

## **Empirical Analysis of Litigation Incentives: The Case of Spain**

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### **Abstract**

This paper analyses the determinants of civil litigation during the last fifteen years in Spain drawing on the Law and Economic Approach. Using a panel data for 50 Spanish provinces, this study empirically investigates whether the 2001 New Civil Procedure Act has increased the demand for litigation over the period 1995-2009. According to the results the civil procedure reform has had a relatively gradual but important effect on the litigation rate across Spanish provinces. However, our results point to a relatively higher effect of income, education, population density and the level of unemployment on the of litigation rate in Spain over the period of study.

### **Key Words:**

Litigation Incentives, Law Reform, Economic Analysis of the Legal Process.

### **JEL Classification:**

D02, K40, K41.

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<sup>1</sup> Virginia Rosales and Dolores Jiménez are lecturers at the Department of Applied Economics, Granada University. We would like to thank D. Ildefonso Villán Criado for his valuable help with the Judicial Statistics of the Spanish Council of the Judiciary. We also like to thank the Spanish Bar Association for the data on the Spanish Bar. We gratefully acknowledge the advice of David Epstein, Nuno Garoupa and Sabela Oubiña. Virginia Rosales is particularly grateful with Santos Pastor for his valuable comments on a preliminary version of this paper. This study has benefited from a research placement at the Institute of Law and Economics in Hamburg. Authors thank the Spanish Ministry of Science and Technology (research grants ECO2011-29445 and ECO2010-17049).

## 1. Introduction

Drawing on the Law and Economic approach, the decision to demand justice responds to several incentives which are able to modify litigants' behaviour.<sup>2</sup> Litigants are considered rational agents whose main objective is to maximize their expected utility.<sup>3</sup> Following Ginsburg and Hoetker (2006) we proposed an empirical study to determine the effect of the law reform, the expansion of the bar, the judicial capacity, the changes in the economy and other socio-demographics determinants on the demand of justice in Spain.

In the last fifteen years, the most important legal reform occurred in the Spanish Civil Jurisdiction has been the implementation of the New Civil Procedure Act in 2001. This reform provides a change in the incentive framework for litigation, due mainly to a decrease in the cost of file a lawsuit.<sup>4</sup>

On the other hand, in this time period the rate of lawyers and judges per 100,000 population has increased, expanding the supply of justice in Spain. At the same time, the Spanish economy has turned from a period of economic boom to a recession, which has resulted in the closure of many companies and rising unemployment.

The aim of this paper is to examine empirically the effects of the New Civil Procedure Act on the rate of Litigation in the Spanish Civil Courts of First Instance from 1995 to 2009, taking into account the increase of the Bar and the number of Judges, changes in the economy and relevant socio-demographic variables. This paper contributes to the empirical literature on litigation by providing evidence about the determinants of litigation in the case of Spain.

A descriptive analysis of the demand of Civil Justice in Spain and its determinants are briefly presented in Section 2. Section 3 describes the empirical model while section 4 shows the econometric results. Finally, concluding remarks and suggestions for policy making are presented in Section 5.

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<sup>2</sup> See among others, Cooter and Ulen (1987), Cooter and Rubinfeld (1989, 1990), Posner (1992), Kessler and Rubinfeld (2004), Shavell (2004) and Polinsky y Shavell (2005).

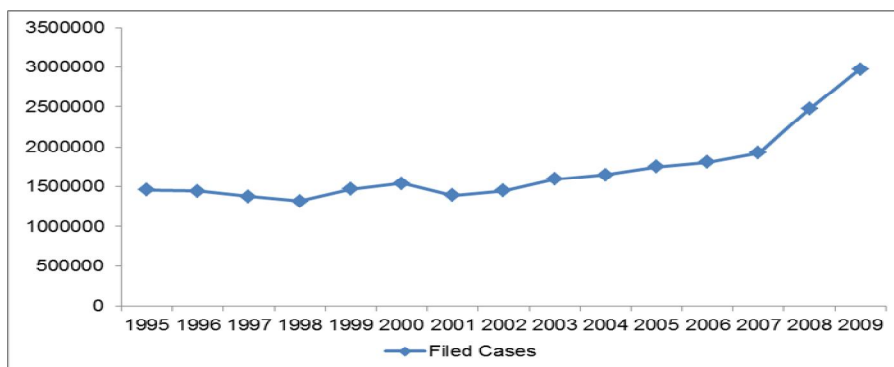
<sup>3</sup> See the seminal articles on the Economics of the Legal Process, Landes (1971), Gould (1973), Posner (1973), Shavell (1982) and Priest and Klein (1984).

<sup>4</sup> For more details see section 2.

## 2. The Demand of Civil Justice in Spain and its determinants

In the last fifteen years the trend of filed cases and the rate of litigation per 1000 population shows some fluctuations due to important changes occurred during this time period. Figure 1 illustrates the growth rate of the filed cases from 1995 to 2009. It is remarkable the positive increase occurred in 1999 and 2000, two years before the enactment of New Civil Procedure Act (NCPA), breaking a declining trend that was observed since 1995. It is also noticeable the negative growth occurred in 2001. The NCPA was published in 2000, but became effective in 2001; then it is plausible to think that in 1999 and 2000, the future change in the law caused uncertainty among agents, stimulating an increase in the litigation rate. As the economic theory of the legal process predicts, an increase in uncertainty creates greater litigation.<sup>5</sup> Another explanation could be that this increase on the filed cases in 1999 and 2000 occurred because some litigants considered the Old Civil Procedure Act more favourable to their interests. The decline in 2001 can be explained by higher costs of litigation in the short term, for example, information costs due to the NCPA reform. After this turning point, the trend is growing, possibly due to the reduction in the expected cost of litigation caused by the NCPA.<sup>6</sup> Since 2007 it is observed an acceleration of the growth rate of the filed cases that could be explained by the bursting of the housing bubble and the economic recession (that would increase the claims for unpaid debts). The filed cases in 1995 were 1,459,627 while in 2009 were 2,971,801, that is, the demand of justice increased by 104% in this time period.

**Figure 1. Spanish Civil Jurisdiction:  
Filed Cases in First Instance Courts. 1995-2009.**



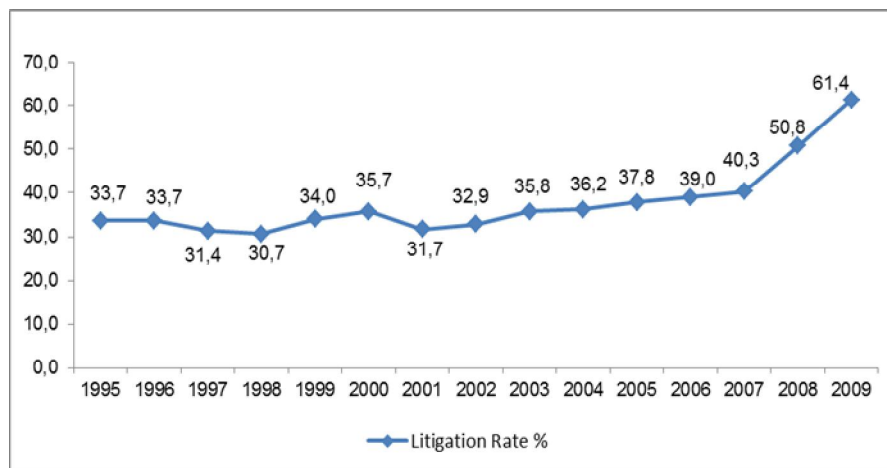
Elaborated from Spanish General Council of the Judiciary Statistics.

<sup>5</sup> See Priest and Klein (1884) and Hanssen (1999).

<sup>6</sup> See section 2.1.

Figure 2 shows that litigation rate presents a similar growing trend from 1995 to 2009 that the filed cases showed on the First Instance Civil Court In Spain.<sup>7</sup> In 1995 were filed, on average, 33.7 cases per 1000 population, while in 2009 were filed on average 61.4 cases per 1000 population, that is, the rate of litigation has almost doubled in the last fifteen years.<sup>8</sup>

**Figure 2. Spanish Civil Jurisdiction:  
Litigation Rate in First Instance Courts. 1995-2009**



Elaborated from Spanish General Council of The Judiciary Statistics

## 2.1. New Civil Procedure Act in Spain

The New Civil Procedure Act (NCPA) was published on January 8, 2000 and became effective one year later. The NCPA had a broad parliamentary consensus. It was coming to replace the 1881 Act and its many amendments since then. The NCPA assumes the social need of a new Civil Justice characterized by the effectiveness, which in this context means (1) full procedural guaranties, (2) quick judicial response through immediacy and shorter procedures, and (3) better rulings. The NCPA is presented as a *“set, of instruments designed to achieve a shortening of the time needed for a final determination of legal cases, in other words, sentences less distant from the beginning of the process, cautionary measures more effective and affordable, execution enforcement less burdensome for those who need to promote it, and more successful in the real satisfaction of their legitimate rights and interests”* (NCPA, paragraph I.2).<sup>9</sup>

<sup>7</sup> Where Litigation rate = (cases filed ÷ population)\* 1000.

<sup>8</sup> For a comprehensive descriptive analysis of litigation in all jurisdictions in Spain see Pastor (2007).

<sup>9</sup> “[u]n conjunto de instrumentos encaminados a lograr un acortamiento del tiempo necesario para una definitiva determinación de lo jurídico en los casos concretos, es decir, sentencias menos alejadas del

The NCPA's introduces major changes compared to the Old Civil Procedure Act.<sup>10</sup> However, the most significant change for our study is the introduction of the "Summary Debt Collection Proceeding" (*Procedimiento Monitorio*), which significantly reduces the costs of litigation, allowing the party who is filing a claim for unpaid debt can do so without the assistance of a lawyer. There is no minimum amount to file the claim. If the defendant agrees and pays, the procedure is finished. If the defendant does not pay nor objects the claim, the procedure ends with an order of enforcement. If the defendant objects, the procedure will continue through an Ordinary Proceeding (*Procedimiento Ordinario*) or through an Oral Civil Proceeding (*Procedimiento Verbal*), depending on the amount of debt.<sup>11</sup> In 2001 the percentage of Debt Collection Proceedings over the total of Civil Cases filed in the judicial system was about 24.8% while in 2009 this percentage raised to 58.10%.<sup>12</sup> Since 2001 the Debt Collection Proceedings filed in the Civil Jurisdiction increased about 612.9%.<sup>13</sup>

The main NCPA's expected aggregated effects are:

- **An increase in the demand for justice.** This result derives mainly from (1) the expectation of an improved judicial performance and resolutions' quality, which implies a reduction on the expected costs of litigation process and (2) the effective cost reduction due the introduction of the Debt Collection Proceeding.
- **An increase in the supply of justice.** One of the NCPA's main objectives is an improvement in justice efficiency and effectiveness, for this reason, we can expect an increase in the number of resolutions and the resolution rate.
- **A lower appeal rate and reversal rate.** Due to a greater proximity of the judge to the case and the improvement in the handling of processes, we can expect a reduction on the likelihood of error in processing and sentencing.
- **A change in output's composition,** in particular, a greater proportion of orders and fewer sentences because many procedures can now be solved with an order.

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*comienzo del proceso, medidas cautelares más asequibles y eficaces, ejecución forzosa menos gravosa para quien necesita promoverla, y con más posibilidades de éxito en la satisfacción real de los derechos e intereses legítimos"* (Exposición de motivos. Ley 1/2000 de Enjuiciamiento Civil, apartado I.2).

<sup>10</sup> See Savurido and Pastor (2004).

<sup>11</sup> The Ordinary Proceeding has two stages, the preliminary hearing and the trial. The Oral Proceeding only involves the trial. When the amount of debt is greater than 6,000 euros the process continues through an Ordinary Proceeding.

<sup>12</sup> See Martin-Pastor (2012).

<sup>13</sup> See Martin-Pastor (2012).

This paper will focus only on the effects of the NCPA on the demand side.<sup>14</sup> While there is an extensive empirical literature on the determinants of the demand for litigation [see, for example, Posner (1997), Hanssen (1999), Clemenz and Gugler (2000) and Buonanno and Galizzi (2009), among others] the literature concerning the effect of procedural reforms on litigation rates is more limited. Ginsburg and Hoetker (2006) found a substantial effect of a procedure law reform implemented in 1998 on the demand for litigation using data for Japanese prefectures for the period 1986-2001. We build upon the previous paper and contribute to the literature by examining the impact of the NCPA for the particular case of Spain. However, we improve upon the previous study by exploiting the available panel data set for Spanish provinces for the period 1995-2009 which includes a considerable time period before and after the implementation of the NCPA, thus allowing a more detailed examination of the effect of the reform and other determinants for litigation over time.

## **2.2. First Instance Civil Courts and Judges**

In Spain, the First Instance Courts (*Juzgados de Primera Instancia*) are the first step in the pyramid of the judicial organization and are single-judge courts. In general terms, Civil Courts deal with private law matters.<sup>15</sup> As Figure 3 shows, in the last fifteen years the rate of first instance civil judges per 100,000 population has increased from 3.6 in 1995 to 4.1 in 2009, due to the increases in the public budget on justice and the agreement signed by the main political parties in Spain for the improvement of the Spanish Judicial System.

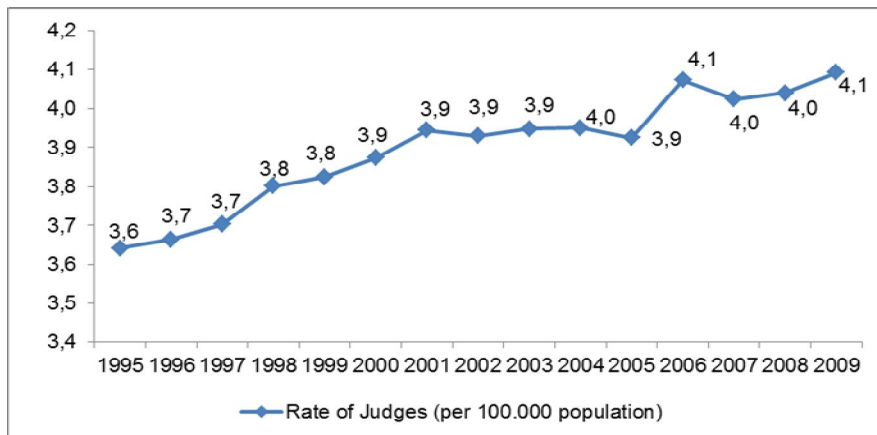
According to Pastor (2003) there is a singular adjustment between the supply and demand of justice in Spain. Pastor argues that both variables are positive correlated, when supply increases, demand increases and vice versa. Empirical results obtained by Hanssen (1999) and Ginsburg and Hoetker (2006) shows that the number of judges is positively correlated to the demand of justice.

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<sup>14</sup> In Rosales (2007) the NCPA's effects on the supply side and resolutions' quality are examined. For a discussion of legal matters, see among others, Lledó Yagüe (2001), Lorca (2001) and De Andres (2006). Also see Savurido and Pastor (2004), Pastor and Robledo (2006).

<sup>15</sup> For more details on the Judicial Organization in Spain see Garoupa *et al* (2012)

**Figure 3. Spanish Civil Jurisdiction:  
Rate of First Instance Civil Judges. 1995-2009**

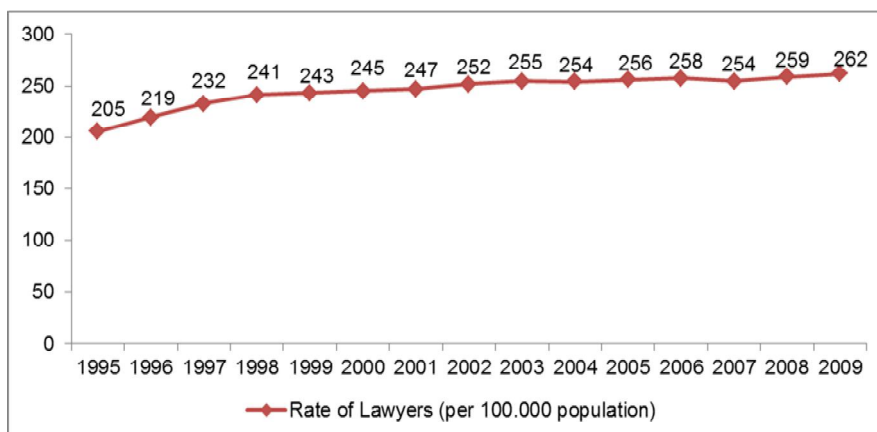


Elaborated from Spanish General Council of The Judiciary Statistics

### 2.3 The Spanish Bar

The role of a lawyer in Spain corresponds exclusively to those who have completed a university degree in Law, are members of the Spanish Bar Association, provide legal advice and practice the defence of parties in all kind of processes.<sup>16</sup> The Rate of Lawyer per 100,000 population has increased about 25% in the last fifteen years, from 205 lawyers per 100,000 population to 262 lawyers per 100,000 population.

**Figure 4. The Spanish Bar: Rate of Lawyers. 1995-2009**



Elaborated from Spanish Bar Association Statistics

<sup>16</sup> Spanish Bar Association (<http://www.cgae.es/porta1CGAE/home.do>)

Economic theory predicts that an increase in the number of lawyers reduces the price of their service. That means a reduction on the costs of filling a lawsuit and then a higher rate of litigation.<sup>17</sup> However, the legal service market is not always a competitive market,<sup>18</sup> therefore, is not that simple to predict what will happen to the rate of litigation before an increase in the supply of legal services,<sup>19</sup> especially in countries where regulations imposed by the Bar Associations are very high. In Spain, the market of legal service is not a competitive market; the legal profession is regulated by the Spanish Bar Association. Lawyers are free to charge fixed fees or fees by hours. The amount of the fees will be freely agreed between client and lawyer, respecting the deontological rules and avoiding disloyal competition. For reference, the Provinces Bar Associations may establish scales guidance to be applied only in accordance with its rules, customs and traditions.<sup>20</sup>

#### **2.4. Socioeconomic and demographic characteristics**

Since 1995 the **Spanish economy** has shown a growing trend in terms of GDP until 2008 when the GDP started to decline. The financial crisis and the bursting of the housing bubble are the main causes of the GDP fall. It is therefore possible that the economic crisis could increase the rate of litigation in the Civil Jurisdiction, due to the increase of claims for unpaid debts. As Clemenz and Gugler (2000) wrote, there are at least two contradictory effects of economic growth on litigation activity. On one hand, an increase in GDP could increase the potential for conflicts, due to the increase in the number of transactions, which implies a positive correlation between GDP and litigation. On the other hand, a decrease in GDP might lead to unpaid debts and bankruptcies, then, one can expect a negative correlation between GDP and litigation. The empirical results suggest that there is a positive correlation between GDP and litigation activity in the long run, but in the short run, the correlation between those variables is negative. Figure 5 shows the GDP per capita from 1995 to 2009.

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<sup>17</sup> See Posner (1997).

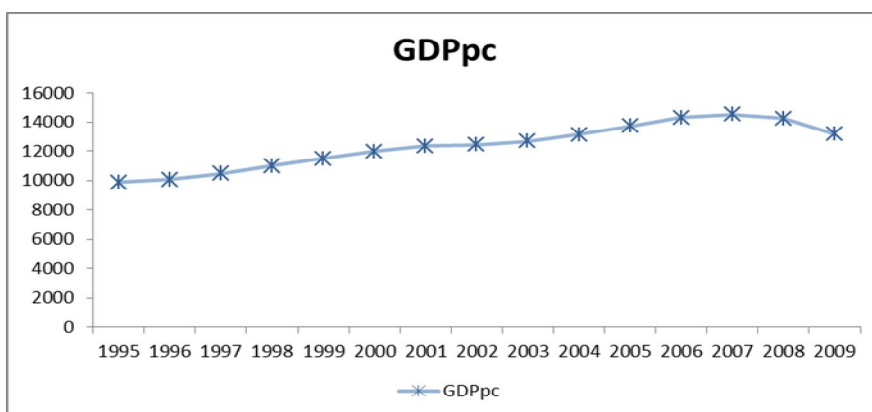
<sup>18</sup> For more details on the legal service markets see Hadfield (2000).

<sup>19</sup> Ginsburg and Hoetker (2006) and Buonanno and Galizzi (2011) find the number of lawyers does exert a positive and statistically significant effect on the litigation rate. Posner (1997) and Clemenz and Gugler (2000) find a positive but no statistically significant effect, while Hanssen (1999) finds a negative and statistically significant effect on the demand of justice.

<sup>20</sup> Spanish Bar Association (<http://www.cgae.es/portalCGAE/home.do>)



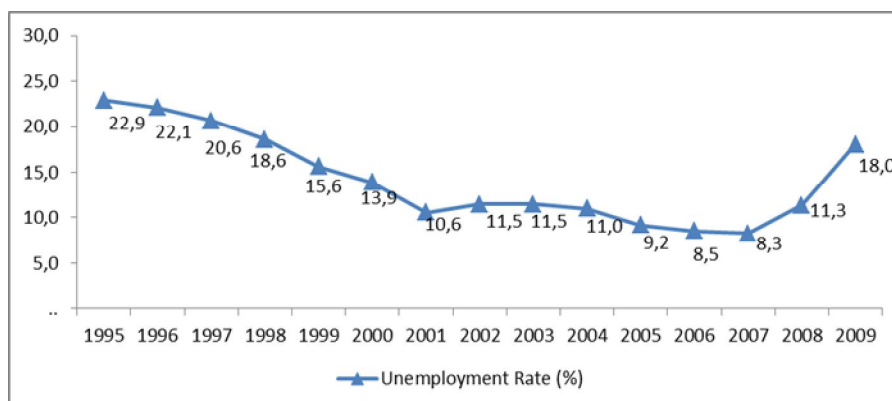
**Figure 5. Spanish Gross Domestic Product per capita. 1995-2009.**



Elaborated from Spanish National Statistics Institute

According to the fluctuations in the Spanish economy, **the unemployment rate** has shown a decreasing trend from 1995 to 2001 and from 2003 to 2007. Since 2007 the unemployment rate has been growing due to the economic crisis. Higher rates of unemployment could induce a higher rate of litigation in labour courts, but also in civil courts, due the lower costs of litigation (no monetary but the opportunity cost in terms of time dedicated to go to trial).

**Figure 6. Spanish Labor Market: Unemployment Rate. 1995-2009**

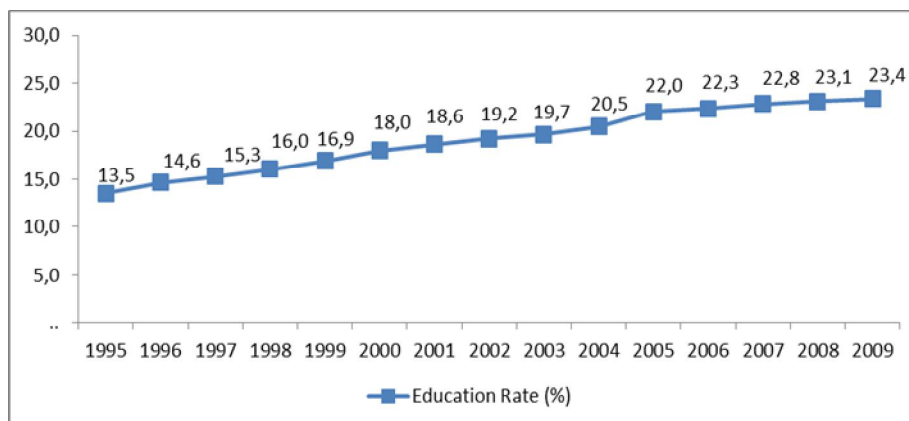


Elaborated from Spanish National Statistics Institute

**The percentage of population who has completed a university education** has been growing in the last fifteen years. An increase in this variable could cause a higher rate of litigation, because educated people are more likely to know their legal rights. However, educated people may also be more willing to reach agreements out of the courts, or to settle their disputes rather than go to trial, so the expected effect on the

rate of litigation is not very clear. However, some recent studies find the level of education negatively correlated to the demand of justice.<sup>21</sup>

**Figure 7. Spanish Education Rate:  
Percentage of Population with University Degree. 1995-2009**



Elaborated from Spanish National Statistics Institute

**Population density** in Spain varies greatly among provinces. Table 1 shows the number of people per square km who lived in the 50 Spanish provinces during the years 1995-2008 (average) and 2009. The table is sorted by the first column. As shown, the three provinces with the highest population density are Madrid, Barcelona and Bizcaia. The three provinces with the lowest population density are Soria, Teruel and Cuenca. It is expected that the higher population density, the higher the interaction between inhabitants, and therefore the higher rate of litigation.

**Table 1. Population Density in Spanish Provinces. People per Km<sup>2</sup>**

Provincia	Average 1995-2008	2009
Madrid	703	785
Barcelona	648	690
Bizcaia	513	512
Guipúzcoa	344	349
Alacant	274	326
Santa Cruz de Tenerife	259	299
Las Palmas	230	265
Valencia	215	234
Pontevedra	205	210
Málaga	187	215
Balears (Illes)	181	215
Cádiz	155	164
Coruña	140	141
Sevilla	125	132
Murcia	112	128
Tarragona	107	127
Girona	105	123
Cantabria	104	109
Asturias	101	100
Araba	96	101
Castelló	78	90
Granada	68	72

<sup>21</sup> Posner (1997) and Buonanno and Galizzi (2011).

Almería	66	77
Valladolid	63	65
Rioja	57	63
Córdoba	56	57
Navarra	55	59
Zaragoza	52	55
Jaén	48	49
Huelva	47	50
Ourense	46	45
Toledo	38	43
Lugo	37	35
Lleida	32	35
León	32	31
Badajoz	31	31
Salamanca	28	28
Burgos	25	26
Ciudad Real	25	26
Albacete	25	27
Segovia	22	23
Palencia	22	21
Ávila	21	21
Cáceres	20	20
Zamora	19	18
Guadalajara	16	20
Huesca	14	14
Cuenca	12	13
Teruel	10	10
Soria	9	9

Elaborated from The National Institute of Statistics. (\*) Rank of Provinces, from highest to lowest, based on the Average Population Density in Spanish Provinces.

### 3. Empirical Analysis

The main purpose of this section is to determine the effect of the New Procedure Act (NCPA) on the demand of justice in Spain. The assumption is that the enactment of the NCPA has reduced the expected and effective cost of filling a suit and has increased the rate of litigation. Therefore, we test the hypothesis that the NCPA has raised the demand for justice in Spain.

To test the above hypothesis we use a panel data set of 50 Spanish provinces from 1995 to 2009. Given their special status, Ceuta and Melilla are excluded from the analysis. The time frame considered is determined by the availability of data for the key variables in the analysis. However, our data covers a sufficient time period before and after the implementation of the NCPA to test the hypothesis that the NCPA has been accompanied by an increase in provincial litigation rates. The data is taken from the Statistics of the General Council of the Judiciary and the Spanish National Statistical Institute.

The litigation rate, the dependent variable, measures the number of first instance, and first instance and instruction courts cases registered by courts expressed as a rate per

1000 population. Family cases have been excluded from the analysis due to the law passed in 2005 intended to speed up divorce processes (“Express Divorce Law”) which substantially shortened court procedures leading to divorces by among other things eliminating the need of previous matrimonial separation. This implies a lower number of court procedures per divorce, and therefore a lower litigation rate, although it could also have encouraged couples to get divorced, due to the low administrative and time costs involved in the process.

Control variables include the number of lawyers and the number of judges per 100000 population. We also include a vector of socioeconomic variables likely to influence the litigation rates: GDP per capita, education, the unemployment level and population density. In a more restricted specification we also include the concentration index defined as the ratio between the population living in the provincial administrative city over the total population in the province<sup>22</sup> (Buonanno and Galizzi, 2011). Following Ginsburg and Hoetker (2006) we also include annual change in per capita provincial income to explore how the economic recession has affected litigation rates in the Spanish case (Ginsburg and Hoetker, 2006). To capture the effect of the 2001 civil procedure reforms we include both a dummy equal to one during the years in which the reform took effect (year 2001 and later) and an indicator of the number of years since the reform has been in effect. While the former variable captures the change in the intercept in the evolution of litigation rates over time, the latter measures the change in slope in the same relationship. Finally, a set of fixed effects at the provincial level is included to control for provincial heterogeneity, that is, to account for the effect of unobserved factors that remain constant over time. The resulting model is as follows:

$$LIT_{it} = \alpha_0 + \alpha_1 LAWYERS_{it} + \alpha_2 JUDGES_{it} + \alpha_3 GDP_{it} + \alpha_4 \Delta GDP_{it} + \alpha_4 UNEMPL_{it} + \alpha_6 EDUC_{it} + \alpha_7 POP\_DENS_{it} + \alpha_8 POST\_REF + \alpha_9 YEARS\_REF + v_i + \varepsilon_{it}$$

where:

*LIT*: rate of first instance, and first instance and instruction courts cases registered by courts per 1000 population.

*LAWYERS*: number of lawyers per 100000 population

*JUDGES*: number of judges per 100000 population

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<sup>22</sup> The concentration index is only available for year 1996 and 1998-2009 and for only 49 of the 50 provinces.

*GDP*: provincial income per capita

$\Delta GDP$ : annual change in per capita provincial income

*UNEMPL*: unemployment level

*EDUC*: education level

*POP\_DENS*: population density per squared kilometre

*POST\_REF*: post procedural reform dummy (year 2001 and later)

*YEARS\_REF*: number of years since the procedural reform has been in effect (2001 = 1, 2002 = 2, and so on)

*i*: 1,...,50 (provinces)

*t*: 1,...,17 (1995-2009)

$\nu_i$  : provincial specific effects

$\varepsilon_{it}$  : disturbance term

Given that inferences are made with respect to the sample, the fixed effects version of the panel data estimator is the most convenient. Alternatively, the random effects model may be able to capture level of variability in litigation rates across the Spanish provinces. We have therefore conducted the Breusch Pagan test for the adequacy of the random effects estimator and the Hausman test for the correlation between the regressors and the unobserved factors<sup>23</sup> (Wooldridge, 2002).

Table 1 in the Appendix reports descriptive statistics of the variables used in the estimations, while Table 2 in the Appendix provides a correlation matrix among the dependent and all the explanatory variables. The correlation between the litigation rate and both variables capturing the effect of the reform is strongly positive.

#### **4. Econometric results**

According to the results, the random effects model is a better specification to a pooled OLS model (Breusch-Pagan Lagrange multiplier p value = 0.00). However, the Hausman test assumption that there is no correlation between the regressors and the error term cannot be accepted at any conventional significance level (Hausman test p

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<sup>23</sup> Under the null hypothesis that regressors are uncorrelated with the error term, the random effects provides more efficient estimates than the fixed effect model.

value = 0.00), and therefore, the random effects estimator is likely to yield inconsistent estimates.

Accordingly, our estimations have been based on the fixed effects estimator. Provincial dummies turn out to be statistically significant and are included throughout the analysis (p values for F tests of zero coefficient parameters show a rejection of the null hypothesis at any conventional significance level). Given that the assumptions of homoscedasticity in the error variances, no first order autocorrelation and cross sectional independence, are rejected at conventional statistical levels (p values of the modified Wald test for groupwise heteroscedasticity, Breusch Pagan test for autocorrelation, and Pesaran test for cross sectional independence equal to zero), we have provided results based on Panel Corrected Standard Errors (PCSE) that can correct for all three problems. As a robustness check, we also provide estimations based on Newey-West standard errors in the second column of Table 1. The results of this model are very similar both in the magnitude of the coefficients and in the statistical significance of estimates.

**Table 1: Estimation results 1**

	PCSE		Newey-West	
	Coef.	t stat	Coef.	z stat
<b>Unempl</b>	0.140	4.4	0.154	6.2
<b>Lawyers</b>	-0.019	-0.3	-0.026	-0.5
<b>Judges</b>	0.192	1.4	0.175	1.8
<b>Education</b>	0.079	1.2	0.065	1.2
<b>GDPpc</b>	1.184	7.3	1.291	10.3
<b>ΔGDPpc</b>	-1.337	-6.6	-1.507	-9.1
<b>Dens_pob</b>	0.641	4.3	0.679	5.9
<b>Years_ref</b>	0.044	8.6	0.045	10.8
<b>Post_ref</b>	0.050	2.4	0.015	1.0
<b>N</b>	657			

Regression results are reported in Table 1. According to the results, the model is a good fit to the data with variables showing the expected signs. In addition, the Ramsey Reset test computed on the estimated residuals of the econometric models suggests no evidence of functional form misspecification (p-values > 0.05).

Turning to the meaning of the key parameter estimates, the findings show a positive and statistically significant between the number of years that the procedural reform has been in effect and the litigation rates. Specifically, the results show that the litigation rates have been growing approximately 5 per cent each year. The post procedure law

reform also shows positive values, however, the effect seems to be less strong. Overall, these results suggest that the NCPA has had a relatively gradual but important effect on the litigation rate across Spanish provinces.

With respect to the other determinants of litigation, our results show a positive and considerable effect of income on litigation rates. In particular, it is estimated that a 1 per cent increase in income leads to an increase in litigation rates of roughly the same magnitude. However, and in line with previous literature (for example, Ginsburg and Hoetker, 2006), we find that annual change in income also influences litigations. In particular, our results suggest that economic recessions tend to increase litigations possibly due to the higher number of disputes and broken contracts associated to it. On the other hand, a 1 per cent increase in population density stimulates approximately a 0.6 per cent increase in litigation rates. Finally, the results point towards a positive, although relatively lower, effect of unemployment on litigation. Specifically, the results show a 0.1 per cent increase in litigation associated to a 1 per cent increase in the unemployment level.

**Table 2: Estimation results 2**

	PCSE		Newey-West	
	Coef.	t stat	Coef.	z stat
	0.154	4.9	0.155	5.7
<b>Unempl</b>	0.008	0.1	0.005	0.1
<b>Lawyers</b>	0.139	1.0	0.136	1.1
<b>Judges</b>	0.040	0.6	0.045	0.7
<b>Education</b>	1.155	6.7	1.170	8.3
<b>GDPpc</b>	0.852	4.3	0.866	5.3
<b>ΔGDPpc</b>	-1.324	-6.3	-1.325	-7.0
<b>Conc Ind</b>	0.218	1.7	0.232	2.0
<b>Years_ref</b>	0.045	8.3	0.045	9.7
<b>Post_ref</b>	0.034	1.7	0.028	1.7
<b>N</b>		595		

The results of the restricted specification using the concentration index as an additional measure of urbanization in Table 2 above corroborate the previous key finding regarding the procedural reform. In addition, according to this specification, education seems to be one of the main determinants of litigation together with income and income growth. Finally, on the basis of these results the more the population of the province concentrates on the provincial administrative city the higher the litigation rate.

## **5. Concluding Remarks**

The main objective of this study was to analyze the effects of the New Civil Procedure Act (NCPA) passed in 2001 with a particular focus on whether this reform has stimulated the demand of justice in Spain. For that reason, we propose an empirical analysis based on a panel data of the Spanish provinces over the period 1995-2009, therefore covering a sufficient number of years both before and after the implementation of the new law. Since the NCPA's main objectives are to increase the effectiveness and quality of justice, it is plausible to expect an increase in the demand of justice in the civil jurisdiction following the reform, assuming that the increase in the demand of justice occurs because after the enactment of NCPA, potential litigants would perceive a more effective justice, which implies a decrease in the costs of litigation and an increase in the value of the trial.

The results of our panel data analysis show that the litigation rates have been growing approximately 5 per cent each year. The post procedure law reform has also positive values, however, the effect seems to be less strong. Overall, these results suggest that the NCPA has had a relatively gradual but important effect on the litigation rate across Spanish provinces. With respect to the other determinants of litigation, our results show a positive effect of income, unemployment, education and several measures of urbanization on litigation rates.

The NCPA was enacted without an analysis on its possible effects. The NCPA not even had an Economic Report with a cost-efficiency analysis. More important, the NCPA would affect the incentive's structure for all judicial operators and this would affect the decisions of going to court or not, agree or go to trial (by increasing litigation's rate), to invest in more or less litigation, to appeal or not, and so on. Judicial policy makers did not consider the effects on the demand of justice that could continue creating problems such as congestion and delay in the system. They did not account the basic prediction of economic theory of the legal process: a lower cost of litigation creates a greater incentive to litigate. One lesson from this experience is the importance of carrying out economic analysis to avoid losses caused by effects not intended or wanted.



## Appendix

### Table 1: Descriptive statistics

Variable		Mean	Std. Dev.	Min	Max	Observations
<b>Litigation rate</b>	overall	21.19	9.43	7.04	61.00	N = 750
	between		3.85	10.80	29.46	n = 50
	within		8.62	7.28	58.71	T = 15
<b>Unemployment rate</b>	between	13.7	6.9	3	42.2	N = 750
	within		4.8	6.7	27.4	n = 50
	within		5.0	1.2	29.1	T = 15
<b>Lawyers</b>	overall	245.5	95.4	65.7	767.3	N = 750
	between		93.8	101.7	738.4	n = 50
	within		21.3	102.9	323.7	T = 15
<b>Judges</b>	overall	4.2	0.8	2.4	6.5	N = 750
	between		0.7	2.7	5.7	n = 50
	within		0.3	3.2	5.4	T = 15
<b>Education</b>	overall	17.3	5.4	7.2	37.9	N = 750
	between		4.4	10.2	29.1	n = 50
	within		3.2	8.6	27.5	T = 15
<b>GDPpc</b>	overall	11552.8	2737.3	5789.4	20386.4	N = 707
	between		2352.4	8157.5	17011.4	n = 50
	Within		1430.7	7554.1	15202.6	T = 14.14
<b>ΔGDPpc</b>	Overall	288.1	319.0	-936.6	1148.3	N = 657
	between		85.4	84.3	557.0	n = 50
	Within		307.6	-865.7	1070.8	T = 13.14
<b>Population density</b>	Overall	116.1	149.1	8.8	784.8	N = 750
	between		150.0	8.9	693.2	n = 50
	Within		12.7	51.6	207.6	T = 15
<b>Concentration index</b>	Overall	0.6	0.6	0.1	3.4	N = 637
	between		0.6	0.1	3.3	n = 49
	Within		0.0	0.4	0.8	T = 13

### Table 2: Correlation matrix \*

	Litigation rate	Unempl	Lawyers	Judges	Educ	GDPpc	ΔGDPpc	Pop dens	Conc Index	Post reform	Years reform
<b>Litigation rate</b>	1.00										
<b>Unempl</b>	-0.30	1.00									
<b>Lawyers</b>	0.31	-0.05	1.00								
<b>Judges</b>	0.21	-0.15	-0.31	1.00							
<b>Education</b>	0.43	-0.40	0.48	-0.35	1.00						
<b>GDPpc</b>	0.41	-0.67	0.37	-0.13	0.77	1.00					
<b>ΔGDPpc</b>	-0.33	-0.05	0.05	-0.10	0.04	0.06	1.00				
<b>Pop dens</b>	0.20	-0.01	0.73	-0.29	0.45	0.40	0.05	1.00			
<b>Conc Index</b>	0.06	-0.13	0.24	-0.43	0.46	0.38	0.12	0.02	1.00		
<b>Post reform</b>	0.62	-0.51	0.09	0.14	0.38	0.37	-0.16	0.03	-0.01	1.00	
<b>Years reform</b>	0.78	-0.41	0.10	0.13	0.45	0.42	-0.33	0.05	-0.01	0.75	1.00

\*Note: all variables in logs

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