptcy proceeding is filed or during the reorganization process if it is impossible to meet the promised payments (art. 142). Likewise, the creditors can request liquidation. It is noteworthy that firm management and possession of patrimony are suspended during the liquidation process. Moreover, the court resolution that initiates the liquidation process entails the dissolution of the firm and the substitution of managers by bankruptcy administrators (art. 145).

The objective of the liquidation procedure is to collect the assets of the firm, determine the outstanding debt and pay off the debt in the way and order stated in the Law. The liquidation process can lead to a piecemeal or complete liquidation in which case the creditors can retain the synergies generated by the firm.

A remarkable aspect in the different legislation about bankruptcy proceedings, including the Spanish legislation, is the degree of protection provided to debtors and creditors. In this sense, different legislation in the international context is not at the extremes, either pro-debtor or pro-creditor, and it is possible to find several degrees of protection.

One of the most-used indicators in the international context to measure the degree of protection is the index created by La Porta et al. (1998) and updated by Djankov et al. (2007), which gives Spain a score of two out of four on the creditor rights protection index, while France has 0, the USA, 1 and the UK, 4[2]. This fact places the Spanish bankruptcy legislation in an intermediate position between the extremes of the USA and France. In sum, the

[2] The minimum score indicates pro-debtor legislation, while the maximum score indicates pro-creditor legislation.

protection degree will depend on the type of legislation and whether it is oriented to benefit the debtor or the creditor. These differences in the protection of the rights of creditors and debtors can explain the differences in reorganization percentages depending on the legal system (Brouwer, 2006).

Nevertheless, the efficiency of the legislation depends not only on its orientation (pro-creditor or pro-debtor) but also on the quality of its application. In this sense, although the bankruptcy legislation is national, the actual application occurs in each court and therefore is conditioned by the available resources, the amount of work and the discretion of the judge in the interpretation of the legal rules. Hence, several studies (Pinheiro and Cabral, 1999; Fabbri and Padula, 2002; Jappelli, et al., 2005; Bae and Goyal, 2009; Fabbri, 2010) have tried to analyze the effect of differences in judicial efficiency in the development of the financial markets, and especially in the attitude of bank entities based on that efficiency.

To do this, the studies analyzing the same country use the judicial district. In the case of Spain, the presentation of the bankruptcy must be made in the Mercantile Court corresponding to the place where the firm has its principal office. In this sense, it is necessary to note that the judicial statistics about the mercantile judges in Spain[3] are by province, but the statistics about bankruptcy resolution are made using only autonomous communities. For this reason, in this study, it is considered more suitable to use the information related to autonomous communities.

3. JUDICIAL EFFICIENCY AND BANKRUPTCY RESOLUTION: HYPOTHESIS

The judicial systems carry out a central role in economic development because they have influence in the process of defining and strengthening of property rights, as well as in the grading of contract execution (Iglesias and Arias, 2007). The main function of the judicial system is to guarantee the execution of the legal rules. In this sense, although the legal context is the same in a country, the legal rules are applied by the courts of each state or province. Therefore, inside a country, there are differences as regards the quality and efficiency in the implementation of the law (Rosales, 2006).

Particularly, among the problems derived from the functioning of judicial authorities, it is possible to find the number of pending cases and the delay in their resolution. Time passing supposes a greater opportunity cost because the parties, due to the uncertainty about the resolution date, could delay their economic decisions (Iglesias and Arias, 2007). In this line,

[3] The statistics are elaborated by *El Consejo Superior del Poder Judicial (CGPJ).*

judicial inefficiency contributes to opportunistic behavior in debtors and creditors because the former will be tempted to cheat and will be unable to pay their debt, and consequently, the latter can answer with a reduction in credit availability and an increase in interest rates (Jappelli et al., 2005). Thus, inefficient functioning in the courts can produce credit rationing in firms and households due to the lack of confidence from financial institutions in the compliance with their rights (Rosales, 2006). In addition, there would be other aspects that have an impact on judicial efficiency. First, a great number of cases suppose that the courts have to face more cases in need of resolution. The increase in the workload could generate greater congestion in the judicial system, and consequently, the resolution dates would be prolonged. Second, the economic situation affects the litigation rates. During an economic crisis, it is more difficult for economic agents to perform their contracts, and firms have a greater likelihood of undergoing financial problems. The OECD estimations show that, specifically, the cases increased during the last recession in all of the analyzed countries (Mora-Sanguinetti, 2013).

The performance of the judicial system broadcasts information to the market about the expected earnings and losses of the economic agents, and that fact modifies their incentives (Rosales, 2006). Some studies have demonstrated that judicial inefficiency, measured by the delay in the resolution and the excessive formality, has a negative relationship with the development of financial markets and especially credit availability (World Bank, 2005). The reduced judicial ability and the reduced recovery rates of loans cause banks to not want to provide long-term resources in order to finance productive projects because of the likelihood of bankruptcy costs increases (Aysun and Khaddaria, 2012).

In this way, regarding the empirical evidence, several studies have tried to analyze the relationship between judicial efficiency and the credit market. Thus, Pinheiro and Cabral (1999) find that judicial efficiency has an important negative influence in the credit granted by financial institutions in the different states of Brazil. Fabbri and Padula (2002) find that homebuyers situated in less efficient Italian judicial districts receive less credit, after controlling for personal characteristics. The results of Jappelli et al. (2005) demonstrate that the more efficient judicial districts in Italy have more financial activity and less credit rationing. Bae and Goyal (2009) analyze whether the differences in legal protection affect the size, maturity and interest rates of loans in 48 countries. Their results show that banks' answer to inefficiency is a reduction in the loan amount, a reduction in maturity and an increase in the interest rates. In the Spanish case, Fabbri (2010) finds that in the districts where the processes

are longer, the bank loans are more costly. In general, the empirical evidence shows that judicial efficiency affects the amount of credit granted by a province, region or state (in the case of Brazil). Additionally, the impact of judicial inefficiency at the firm level has been evaluated, analyzing the relationship between the application degree of the Law from the judicial system and the external financing availability for the firms (Rosales, 2006).

In sum, the studies show that judicial efficiency affects the banks' attitude regarding the finance of firms and households. Those arguments are also applicable to the creditors' attitude, particularly banks, in bankruptcy resolution because the future of bankrupt firms depends greatly on the banks' support. In this sense, according to Dewaelheyns and Van Hulle (2009), in a bank-oriented financial system like the Spanish one, it is almost impossible to reorganize a firm without bank support because firms have stable long-term relationships with banks and they are their main financing resource (Ongena and Smith, 2000; Degryse and van Cayseele, 2000). On the other hand, banks present a comparative advantage because they are considered well-informed creditors thanks to their continuous relationships with the firms (Fama, 1985), just like the role as delegated monitors (Diamond, 1984). Additionally, Park (2000) asserts that the added value of a bank, like a major lender, is its experience in compiling information about the borrower and in making correct decisions in the bankruptcy resolution. This informative advantage of bank creditors can help them to screen and identify viable firms (Dahiya et al., 2003).

Therefore, taking into account the importance of bank creditors in bankruptcy resolution and the differences in judicial efficiency derived from the application of the rules in different areas and their evolution over time, it is predicted that judicial efficiency affects bankruptcy resolution. Specifically, greater judicial efficiency affects the behavior of bank creditors because these entities will favor renegotiation and reach agreements with better conditions for the debtor in the case of viable firms and liquidation in the case of unviable firms. Therefore, we expect a positive relationship between judicial efficiency and the likelihood of reorganization, particularly in the case of firms in which banks have a predominant role.

4. METHODOLOGICAL ASPECTS

Sample

The initial sample is formed by the firms that went bankrupt between September 1, 2004, and June 30, 2009. The determination of this last date responds to the need for having enough

time to solve the processes, and in the literature, this period is usually around three years. The selection of the sample starts from the published bankruptcies in the *Boletín Oficial del Estado*, obtained from WebConcursal, which contains information on the different stages of the proceedings as well as the legal resolutions of bankruptcy filings by Spanish firms. Financial information from the firms was taken from the SABI[4] database. Henceforth, the need to have available information about the types of debt for the firms makes it necessary to consider only the firms that present their accounts in a normal format. Specifically, financial information came from the prior year if the filing occurred in the second half of the year, while two previous years were considered for filings submitted in the first half of the year[5]. This consideration allows homogenized temporal distance from the bankruptcy date and the accounts date. For the bankrupt firms that accomplish this requirement, an individual monitoring of the bankruptcy process is made to discover the firms that have solved the bankruptcy (liquidation or reorganization) by December 2012. The process status on December 31, 2012, was determined by examining the public registry for each firm at the Ministry of Justice, which provides information on the process history, including the resolution dates[6]. After eliminating the firms that have not solved the process and those that do not have information in SABI, the sample consisted of 599 firms. Finally, firms without bank debt and sporting business corporations were excluded. The final sample consists of 575 firms, of which 358 have been liquidated or are in a liquidation stage, and 217 have negotiated a payment agreement with their creditors.

Dependent Variable

Resolution *(Reorganization versus Liquidation).* The selection criteria used to distinguish among the firms that obtain a bankruptcy process resolution was that the firms had finished

[4] SABI (System Iberian Balance Analysis; Bureau Van Dyck database).

[5] Studies on bankruptcy resolution consider accounts from the prior and the present year if the bankruptcy occurred in the first quarter of the year (Bryan et al. 2010). First- or second-half of the year timing consideration is required when the account presentation is compulsory in the corresponding Mercantile Register, which establishes a time period that ends on June 30 each year. Leyman et al. (2011) also consider a maximum time period of 18 months.

[6] https://www.publicidadconcursal.es/. Following requests from interested firms that had finished the bankruptcy process, data were eliminated from this public registry, which can explain why it is not possible to obtain the information. In this case, we accessed the WebConcursal web page.

the common phase[7], that is, the declaration of liquidation had been produced or the agreement of reorganization had been approved. To that end, a dummy variable was created that is equal to one if the resolution of the bankruptcy is reorganization and equal to zero if the company has begun liquidation (Tucker and Moore 2000; Fisher and Martel, 1995, 2003; Wang, 2012).

Explanatory Variable

Judicial Efficiency *(Efficiency).* As mentioned above, the presentation of bankruptcy must be formalized in the district where the bankrupt firm has its principal office. In the present study, the autonomous community has been used to obtain judicial efficiency rates. To do this, first, data were collected, by community and year, for the rate of bankruptcy resolutions, which is calculated by dividing the number of solved bankruptcies by the number of presented bankruptcies. Second, the efficiency rate in each bankruptcy is the annual average in its community during the period of time from the beginning of the process to the end of common phase[8]. Therefore, that rate is different not only in each geographic area but also by the evolution of efficiency over time. The data have been obtained from the information available in the mercantile courts, elaborated by the CGPJ[9].

Control Variables

Bank Debt Dominant (BankdebtDom). Related to the influence of bank debt in the bankruptcy resolution processes, Fisher and Martel (1995) assert that reorganization is more likely in firms with a greater relative volume of bank debt. Franks and Sussman (2005) find that the assets rights are highly concentrated in the major banks. This fact allows the bank to have a dominant position in the decision about the liquidation or reorganization, and "the banks' typical response to distress is an attempt to rescue the firm (rather than liquidate it automatically)" (p.67) because the concentration of bank debt contributes to solving the coordination problems among the creditors. On the other hand, Ayotte and Morrison (2009) find that secured creditors (banks) exercise a great amount of control through the strict clauses of their contracts. The importance of bank debt has been calculated by a dummy variable (***bankdebdom***), which is equal to 1 if bank debt is greater than 50% of the total debt and 0 otherwise.

[7] This criterion is used by Van Hemmen in the annual statistics on bankruptcy, published in Spain since 2008.

[8] The data of the rate of bankruptcy resolutions was not available for 2010. For this reason, for the bankruptcies whose period from the beginning of the process to the end of common phase includes the year 2010, the average was calculated using the rest of the years.

[9] The year 2004 has not been considered because the Spanish Bankruptcy Law dates from September 2004. Additionally, the data of the year 2010 are not in the information published by the CGPJ webpage.

Economic profitability (PositiveROA). With the aim of isolating economic management and financial aspects, studies usually consider the economic profitability (ROA) (e.g., White, 1984; Bryan et al., 2002, 2010) calculated by the ratio EBITDA/total assets. The firms that go bankrupt with a positive ROA have a greater likelihood of reorganization than firms with a negative ROA. In this sense, the studies about the causes of bankruptcy assert that whether the profitability is negative, the bankruptcy is economic and it is not possible to solve it by negotiation with the creditors. Thus, Naujobs (2012) predicts a negative relationship between economic distress (negative ROA) and the likelihood of reorganization. In the opposite direction, the present work considers a positive ROA variable, and for this reason, we predict a positive relationship with the likelihood of reorganization.

Leverage. This variable (***LEV)*** is measured as the ratio of total debt to total assets (Denis and Rodgers, 2007; Lemmon et al, 2009; Leyman et al., 2011; Fischer and Wahrenburg, 2012). According to Lemmon et al. (2009), once a firm goes bankrupt, all of the debt is payable, and for this reason it is more appropriate to use the total debt instead of the short-term debt. As this variable can be interpreted as a proxy for the complexity of the reorganization problem and as a proxy for the severity of the financial difficulties (Dewaelheyns and Van Hulle 2009), we expect that a greater level of leverage reduces the likelihood of reorganization.

Profitability and Leverage Combination (ROAxLEV). Lemmon et al. (2009) note that the combination of operative profitability and leverage provides a more appropriate distinction between economic and financial distress that individual variables . With the aim of jointly considering those variables, in the present study, it has been calculated as the variable ***ROAxLEV,*** which is the product of ***PositiveROAxLev.*** Thus, a greater level of this variable regarding the firms with negative ROA and leverage being equal, the firms will have a greater likelihood of reorganization. However, the greater the level of leverage, the lower the likelihood of reorganization.

Size. White (1984) argues that firm size increases the survival probability because its assets are more specific, and this situation reduces the number of purchasers that are interested in such firms. In addition, governments generally support the largest firms for strategic reasons. Furthermore, size is considered in the literature as a proxy for asymmetric information. Thus, it is possible that the largest firms, with fewer information asymmetries, have a greater probability of reaching an agreement than the smallest firms. The reason is that creditors will be more willing to trust information regarding the firm's viability, and the creditors' probability of recovering the debt depends on that information. The size is estimated by the

total assets logarithm (e.g., Sundgren 1998; Bryan, et al., 2002; Barniv et al., 2002; Kim et al., 2008; Ayotte and Morrison, 2009; Jacobs et al., 2012).

Sector. Maksimovic and Phillips (1998) find that the incentives for reorganization depend on the characteristics of the economic sector of the firm. This variable attempts to summarize certain aspects that are more related to the sector activity rather than to the firm. Among the studies of bankruptcy resolution that consider sectors are those of Campbell (1996), Sundgren (1998), Ravid and Sundgren (1998), Bryan et al. (2002) and Bergstrom et al. (2002). In this study, eight dummy variables are considered: Agriculture and Fishing, Industry and Energy, Construction, Real Estate, Transport, Hotels, Commerce and Other Services.

5. JUDICIAL EFFICIENCY AND BANKRUPTCY RESOLUTION

5.1. Descriptive Analysis

Table 1 lists the average values of the variables (percentages in the case of dummy variables) for the total sample as well as for the resolution type (reorganization or liquidation). First, one-third (37.74%) of the firms in the sample reached a restructuring agreement with their creditors, while the rest (62.26%) have begun the liquidation phase.

On the other hand, the judicial efficiency rate is greater in reorganized firms than in liquidated firms. In addition, in the group of reorganized firms, there is a larger percentage of firms in which bank debt is dominant as well as a lower level of leverage and a greater size. These preliminary results support the previous theoretical arguments.

Table 1. Average values [a] of variables by type of resolution

	Total Sample	**Reorganization**	**Liquidation**	**T-test**
Judicial Efficiency	31.90	33.19	31.12	-2.01**
Bankbedtdom	47.83	58.06	41.62	-3.38***
PositiveROA	79.65	82.02	78.21	-1.29
Leverage	87.94	82.57	91.18	1.43*
ROAxLEV	66.92	65.44	67.82	-0.40
Size	4.15	4.27	4.07	-5.21***
Observations	**575**	**217** (37.74%)	**358** (62.26%)	

Variables: Bankdebtdom =1 whether Bank debt/Total debt >0,5; Positive*ROA*=1 if EBIT/total assets >0; *Leverage*: Total debt/total assets; ROAxLEV: product PositiveROA and leverage; Size: logarithm of total assets.
[a] Average data in continous variables and % in dummies.
*, **, ***: significant at 10%, 5% and 1%, respectively.

As mentioned above, judicial efficiency has been approximated by the bankruptcy resolution rate. This rate has been obtained by the quotient between the solved bankruptcies and the

presented ones in a period of time, according to the CGPJ statistics. This rate for each year and Autonomous Communities appears in Table 2.

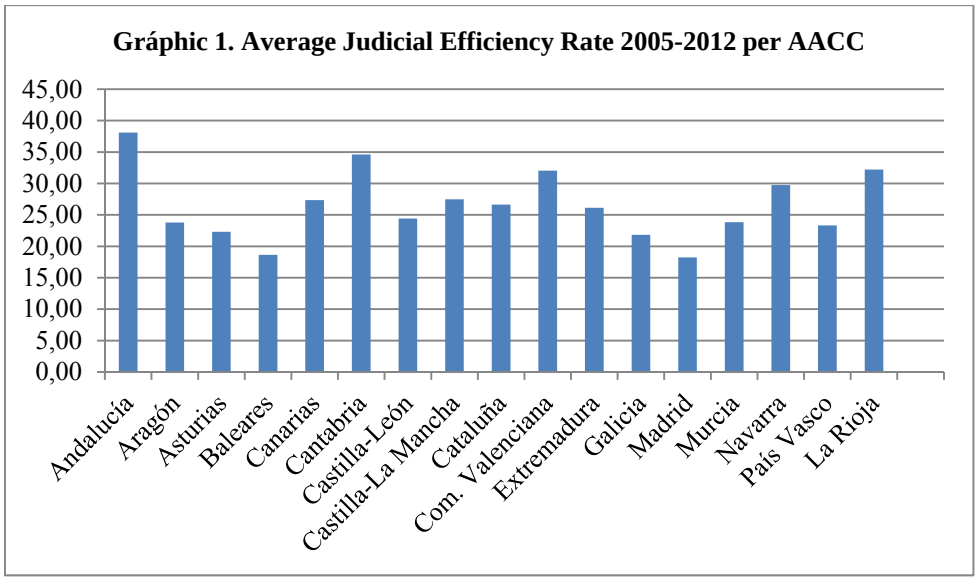
Table 2. Resolution rates per Autonomous Community (AACC) and year

CCAA	2005	2006	2007	2008	2009	2011	2012	Average AACC
Andalucía	28.17	61.06	53.80	29.46	37.92	3.22	82.60	**38.11**
Aragón	16.67	19.15	63.89	35.43	14.78	21.95	30.06	**23.79**
Asturias	33.33	35.14	34.21	55.91	47.93	3.85	1.74	**22.31**
Baleares	18.18	26.23	19.05	31.56	41.15	0.30	25.51	**18.63**
Canarias	37.50	30.61	83.61	36.07	39.13	0.52	0.00	**27.34**
Cantabria	33.33	94.44	87.50	28.95	20.73	3.90	2.29	**34.60**
Castilla-León	16.07	60.00	25.88	29.95	27.32	23.15	18.45	**24.41**
Castilla-La Mancha	33.33	47.83	53.85	18.54	22.43	13.11	21.75	**27.47**
Cataluña	19.57	32.74	46.32	28.16	32.03	26.85	28.96	**26.64**
Com. Valenciana	32.12	51.74	56.47	46.57	47.01	17.57	19.31	**32.03**
Extremadura	44.44	66.67	35.71	35.71	21.88	6.09	8.11	**26.13**
Galicia	18.87	18.97	41.98	27.13	26.29	23.01	23.58	**21.81**
Madrid	26.28	19.75	35.48	11.58	20.31	12.71	13.06	**18.23**
Murcia	28.26	31.91	73.81	12.07	5.25	11.05	16.57	**23.84**
Navarra	27.27	50.00	61.90	24.53	27.14	21.21	20.65	**29.74**
País Vasco	9.17	39.08	42.39	28.33	24.92	21.74	25.95	**23.32**
La Rioja	6.25	33.33	78.57	14.29	50.00	42.00	15.28	**32.20**
Annual Average	**25.23**	**42.27**	**52.61**	**29.07**	**29.78**	**14.84**	**20.82**	**26.51**
Standard Desviation	10.26	20.13	20.23	11.50	12.47	11.33	18.45	5.45

Source: Own compilation based on CGPJ statistics, years 2005-2012. Year 2010 is not available

The average rate of efficiency (estimated by the resolution rate) for the whole period and all of the Autonomous Communities is 26,51%. Nevertheless, it can be noticed that there is an increase in 2005 and 2007, a considerable decline in 2008, and a recovery in 2012. This behavior could be explained by the increase in the number of bankruptcies since the beginning of the crisis, which would not have resulted in a proportional increase of court resources (materials, workers, etc.). This result agrees with the studies that have shown a growth in the number of cases during the crisis (Mora-Sanginetti, 2013).

On the other hand, data presented in Table 1 and represented in Graphic 1 show the existence of efficiency differences among the Autonomous Communities during the analyzed period. Thus, the Communities with greater efficiency levels are Andalucía, Cantabria, Comunidad Valenciana, Navarra and La Rioja. On the contrary, Baleares and Madrid present the lowest efficiency levels. The rest are between approximately 20% and 25%.



Regarding the evolution of the Efficiency Rate per AACC throughout the period, from Table 1 it is possible to deduce that, except Andalucía, in all of the AACC, the Judicial Efficiency Rate is greater in 2007 than in 2012, with a large fluctuation in the period. As mentioned above, the efficiency rate assigned to each sample firm is the average of the rates corresponding to the years from the bankruptcy presentation date to the bankruptcy resolution date. In this sense, the average time of resolution is approximately 1.5 years. In sum, from the previous analysis, it is possible to conclude that there are differences in the judicial efficiency in the Autonomous Communities as well as throughout the period. This variability offers an opportunity to analyze the effect of judicial efficiency in the resolution of the bankruptcies in Spain.

Finally, Table 3 shows the standard deviation and the correlation matrix between the variables in the study. It should be noted that none of the variables presents a high correlation, with the exception of the ROA and leverage with the variable formed by the product of them.

Table 3. Standard Deviation and Correlation Matrix

	D. T.	**1**	**2**	***3***	**4**	**5**	**6**
1. Resolution	0.48	1					
2. Efficiency	11.00	0.0914**	1				
3. Bankdebtdom	0.49	0.1596***	0.0331	1			
4. PositiveROA	0.40	0.0459	-0.0411	-0.0523	1		
5. Leverage.	0.35	-0.1177***	-0.0230	-0.0605	-0.2183***	1	
6. ROAxLEV	0.38	-0.0301	-0.0243	-0.0914**	0.8844***	0.0417	1

7. Size	0.46	0.2116***	-0.0126	0.1425***	0.1150***	-0.0921**	0.1138***

See variable descriptions in Table 1 *, **, ***: significant at 10%, 5% and 1%, respectively

5.2. Econometric Analysis

The empirical testing of the proposed hypotheses was conducted using a probit model with *Resolution* (reorganization versus liquidation) as the dependent variable. The STATA 11 statistics package was used for the model estimations. The models and their results are presented in Table 4. The results of the Model 1, over the total sample, show that judicial efficiency and the existence of a predominance of bank creditors positively affects the likelihood of reorganization of bankrupt firms.

On the other hand, according to the predictions, the firms that went bankrupt with a positive profitability in the previous year show a greater likelihood of reorganization. The level of leverage does not affect the result of the process *per se*. However, if both variables are considered jointly, although the firms with positive ROA have a greater likelihood of reorganization, that likelihood is reduced as leverage gradually increases. Finally, the size is positive, which is an indicator that the larger firms have more likelihood of reorganization.

Table 4. Judicial Efficiency and Bankruptcy Resolution
Dependent Variable: Resolution (reorganization=1, liquidation=0)

Models	**Model 1**		**Model 2**		**Model 3**	
	β	z	β	z	β	z
Judicial Efficiency	0.0108	2.18**	0.0146	1.99**	0.0068	0.99
Bankdebtdom	0.2753	2.42**				
PositiveROA	1.4550	3.32***	2.4115	3.17***	1.0687	1.54
Leverage	0.0115	0.06	-0.0712	-0.23	0.0860	0.17
ROAxLEV	-1.5855	-3.26***	-2.7932	-3.16***	-1.0627	-1.58
Size	0.7004	5.32***	0.6995	3.53***	0.6955	3.74***
Sector	Yes		Yes		Yes	
Intercept	-3.9003	-5.86***	-3.4333	-3.32***	-4.0343	-3.89***
Observations	575		275		300	
R^2	11.13		14.80		8.29	

See variable descriptions in Table 1 *, **, ***: significant at 10%, 5% and 1%, respectively

Owing to the theoretical arguments related to the effect of judicial efficiency over the bankruptcy resolution, which basically consider the bank creditors attitude, the models have been estimated again for firms in which those creditors have a remarkable decision power. That is, the sample has been divided in two sub-samples: firms in which the bank debt is greater than 50% of total debt and the rest of the firms. The results (Models 2 and 3) show that only when the bank debt is dominant, judicial efficiency exercises a positive effect over the likelihood of reorganization. Those results support the suggested hypothesis to the extent that it is based on the bank creditors' attitude. Additionally, in Model 2, all of the variables confirm the sign and statistical significance of the earlier models, while in Model 3, only the size is significant.

Analysis of robustness

To analyze the sensitivity of the obtained results, one robustness analysis is shown. Following Casey et al. (1986), those firms that have entered into liquidation after having reached a reorganization agreement have been eliminated. The results of these models, with a sample of 491 firms, are presented in Table 5. The results of Models 4, 5 and 6 confirm the sign and statistical significance of Models 1, 2 and 3, respectively.

Finally, to the best of our knowledge, this is the first work analyzing the effect of judicial efficiency over bankruptcy resolution, and for this reason, it is not possible to provide a discussion of the obtained results.

Table 5. Judicial Efficiency and Bankruptcy Resolution. Robutness
Dependent Variable: Resolution (reorganization=1, liquidation=0)

Models	**Model 4**		**Model 5**		**Model 6**	
	β	z	β	z	β	z
Judicial Efficiency	0.0105	1.91*	0.1424	1.79*	0.0042	0.53
Bankdebt dom	0.2820	2.17**				
PositiveROA	1.4818	3.06***	2.4904	3.24***	1.1168	1.42
Leverage	0.0600	0.34	0.0178	0.09	0.2045	0.39
ROAxLEV	-1.7210	-3.18***	-2.9750	-3.33***	-1.2241	-1.60
Size	0.8098	5.51***	0.8256	3.71***	0.8466	4.07***
Sector	Yes		Yes		Yes	
Intercept	-4.6059	-6.21***	-4.3189	-3.83***	-4.8289	-4.11***
Observations	491		225		264	
R^2	11.34		13.66		10.13	

See variable descriptions in Table 1 *, **, ***: significant at 10%, 5% and 1%, respectively.

6. CONCLUSIONS

According to the results of previous studies about the effect of judicial efficiency on the credit market, the present study is based on the existence of differences in the application of the Law in the courts or judicial districts. In this sense, it is outstanding that the theoretical arguments used in this study are an extension of the theoretical ideas of those works, and to our knowledge, this is the first study analyzing the effect of the judicial efficiency over bankruptcy resolution. The obtained results allow us to conclude that greater judicial efficiency positively affects the likelihood of reorganization, especially for those firms in which the bank creditors are dominant and therefore have enough power to protect their preferences. In this sense, the results support the predictions about the bank creditors' attitudes that favor the refinancing of bankrupt firms to continue their activity and make easier an agreement with the debtor to postpone his debt.

Finally, the conclusions allow us to extract important practical implications to the extent that they reveal that the high number of firms that end the process in liquidation could be reduced if the judicial system were more efficient.

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