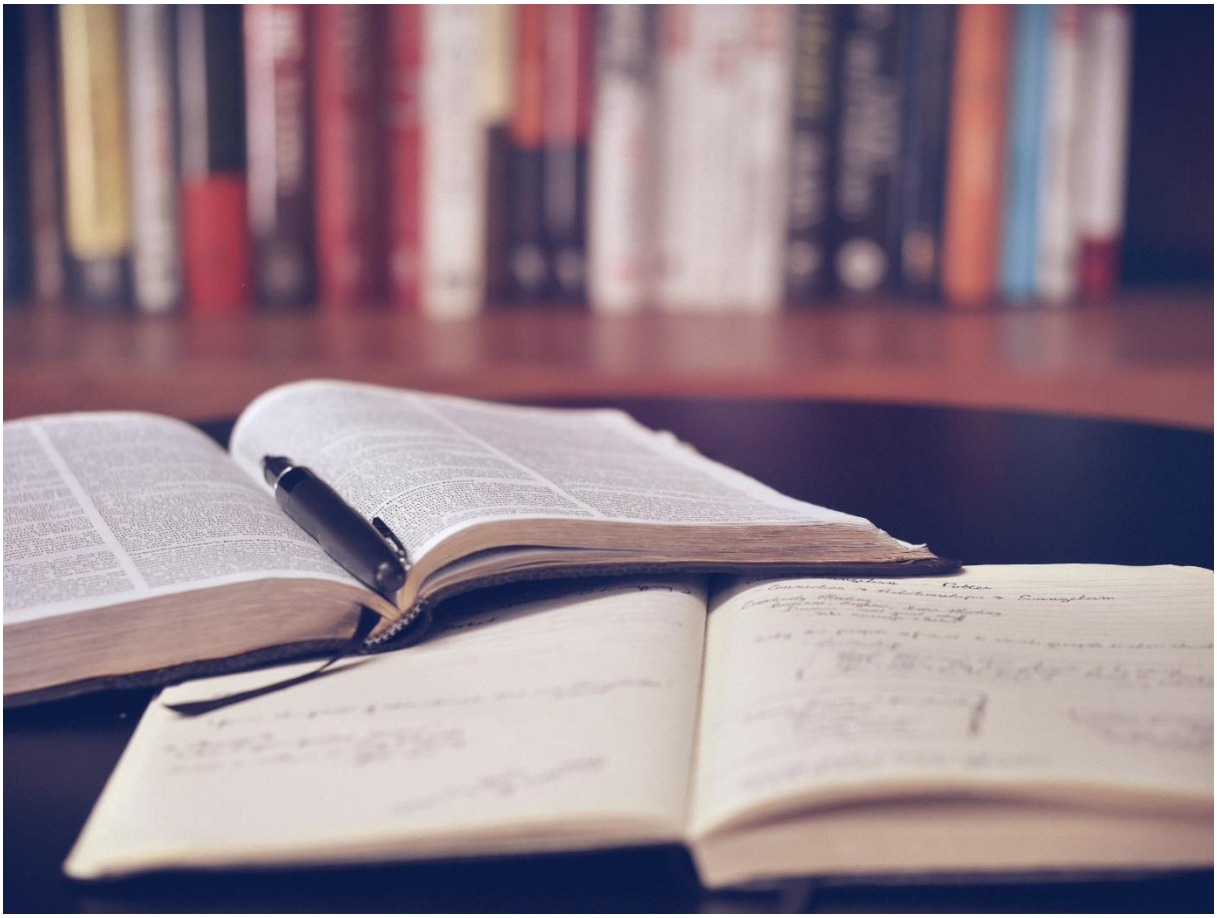
UMR CNRS 6240 LISA

Working Paper TerRA n°09

12-09-2017



Did the establishment of specialised courts affect the frequency of business bankruptcy petitions in Spain?

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Abstract
Spanish small businesses rarely file for bankruptcy, and Spanish bankruptcy rates are among the smallest in the world. The historical inadequacy of the Spanish insolvency system has led most enterprises to rely on the de facto alternative mortgage system, which implies, among other things, overinvestment by debtors in fixed tangible assets. This latter effect can be particularly detrimental to the enabling environment of novel entrepreneurship. It is therefore of interest to examine whether the change in the bankruptcy regime that took place in Spain some ten years ago, with the establishment of specialised commercial courts (Juzgados de lo Mercantil), had any positive effect on bankruptcy rates. In this paper, the staggered timing of the new courts establishment is exploited in order to estimate an endogenous treatment model with a binary policy variable. The results support the direction of the reform, but the size of the estimated parameter suggests further efforts in that direction.

Keywords: bankruptcy, commercial courts, endogenous treatment effects, Spain.
Jel codes: C31, C33, G33, K2.

1. Introduction

Spanish business bankruptcy rates, the ratio between the number of insolvent enterprises filing for reorganization or liquidation and the population of active enterprises at a given time (BBR from now onward), constitute an anomaly. They are among the smallest in the world and stand well outside the range of values of Spain's fellow countries, namely high-income economies with good quality overall judicial systems and insolvency rules[1]. Moreover, econometric evidence from cross-country studies on the relative use of formal bankruptcy procedures (Claessens and Klapper 2005) find that countries with higher levels of real GDP per capita have higher uses of bankruptcy. Combining data from Euler Hermes and OECD[2], in 2006 the number of business bankruptcies per 10,000 enterprises was 179 in France, 115 in the UK, 96 in Germany, 67 in Sweden, 33 in the US, 25 in Italy, 15 in Portugal and only 3 in Spain.

While still waiting for an accepted explanation, this phenomenon has been termed as the Spanish Business Bancruptcy Puzzle (SBBP). Celentani et al. (2010, 2012), to our knowledge among the first to use this label, ascribe the SBBP to the unattractiveness of the bankruptcy procedures and the resulting preference of Spanish firms for alternative (*de facto*) insolvency institutions, such as the mortgage system. They conjecture that, due to the cost and inefficiencies of the bancruptcy system, firms deliberately reduce their probability of filing for bankruptcy, for instance by choosing a low leverage capital structure and over-investing in tangible fixed assets. Having found evidence in the data of lower financial leverages and higher weight of tangible fixed assets, the authors also explored the effect of the 2003 major reform of the Spanish Bankruptcy Code (the *Ley Concursal*, which entered into force in the last quarter of 2004) investigating whether the capital and asset structures of Spanish firms in 2006 differed substantially from the ones of 2002. Since no significant changes were detected, both in the usage rates of formal bankruptcy and in the balance sheets of Spanish firms, they took this finding as an additional positive confirmation of their conjecture. In a parallel study by García-Posada and Mora-Sanguinetti (2014), more centred on the distress of small businesses, the same hypothesis was tested by comparing the choice of capital structure and filing behaviour in Spain and in countries with more efficient bankruptcy systems. Again, the evidence shows that microfirms, which represent the majority of

[1] For a measure of how the rule of law is experienced in practice in different countries see the World Justice Project (WJP) Rule of Law Index 2015. On the global index, Spain ranks 24th out of 102 countries.

[2] Euler Hermes (http://www.eulerhermes.com) is a leading provider of trade-related insurance solutions that publishes regularly an Economic Outlook with worldwide insolvency indicators and country risk assessments. Data on insolvencies come from national statistics and are then homogenised for cross-country comparison. The denominators of both the business bankruptcy ratios (the population of active enterprises) and the conditional business bankruptcy ratios (the number of deaths of enterprises) used here are taken from OECD Structural and Demographic Business Statistics (http://www.oecd.org).

businesses in Spain, overinvest in fixed assets that can be pledged as mortgage collateral in order to avoid the more costly and inefficient bankruptcy procedures in the event of default.

But why worry about this behaviour? One direct answer is provided by Garcia-Posada (2013) within an incomplete contracts model adapted from Bolton and Scharfstein (1996) that implies three sources of potential efficiency losses associated witht low business bankruptcy rates (i.e. prevalence of the mortgage system): overinvestment in capital assets by those firms that require high level of other inputs; some inefficient liquidations[3] due to the creditor-friendliness of the insolvency regime and the inherent liquidation bias of creditors; no access to unsecured lending such as venture capital for the smallest firms as long as some of the bankruptcy costs are fixed. These losses "will be greater for firms with low liquidation values but high going-concern ones, such as those from technologically innovative industries, which are normally characterised by high levels of human capital and firm-specific assets. Therefore, the rare use of the bankruptcy system may be associated to low levels of welfare "(p. 10).

In our view, the above arguments become even more meaningful in light of the ongoing debate on the relationship betwen the institutional context and entrepeneurship (Acs, Åstebro, Audretsch and Robinson 2016), which carefully differentiates routine entrepreneurship ("a type of management", p. 37) and novel entrepreneurship ("activities necessary to create or carry on an enterprise where not all the markets are well established or clearly defined, and in which the relevant parts of the production function are not known", p. 37). In this latter case the public policy issue is about the enabling environment and whether it allows the entrepreneur to complete the production function and fill in the missing input markets: "a question of knowledge and knowledge spillovers, finance and human capital" (p. 38). Indeed, taking one of the most popular model of novel entrepreneurship such as Audretsch and Keilbach (2007), it is immediate to see the inefficiency of an insolvency system dominated by secured loans. Unlike the traditional approach, that assumes entrepreneurial opportunities as given (and pervasive) and concentrates on the individual specific attributes that make an entrepreneur, here entrepreneurship is an endogenous response to opportunities that originate from *incomplete commercialization* in incumbent organizations, i.e. ideas and knowledge left uncommercialized as a result of uncertainty inherent in knowledge and appropiable by third parties due to the unique properties (non-excludabilty and non-exhaustibility) of this factor of production. Thus, "in contrast to investment in traditional resources, such as physical capital, investments in knowledge have a high propensity to spillover for commercialization by third-party firms" (p. 1246) and "contexts rich in knowledge should generate more entrepreneurship, reflecting more

[3] Here inefficient liquidation refers to the liquidation of the firm's assets by the creditor even if the project's continuation value is higher than its liquidation value.

extensive entrepreneurial opportunities" (p. 1249). Both these facts are well documented in the empirical literature.

Against this backdrop, and the more recent evidence that Spanish bankruptcy rates soared during the crisis closing marginally the gap relative to the rest of the EU countries (see Table 1), it is surprising that little attention has been paid to whether or not a key ingredient of the recent bankruptcy reform, namely the creation of specialised commercial courts (SCCs), has played any role. Indeed, by exploiting the staggered timing of SCC establishment, we are able to estimate the impact of these specialised courts on the usage of the bankruptcy system through an endogenous treatment-regression model. After controlling for other relevant variables, the analysis provides support for specialised courts. This suggests that Spain, in the (likely) event of further revisions of the insolvency act, should build on the positive evidence regarding these new institutions. The rest of the paper is organized as follows. The next session relates the paper to the small but increasing number of studies concerning the impact of specialised courts on economic/legal outcomes. The following three sections are dedicated to describing the Spanish case study, discussing the methodology adopted for the empirical application and presenting the results, respectively. The final section draws some conclusions.

2. Overview of related studies

In addition to the papers cited in the introduction and the empirical literature on entrepreneurship and bankruptcy (see, for example, Armour and Cumming 2008 and Lee et. al. 2011), the contributions more relevant to our work are those by Dreyfuss (1990), Visaria (2009), Garoupa et. al. (2010), Gennaioli and Rossi (2010), Chemin (2012), Gamboa-Cavazos and Schneider (2007) and Ponticelli (2014). Dreyfuss (1990) scrutinises advantages and disadvantages of specialised courts. She argues that the positive components (e.g. reduced workload of generalist courts, more efficiency in handling cases, more rapid, consistent and uniform judicial decisions) are easily matched by the negative ones (e.g. no cross-pollination among legal theories, higher risk of capture by specialised interests, new sources of contention, even additional workload). Extending the analysis to include past experiences (from the US) and factors that contribute to the success of a specialised tribunal (peculiarities of the field of specialisation; characteristics of involved parties, bar and judges; implementation strategy), she concludes that "it seems clear that there are some fields of law that would benefit from consolidation and expert adjudications. Decisions to establish new specialized tribunals should be animated by a desire to capture these benefits, rather then primarily by the wish to resolve the federal dockets crisis" (p. 441). Garoupa et. al. (2010) investigate one of the major expected advantages of specialised courts -faster decisions - in

relation to family law in Spain. Like many other civil law countries, under the pressure of increasing divorce rates and associated litigations, Spain has developed a network of family courts, mainly located in the capital city of a province. In districts where these courts have no jurisdiction, the civil court of first instance takes care of the family law. Controlling for the court and the location where the process began and for a host of variables concerning the complexity and the administrative procedures associated with the cases, they estimate an ordered probit on the probability of a case subject to litigation being concluded within given time intervals. Specialized courts seem to handle litigation with a lower average duration than regular courts, but the overall econometric evidence is not strong. The work by Visaria (2007), on the effects of the judicial reform that established Debt Recovery Tribunals (DRTs) in India, tells a different story. DRTs are special in that they follow a summary procedure that demands faster processing and greater accountability by the litigants, otherwise they are similar to standard civil courts. The initial opposition to the judicial reform led to a staggered pattern of establishment of DRTs that allows the author to implement a difference-in-difference econometric analysis about the impact of DRTs on both repayment behaviour and lending behaviour. It is found that the specialised tribunals reduced delinquency for the average loan by 28 percent and lowered the interest rates charged on larger loans. Similarly Chemin (2012), in relation to the 2002 Amendment Act implemented in India to facilitate the speedy disposal of cases, after showing that the Act had the intended effect, analyse the impact of the reform on firm performances. Again, the spatial variation induced by the fact that some states had already enacted some of the amendments of the Act allow the author to isolate - through a difference-in-difference strategy - the impact of the courts on economic activity. More precisely, focusing on a sample of nonagricoltural firms, it is found that speedier courts decrease the probability to experience a breach of contract, increases investment, and decreases the probability to experience a shortage of capital. Finally, Ponticelli (2014) in the attempt to test the implications of a model of technology adoption by firms, in which the maximum amount they can borrow depends on the strenght of creditor protection (national) rules and on the efficiency of local courts, implement a difference-in-difference strategy that exploits a major bankruptcy reform that took place in Brasil in 2005 (external source of variation) and the heterogeneity of congestion across Brazilian court districts (source of cross-sectional variation). After the reform, firms operating under less congested courts experienced larger increase in investment and productivity.

3. Background information and data

On bankruptcy matters, Spain makes an interesting case study not only because it represents an outlier relative to the richest countries of the world but also because it provide an example of a major insolvency reform that was enacted with great expectations and is now under profound review. During the period under study (2005-2013), Spain was hit by a tremendous economic crisis, that pushed the number of bankruptcies from 919 cases in 2005 to 9,022 in 2013, a dramatic 881.7% increase (source: Instituto Nacional de Estadistica, 2015). The bankruptcy rate, however, might have soared also in response to the greater attractiveness of the insolvency system relative to the past. With the entry into force on September 2004 of the Organic Law 8/2003[4] and the Insolvency Act 22/2003, the old insolvency framework (and its pitfalls[5]) was phased out and replaced by a brand new system. At its centre, stand the *Juzgados de lo Mercantil*, special commercial court competent to hear and decide on insolvency. The Mercantile Judge's jurisdiction is exclusive and excludes others in relevant matters (e.g. civil actions against the insolvent debtor assets; labour actions in which the employer is the insolvent debtor; all enforcement on properties, goods and rights pertaining to the insolvent debtor's aggregate assets).

The judges sitting in these new courts are expected to have an in-depth knowledge of the matters brought before them, so that they may make fully informed decisions on matters of unquestionable technical difficulty, and do it more efficiently. The expected broader unity and understanding in the interpretation of law will also result in greater legal certainty[6].

As a general rule, the Ley Organica 8/2003 (article 2) envisaged the creation of at least one Commercial Court in the capital of each province (more than one, in different districts of the provincial capital, when warranted by the size of the population, the concentration of industry or businesses and the scale of

[4] Under the Spanish Constitution, unlike an ordinary law, an organic law is required on specific areas of law (e.g. fundamental rights) and must be passed by an absolute majority of the Congress of Deputies. In the present case modifications to both the fundamental rights of the debtors and the judicial organisation prompted this rank of the law.

[5] It is interesting to recall such pitfalls as they are spelled out in the motivations (expósition de motivos) of the Ley 22/2003: "arcaísmo, inadecuación a la realidad social y económica de nuestro tiempo, dispersión, carencia de un sistema armónico, predominio de determinados intereses particulares en detrimento de otros generales y del principio de igualdad de tratamiento de los acreedores, con la consecuencia de soluciones injustas, frecuentemente propiciadas en la práctica por maniobras de mala fe, abusos y simulaciones, que las normas reguladoras de las instituciones concursales no alcanzan a reprimir eficazmente."

6 Indeed, according to the judge Blas Alberto González Navarro (p. 8) "The first edition of the examination was sat by the most well-known Judges, those who had been hearing mercantile cases for years, especially in Madrid and Barcelona, and a second group of Magistrates who were simply interested in the subject ... [N]early 150 candidates applied for 50 positions, but only 37 passed the exam. Famous names who at the time were considered the elite of mercantile justice failed."

economic activity), with jurisdiction over the province territory. In order to understand the geography of the reform, it is worth reminding that Spain has three levels of territorial organization: municipalities (NUTS 1), provinces (NUTS 3) and autonomous communities/cities (NUTS 2). There are 50 provinces and 19 autonomous communities (2 of which are the autonomous cities of Ceuta and Melilla).

The new specialised courts have been established mostly in large cities and the original plan is yet to be completed. The initial distribution of these courts was as follows: 5 in Madrid, 4 in Barcelona, 2 in Valencia and 1 in each of another 13 provinces (Cadiz, Malaga, Seville, Oviedo, Palma de Majorca, Las Palmas de Gran Canaria, Santa Cruz de Tenerife, Alicante, La Coruña, Pontevedra, Murcia, San Sebastian and Bilbao). Thus, by 2015 about 24 new commercial courts were created. Figure 1 shows the spatial distribution of these Commercial Courts in 26 provinces[7]. In the areas not yet covered by the new tribunals, the bankruptcy law will be exercised by the ordinary civil courts (Juzgados de Primera Instancia)

4. Methodology

Both the debate that preceded the reform and the explicit motivations for special courts written in the Organic Law 8/2003 underline the increased attractiveness of the new bankruptcy regime, with its promise of consistent, uniform and swift decisions. So, all other things being equal, provinces in which Commercial Courts are present should experience an expansion in the demand for bankruptcy procedures, that is an increase in the bankruptcy rate.

To test this hypothesis, a quarterly provincial dataset of Spanish bankruptcy petitions has been collected from INE (Instituto Nacional de Estadistica, 2015)[8]. The time span is 2005Q1-2013Q4. By means of a panel data approach, we have explored the relationship between Commercial Courts' implementation and bankruptcy rate in Spain. We speculate on the fact that so far not all Spanish provinces (NUTS 3) have at least one commercial court. In other words two groups can be identified: the treated and untreated (or control ones). Comparing the average level of the two groups and controlling for other relevant explanatory variables, we are able to measure the effect of judicial reform on bankruptcy rate.

In mathematical notation the regression equation specification is as follows:

$$BANK_{it} = \beta_0 + \beta_1 FIRMS_{it-1} + \beta_2 GDP_{it-1} + \beta_3 \Delta GDP_{it-1} + \beta_4 LTV_{it-1} + \beta_5 SE_{it-1} + \beta_6 COURTS_{it-1} + \varepsilon_{it} \quad (1)$$

[7] This Figure has been downloaded from http://www.poderjudicial.es/ (01/09/2016).
[8] Las Palmas de Gran Canaria, Santa Cruz de Tenerife, Ceuta and Melilla have been excluded, since the data for these territories are incomplete.

where ε_{it} stands for the error component. Regional, year and seasonal dummies are also included in order to control for time and individual effects. All the variables are lagged by one period to reduce the likelihood of endogeneity.

The dependent variable ($BANK_{it}$) is the number of formal bankruptcies per 1,000 firms in the *i*-th province at time *t*. *FIRMS* indicates the number of enterprises over the province population. It should represent firms' density and the expected sign is positive.

GDP and *ΔGDP* indicate real GDP per capita and real GDP growth, respectively. The latter is included to control for the business cycle.

LTV represents the loan-to-value, that is the ratio between the average mortgage and the average house price in the *i*-th province at time *t*. This ratio captures the amount of debt as a percentage of the value of the collateral. A high value of this variable, for example 90%, means that the loan is a risky one as a decrease in value of the collateral by only 10% reduces the value of the collateral below the amount owed to lenders. The expected sign is not unequivocal here. On the one hand, higher values of *LTV* can increase the probability of bankruptcy; on the other hand, according to Garcia-Posada and Mora-Sanguinetti (2012), we might expect a trade-off between the use of the bankruptcy system and the mortgage system. In the latter case, a negative correlation between bankruptcy rate and *LTV* is expected.

SE indicates the share of small enterprises (i.e. with less than 50 employees) over the total number of firms. This covariate controls for the production structure of each province. Since small businesses traditionally tend to skip the bankruptcy procedures, a negative sign is expected.

COURTS is our variable of interest. It is a dummy variable that denotes the presence of commercial courts: it takes a value of one if a commercial court is operating in the i-*th* province at time *t*. The idea is to compare the treated and control groups in order to measure the effect of judicial reform. Unfortunately, as highlighted in the previous section and showed in Figure 1, the spatial distribution of these commercial courts is not random. In other words, their presence is related to the local demand of commercial court services. For example, the higher the number of bankruptcy in a given province, the higher the probability to enact a commercial courts there. This means that our treatment variable, *COURTS*, is endogenous and that standard difference-in-difference strategies (e.g. as in Visaria 2009) cannot be adopted.

Nevertheless, we can implement the endogenous treatment-regression model pioneered by Heckman (1976, 1978) and developed by Maddala (1983) with two different estimators based respectively on the maximum likelihood and the standard two-step approach. More recently, Cameron and Trivedi (2005) and Wooldridge (2010) apply this family of models to the case of an endogenous binary-variable. These

techniques allow to estimate an average treatment effect (ATE) and the parameters of a linear regression model augmented with an endogenous binary-treatment variable.

More formally, the endogenous treatment-regression model is composed of an equation for the outcome *BANK* and an equation for the endogenous treatment *COURTS*:

$$BANK_{it} = X_{it}\beta + \delta\, COURTS_{it} + e_{it}$$
$$COURTS_{it} = \begin{cases} 1, & if \quad w_{it}\gamma + u_{it} > 0 \\ 0, & otherwise \end{cases} \quad (2)$$

The covariates x_i and w_i are uncorrelated with the error terms (both e and u); in other words, they are exogenous. In our case, the matrix X in Equation (2) includes all covariates listed in (1), except for *COURTS* (our endogenous treatment variable).

We have to find one (or more) instrumental-variable(s) for dealing with the endogeneity issue. Notably, these variables have to be correlated with the endogenous treatment *COURTS*, but not with the dependent variable *BANK*. Two variables are proposed here: *BIGFIRM* and *GDPSIZE*. The first one (*BIGFIRM*) indicates the number of big firms (i.e. with less than 500 employees) in a given province, the second (*GDPSIZE*) is the real aggregate GDP of the i-th province. The rationale is that together they account for the local demand of justice services. The higher the size of the local economy and the greater that of big firms, the higher the number of bankruptcy procedures initiated in a given province. Consequently, the probability to open a commercial court increases with these two variables. Also in this case, both variables are lagged by one period.

Table 2 displays descriptive statistics of all the variables under study. All variables are expressed in log terms (except for the dummy COURTS and ΔGDP).

5. Results

Consider, first, a comparison of the bankruptcy rate ($BANK_{it}$, as defined in Section 4) across provinces according to the presence of a commercial court in the time span 2005-2013. Provinces in which a commercial court is operating experience higher levels of bankruptcy rates than provinces covered by ordinary courts only: on average, in the former we observe 0.342 per 1,000 firms while in the latter the corresponding number is only 0.255 (the value of the t statistic is 6.192, which indicates that the difference of means is statistically significant at the 0.001 level).

Thus, *prima facie* commercial courts have a positive effect on Spanish bankruptcy rates. But what about a more rigorous econometric formulation that controls for the number of firms, GDP per capita, GDP growth, loan-to-value ratio, small firms share in the economy and endogeneity issues between bankruptcy rate and commercial courts?

To this end we estimate different specifications using the two-step robust endogenous treatment-regression model, known also as endogenous binary-variable model or endogenous dummy-variable model, using STATA13 software (*etregress* command). Results are shown in Table 3.

As shown in the bottom rows of Table 3, all diagnostic tests are statistically significant for all the specifications which give support to the model. Rho, i.e. the estimated correlation between the treatment-assignment errors and the outcome errors, indicates that the unexplained part that raise observed bankruptcy rates tends to occur with the unexplained component that lowers commercial courts' presence. The Wald statistic is a test of the overall significance of the regression model (except for the constant).

All columns include year dummies, the first and second columns regional dummies, while the first and forth columns seasonal controls. The results support the idea that provinces in which a commercial court is operating tend to be those with higher bankruptcy rates. Using (I), the presence of a commercial courts increases, on average, corresponds with a 0.93% increase in bankruptcy rate. These findings are rather robust: year, region and seasonal controls included can be dropped without affecting the main results.

The two instrumental variables are significant and positive, as expected. In other words, BIGFIRMS and GDPSIZE explain the creation of commercial courts in a given province. We interpret this result as favourable evidence for the choice of the instrumental variables.

The coefficients of the remaining variables are in line with expectations. Looking at (I), FIRM is significantly and positively correlated with bankruptcy rates: an increase by 1% in firms' density raises the bankruptcy rate by 3.08%. As expected, GDP has a negative and highly significant impact: a one per cent increase in GDP per capita leads to a 1.84% decrease in bankruptcy rate. The same applies to the covariates loan-to-value and small firms share. These findings seem to confirm the trade-off between the use of the bankruptcy system and the mortgage system. Furthermore, the higher the share of small enterprises in the economy of a given province, the lower its bankruptcy rate. Again, small businesses depress the demand of bankruptcy procedures. Finally, GDP growth is positive but not significant in any specification.

Table 4 shows some robustness checks. The parameter of interest is strong and significant when there are no covariate controls (column I). After including the explanatory variables in the model (columns II-VI, Table 4), the impact of commercial courts is virtually unchanged (ranging between 1.80 and 2.06),

indicating that the effect is rather robust. The last column (VII) of Table 4 presents the ordinary least square (OLS) regression results. Again, the main results are confirmed.

Other instrumental variables are also tested. We might expect that the population size (POP) and the growth in bankruptcy rate (ΔBANKRUPTCY) could drive the local demand of court services. We include them in Equation (2). As one can see in Table 5, results confirm the positive and significant effect of the establishment of commercial courts on the number of bankruptcies, whose coefficient ranges between 0.88 and 1.34.

An interesting result is shown in Table 6. An interactions term is added in order to test the hypothesis that commercial courts, reducing the expected costs of bankruptcy procedures, might prompt small firms to file for bankruptcy. To do so, the interaction term between the small firms share (SE) and the dummy variable (COURTS) are included. We notice that SE is still negative, which means that, *ceteris paribus*, a province with an high share of small firms experiences a lower number of formal bankruptcies per 1,000 enterprises. The dummy variable COURTS is still significant and positive, while the interaction term (COURTS x SE) is positive. Hence, on average, the impact of small firms is smaller in the provinces with commercial courts (92.88 - 233.03 = -140.15) than in the rest of the country (-233.03). Though interesting, this result is weakened by the fact that the coefficient of the interaction variable is only marginally significant (90% level). Furthermore, it goes without saying that our dataset does not allow direct observation of firm behaviour and that in order to disentangle this effect micro-level data are needed.

6. Concluding comments

In this paper, we use a panel dataset concerning bankruptcy rates across Spanish provinces to examine the effect of a major reform aimed at raising the quality of judicial administration in insolvency matters. We focused on the role played by the special commercial courts, or *Judgados de lo Mercantil*, established by the Organic Law 8/2003 with the aim not only of speeding up the bankruptcy process but also to achieve greater accuracy, uniformity and consistency of courts decisions in commercial disputes. Exploiting the staggered timing of the courts establishment, we implemented an empirical strategy based on the endogenous treatment regression model aimed at gauging the impact of these new courts on bankruptcy rates. In light of our estimation results, the new commercial courts have had a positive and significant impact on the frequency of bankruptcy petitions. The robustness checks confirm this finding. While this evidence supports the direction of the Spanish bankruptcy reform, its modest strenght and the fact that Spanish bankruptcy rates are still lagging behind those of rich Western countries, points out that

specialised courts governed by competent judges, though necessary, are not sufficient to hit the ambitious targets of the reform.

Tables

Table 1. Bankruptcies over population of active enterprises (x 100,000)

	2008	2009	2010	2011	2012	2013	Mean
Belgium	162.4	179.1	179.1	187.6	189.0	203.4	183.4
Czech Rep	13.2	16.2	17.4	18.0	38.1	60.9	27.2
Denmark	176.4	271.6	303.9	250.7	250.2	230.9	247.2
Germany	98.5	111.3	108.1	100.8	94.4	87.5	100.1
Estonia	57.5	145.0	146.4	142.6	66.6	57.9	102.6
Ireland	38.1	70.6	79.6	86.6	90.8	73.6	73.2
Spain	7.7	16.0	15.8	19.3	25.9	30.2	19.1
France	216.0	229.1	215.0	203.7	200.6	197.4	210.2
Italy	18.0	23.5	28.6	30.5	31.5	36.1	28.0
Latvia	158.6	269.5	311.4	210.3	94.1	84.5	188.0
Lithuania	66.0	151.9	135.0	96.4	88.8	98.1	106.0
Lux	225.1	261.6	332.5	341.2	361.6	347.1	311.5
Hungary	194.3	261.6	314.2	356.6	426.7	283.3	306.1
Netherl	61.1	83.6	74.9	70.5	82.8	89.7	77.0
Austria	154.7	165.2	149.4	136.4	139.8	126.1	145.2
Poland	2.3	3.5	3.5	3.7	4.7	4.6	3.7
Portugal	34.8	41.3	46.8	56.0	83.2	76.3	56.4
Slovakia	16.8	21.6	23.7	23.5	26.0	33.1	24.1
Finland	103.9	134.3	118.7	118.4	119.1	129.5	120.6
Sweden	99.0	117.2	109.0	97.2	101.5	107.0	105.1
UK	139.0	166.8	144.6	151.7	145.7	119.7	144.5
Norway	133.7	184.8	164.9	158.5	136.7	166.5	157.5
Total	78.7	94.2	92.5	91.5	94.4	91.2	90.3

Source: http://www.tradingeconomics.com/

Table 2. Descriptive statistics (#Obs. = 1728)

	mean	sd
BANK	-2.48	3.10
FIRMS	-2.70	0.12
GDP	3.03	0.18
ΔGDP	0.0018	0.019
LTV	1.95	0.15
SE	-0.0066	0.0024
COURTS	0.51	0.49
BIGFIRMS	3.67	1.27
GDPSIZE	16.32	0.90

All variables are expressed in log terms (except for the dummy COURTS and ΔGDP).

Table 3. The endogenous treatment-regression model.

	(I)	(II)	(III)	(IV)
$FIRMS_{t-1}$	3.08***	3.06***	3.17***	3.18***
	(0.71)	*(0.71)*	*(0.66)*	*(0.66)*
GDP_{t-1}	-1.84***	-1.83***	-1.50***	-1.57***
	(0.64)	*(0.65)*	*(0.58)*	*(0.57)*
ΔGDP_{t-1}	5.03	6.46	6.15	4.70
	(3.70)	*(3.97)*	*(3.96)*	*(3.69)*
LTV_{t-1}	-1.16**	-1.16**	-1.22**	-1.23***
	(0.51)	*(0.51)*	*(0.39)*	*(0.39)*
SE_{t-1}	-181.06***	-181.15***	-203.05***	-202.63***
	(44.83)	*(44.98)*	*(41.65)*	*(41.61)*
$COURTS_{t-1}$	0.93***	0.92***	0.99***	1.00***
	(0.17)	*(0.17)*	*(0.16)*	*(0.16)*
Constant	9.85***	9.77***	9.44***	9.50***
	(3.50)	*(3.56)*	*(3.30)*	*(3.26)*
Dummy region	*yes*	*yes*	*no*	*no*
Dummy year	*yes*	*yes*	*yes*	*yes*
Dummy season	*yes*	*no*	*no*	*yes*
Dep: COURTS				
$BIGFIRMS_{t-1}$	2.13***	2.14***	2.09***	2.08***
	(0.23)	*(0.23)*	*(0.23)*	*(0.23)*
$GDPSIZE_{t-1}$	2.42***	2.42***	2.43***	2.43***
	(0.30)	*(0.30)*	*(0.30)*	*(0.29)*
Constant	-46.99***	-47.13***	-47.12***	-46.98***
	(4.65)	*(4.65)*	*(4.59)*	*(4.57)*
Rho	-0.33***	-0.31***	-0.36***	-0.39***
Wald test	741.35***	722.99***	710.62***	725.73***
AIC	7882.61	7902.50	7900.52	7880.45

Robust standard errors reported in parentheses. *** 1%; ** 5%; * 10% level of significance.

Table 4. Robustness check of model specification and method.

	(I)	(II)	(III)	(IV)	(V)	(VI)	(VII)
$FIRMS_{t-1}$		2.15***	2.50***	2.37***	2.28***	3.25***	3.84***
		(0.55)	*(0.69)*	*(0.68)*	*(0.68)*	*(0.71)*	*(0.71)*
GDP_{t-1}			-0.67	-0.73	-0.59	-1.84***	-2.05***
			(0.48)	*(0.48)*	*(0.48)*	*(0.63)*	*(0.64)*
ΔGDP_{t-1}				4.83	4.85		5.00
				(3.73)	*(3.72)*		*(3.76)*
LTV_{t-1}					-1.33***	-1.17**	-0.90*
					(0.50)	*(0.51)*	*(0.50)*
SE_{t-1}						-191.14***	-248.78***
						(44.38)	*(46.95)*
$COURTS_{t-1}$	1.57***	1.41***	1.42***	1.42***	1.42***	0.90***	0.38***
	(0.15)	*(0.16)*	*(0.16)*	*(0.16)*	*(0.15)*	*(0.17)*	*(0.12)*
Constant	-5.50***	0.41	3.35	3.25	5.29	10.19***	11.66***
	(0.36)	*(1.52)*	*(3.07)*	*(3.05)*	*(3.20)*	*(3.51)*	*(3.39)*
Dummy region	yes	yes	yes	yes	yes	yes	*yes*
Dummy year	yes	yes	yes	yes	yes	yes	*yes*
Dummy season	yes	yes	yes	yes	yes	yes	*yes*
Dep: COURTS							
$BIGFIRMS_{t-1}$	2.06***	2.08***	2.07***	2.14***	2.13***	2.06***	
	(0.22)	*(0.22)*	*(0.22)*	*(0.23)*	*(0.23)*	*(0.23)*	
$GDPSIZE_{t-1}$	2.33***	2.35***	2.34***	2.26***	2.25***	2.50***	
	(0.30)	*(0.30)*	*(0.30)*	*(0.30)*	*(0.30)*	*(0.30)*	
Constant	-45.26***	-45.72***	-45.61***	-44.53***	-44.31***	-48.07***	
	(4.68)	*(4.66)*	*(4.65)*	*(4.68)*	*(4.62)*	*(4.62)*	
Rho	-0.40***	-0.36***	-0.37***	-0.40***	-0.42***	-0.29***	
Wald test	746.00***	750.33***	754.48***	723.37***	727.20***	773.96***	
AIC	8209.40	8200.89	8201.81	7901.55	7898.80	8180.70	R^2 = 0.39

Robust standard errors reported in parentheses. *** 1%; ** 5%; * 10% level of significance.

Table 5. Robustness check of instrumental variables.

	(I)	(II)	(III)	(IV)	(V)
$COURTS_{t-1}$	0.97***	1.13***	0.88***	1.34***	1.25***
	(0.21)	*(0.16)*	*(0.17)*	*(0.22)*	*(0.27)*
Other independent variables: $FIRMS_{t-1}$, GDP_{t-1}, ΔGDP_{t-1}, LTV_{t-1}, SE_{t-1}					
Dummy region	yes	yes	yes	yes	yes
Dummy year	yes	yes	yes	yes	yes
Dummy season	yes	yes	yes	yes	yes
Dep: COURTS					
$BIGFIRMS_{t-1}$	2.93***		2.35***	1.81***	2.01***
	(0.18)		*(0.24)*	*(0.24)*	*(0.27)*
$GDPSIZE_{t-1}$		3.98***	2.31***	2.11***	2.07***
		(0.22)	*(0.31)*	*(0.29)*	*(0.31)*
POP_{t-1}			-1.90***		-1.46***
			(0.32)		*(0.42)*
$\Delta BANKRUPTCY_{t-1}$				0.10***	0.09***
				(0.03)	*(0.03)*
Constant	-10.59***	-64.65***	-51.22***	-40.91***	-44.92***
	(0.65)	*(3.66)*	*(5.35)*	*(4.78)*	*(5.64)*
Rho	-0.29***	-0.44***	-0.30***	-0.60***	-0.56***
Wald test	739.08***	758.08***	740.36***	746.63***	742.00***
AIC	7965.35	8050.90	7874.07	7869.46	7864.59

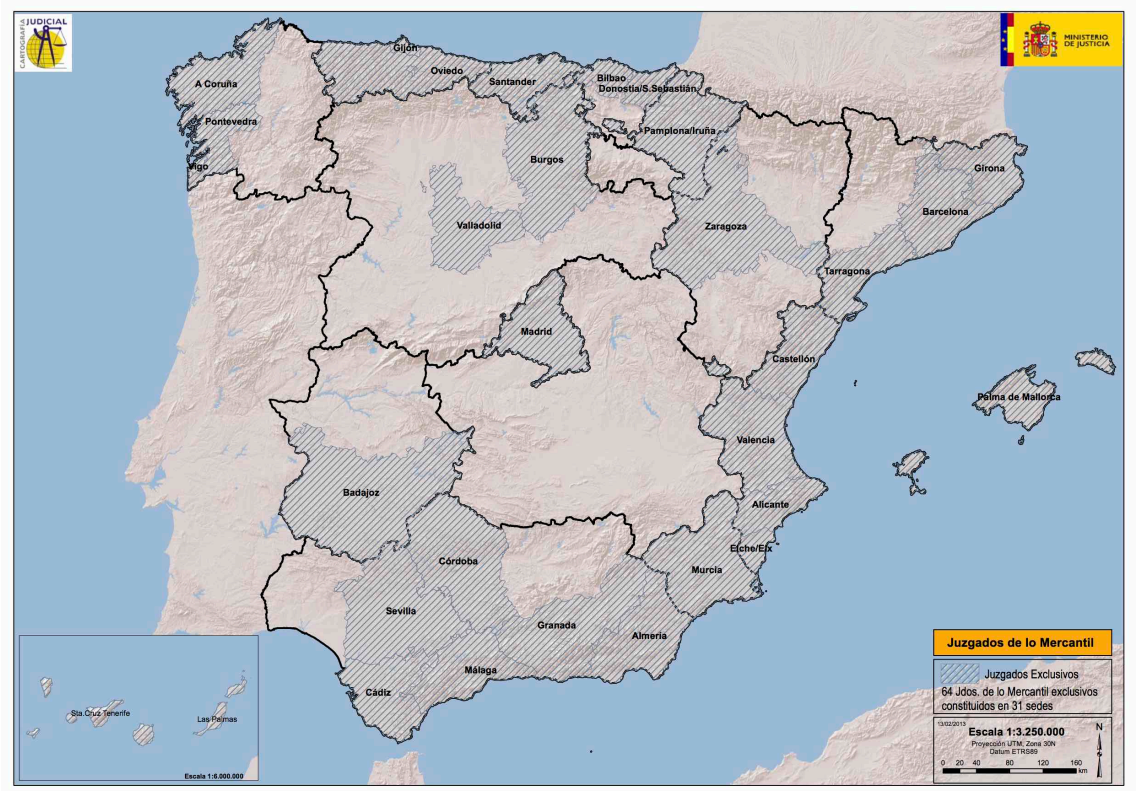
Robust standard errors reported in parentheses. *** 1%; ** 5%; * 10% level of significance.

Table 6. The endogenous treatment-regression model; Interaction between commercial courts dummy and small firms share

	(I)
$COURTS_{t-1}$	1.51***
	(0.34)
$COURTS_{t-1}$ x SE_{t-1}	92.88*
	(50.49)
SE_{t-1}	-233.03***
	(60.14)
Other independent variables: $FIRMS_{t-1}$, GDP_{t-1}, ΔGDP_{t-1}, LTV_{t-1}	
Dummy region	yes
Dummy year	yes
Dummy season	yes
Dep: COURTS	
Instrumental variables: $BIGFIRMS_{t-1}$, $GDPSIZE_{t-1}$	
Rho	-0.30***
Wald test	743.40***
AIC	7882.22

Robust standard errors reported in parentheses. *** 1%; ** 5%; * 10% level of significance.

Figure 1. Spatial distribution of Commercial Courts in Spain



This Figure has been downloaded from http://www.poderjudicial.es/ (01/09/2016).

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