LITIGATION IN SPAIN 2001-2010: EXPLORING THE MARKET FOR LEGAL SERVICES

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Abstract

There is empirical evidence of a cross-country positive association between the number of lawyers per capita and the extent of litigation. For instance, Spain has more litigation and more lawyers per capita than most OECD countries. How should this association be interpreted? In this paper we analyse the variation in both variables across Spanish provinces during the period 2001-2010, by means of an instrumental variable approach, to shed some light on the sources of the statistical association between them. Finally, implications of the results are discussed.

Resumen

Existe evidencia empírica de que se da una asociación positiva entre el número de abogados por habitante y el número de litigios entre países. Por ejemplo, España cuenta con más litigios y más abogados por habitante que la mayoría de los países de la OCDE. ¿Cómo interpretar esta asociación? En este trabajo se analiza la variación de ambas variables en las provincias españolas durante el período 2001-2010 y, por medio de un enfoque econométrico de variables instrumentales, se ilustran algunas de las causas de la asociación estadística entre ellas y se comentan ciertas implicaciones de los resultados.

Palabras clave: abogados, litigiosidad, juzgados de lo civil, variables instrumentales.

Códigos JEL: K41, K42, J44, L84.

1   Introduction

There is some empirical evidence of a cross-country positive association between the number of lawyers per capita and the extent of litigation.[1] There are good theoretical reasons to support such observation (Garoupa, 2008). With more lawyers, the market for legal services is presumably more competitive, which should lead to an expansion of supply, a decrease in prices and consequently more lawsuits.[2] Another possible reason is that legal services are credence goods (Dulleck and Kerschbamer, 2006) and it is expected that lawyers will use their information advantage to boost their business; more lawyers in the market should reduce information asymmetries (since potential clients can more easily compare performance) and therefore decrease uncertainty which, in turn, enhances willingness to litigate. A third reason is caused by the regulatory setup. Certain forms of compensation are usually not allowed (for example, contingency fees are strictly prohibited in many jurisdictions;[3] champerty and maintenance doctrines in common law limit the possibility of a lawyer buying a claim from his/her client). In order to comply with such limitations, lawyers might need to diversify their portfolio of cases or work with more clients to achieve significant revenues in legal fees [see, among others, Baumann and Friehe (2012) and references therein]. A market with more lawyers is likely to add to these distortions. Finally, the likely concentration and nature of the corporate (fundamentally transactional) market might induce many lawyers to operate in the personal market which is more prone to litigation (Hadfield, 2000).

Notwithstanding the theory, How should this empirical association be interpreted? Establishing a casual relationship between the number of lawyers and litigation is problematic. Not surprisingly, empirical studies trying to do so are scarce and struggle with finding appropiate identifying strategies and provide not very robust results. We could cite, for example, Posner (1997) on the U.S. and England, Hansenn (1999) on the U.S., Clemenz and Gugler (2000) on Austria, Ginsburg and Hoetker (2006) on Japan or Carmignani and Giacomelli (2010) and Buonanno and Galizzi (2012) on Italy.

In this paper we try to shed some light of the sources of the statistical association between the number of lawyers and litigation in Spain, across all (fifty) provinces for the period 2001-2010 by making use of instrumental variables. Spain is an interesting case to consider. To start with, among the countries for which the OECD Civil Justice project obtained information (Palumbo *et al.* 2013), Spain is the country with the third highest per capita litigation rate (after Russia and the Czech Republic and followed by Greece and Italy).[4] The litigation rate was measured as the ratio of the number of new civil cases filed in a given year in relation to the population. Furthermore, Spain is the country

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[1] There is a vast literature on possible determinants of litigation, including awards and procedural rules (the so-called economics of litigation). Our analysis focuses on lawyers.

[2] This is a standard application of demand theory.

[3] Following Palumbo *et al.* (2013), contingency fees are allowed by law in only 37% of the 35 legal systems (in 31 countries) covered by the OECD Civil Justice Project. According to the report, Spain is one of the countries that do not allow such contingency fees by law.

[4] These countries (or legal systems) were Australia, Austria, Belgium, the Czech Republic, Denmark, England and Wales (UK), Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Israel, Italy, Japan, Korea, Luxemburg, Mexico, the Netherlands, New Zealand, Northern Ireland (UK), Norway, Poland, Portugal, Russia, Scotland (UK), the Slovak Republic, Slovenia, South Africa, Spain, Sweden, Switzerland, and Turkey.

(after Russia, the Czech Republic and Greece and followed by Italy) with the fourth highest litigation rate when measuring litigation as the number of new civil cases filed in a given year relative to GDP (measured in current PPP U.S. dollars). See Figure 1 below.

Furthermore, Spain also suffers from a relatively significant slowness of its judicial procedures: Spain holds the position 26 (out of a total of 35 legal systems) in its agility to resolve disputes before the first instance courts according to the recent OECD results (Palumbo *et al.* 2013). Even less favorable results can be found on the Doing Business (DB) Project of the World Bank in its "enforcing contracts" indicator. Spain ranked 52 among 189 countries covered in the report of 2014. These latter results show a significant lack of consistency with the level of development of the Spanish economy.

At the same time, Spain presents one of the highest number of lawyers measured in per capita terms.[5] In fact, we observe a high level of competition among lawyers in Spain, which at the eyes of some commentators could explain general low fees (Ciarreta Antuñano *et al.*, 2009).

In our view, Spain is also an interesting case of study in terms of recent reforms. On the one hand, the Spanish Congress passed the "Law on Access to the Professions of Barrister and Solicitor of the Courts" in 2006.[6] This law, which came into force five years later (in November 2011), introduced a number of additional requirements for those aiming to practice lawyering. The new candidates must pass a graduate (or master) degree in law, have a mandatory work experience (a period of two years without a formal salary) and pass a national bar exam evaluating their qualifications. This reform limited, at least in theory, the access to the legal profession (before, it was only necessary to hold a university degree in law and no bar exam existed). The reform was based, according to the preamble of the law, on the following goals: to achieve a higher quality of legal service, to comply with the comparative experience of other countries which introduced such restrictions and the need to standardize the formal requirements in Spain with those of other European countries. Interestingly there is no reference whatsoever to the Spanish high litigation rates as a reason for reform.[7]

At the same time, the legal market has been affected indirectly by the passing of the so-called "Omnibus Law" of 2009.[8] The law relaxed some restrictions in the following areas: advertising of professional services and simultaneous exercise of two or more professions. It also reduced the power of professional associations to establish indicative fee scales. This last, relatively minor, change may be complemented by in-depth global reform of all professional services under a new "Professional Services Act" that could be adopted in 2015 (at least as a "draft law").

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[5] With the cautions that are always required when comparing data of different countries, according to the CEPEJ (see report of the CGAE, 2013), Spain holds the seventh position (out of 27 countries) in the number of lawyers per capita in the European Union (above France, which holds position 20 and Germany which holds position 10).

[6] Law 34/2006 of October 30th.

[7] The reform seems to be widely supported by the Spanish population, while according to the CGAE (2012) 85% of Spaniards demand that additional training is required to become a lawyer. This result contrasts with the apparent satisfaction of Spanish citizens with the lawyers according to the same source. That level of satisfaction has received a high mark (6.9).

[8] Law 25/2009 of December 22nd, on the adaptation of various statutes to the Law on Free Access to Service Activities.

Summing-up, international comparisons show that Spain has more litigation and more lawyers per capita than most OECD countries. Our article studies the extent to which these observations are related.

In order to do so, we construct a new dataset. Thus, in our study we focus on a topic and on a period of important reforms for which our empirical results based on our original dataset may have policy implications (although we are not testing the consequences of these reforms on the legal profession, but rather analyzing the period before these reforms took place).

The correlation between the number of lawyers per capita and litigation is high (0.6806) and has the expected sign in the relevant period, 2001-2010. However, given the probable endogeneity problems, correlations are interesting but do not provide for much inference. Consequently, we develop adequate econometric techniques to address this issue and show more accurate relationships between the number of lawyers per capita and litigation. Essentially, we use two instrumental variables: the number of law schools founded in Spain by 1968 and the distance between the current provincial capitals to the historical capital of their university district (where it was possible to study law) in 1845. Estimations using both OLS and instrumenting the relevant independent variable (lawyers per capita) are provided in this article.

The paper is structured as follows. Section 2 summarizes the institutional environment and presents the database. Section 3 explains the empirical strategy. Section 4 presents the results. Section 5 concludes with a discussion of the empirical results.

2 Institutional Environment

2.1 Measuring the number of lawyers and litigation in Spain

Lawyers should join a bar association in order to practice in Spain. Thanks to the records of each bar association we have reconstructed the number of lawyers practicing Law in each geographical location and every year. According to the results, there are more than 160,000 lawyers in Spain. Before 2011, they all went to law school for four or five years at the end of which they registered with the provincial[9] bar association (*Colegio de Abogados*) and could start practicing law.[10] Most, of course, went through some training period before starting a career in law practice (there are around 122,000 practicing lawyers in Spain at the end of our period of analysis). Others might have opted for a job outside of the legal profession strictly speaking, such as in-house councilor (about 40,000 non-practicing lawyers are estimated to exist in Spain). Figure 2 shows the average (2001-2009) number of lawyers (*1000) per capita in Spain by province.

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[9]Some provinces in Spain have more than one bar association. For instance, in the province of Asturias there are two bars, one in Oviedo (the capital of the province) and one in Gijón (the bigger city in the province). Sub-provincial data have been adequately merged in our analysis.

[10]Under the so-called Bologna higher education reforms, the undergraduate degree has been reduced to four years in all cases (now called *grado en derecho*). However, in order to be a member of the bar, after 2011, a candidate needs both the undergraduate degree and the master degree as mentioned in the introduction.

There is a federal bar (*Consejo General de la Abogacía Española*, CGAE) located in Madrid; however, the structure is quite decentralized and the provincial bar associations (Colegios de Abogados) exercise most of the actual regulatory and enforcement powers.

As for the measurement of the volume of cases computed to measure litigation, we focus on the civil conflicts (i.e., those of private nature between companies and/or citizens). That is, we leave aside other types of conflicts (of an administrative, criminal or purely labor nature). There are several reasons for this choice: first, it is appropriate that we focus on homogeneous or equivalent cases. In this sense, it would not be correct to aggregate conflicts over contracts between private companies with conflicts between citizens and the public administration (or with disagreements over labor law[11] such as wrongful dismissals). Each type of conflict relies on a different procedural law in Spain. Secondly, across all jurisdictions, it seems correct to focus on civil litigation as it is, with great lead, the largest in terms of number of conflicts resolved by courts of law and is most relevant for the everyday business life of companies. Third, civil law and its specific procedural laws are supplementary of all other relevant legislation in Spain. Fourth, the literature on the economics of justice focuses its analysis on civil/private conflicts (see Palumbo *et al.*, 2013 for a summary). Getting results for the civil jurisdiction guarantees certain comparability with previous results in the literature. Finally, we separate civil conflicts from others (particularly labor conflicts) because we can do that with our database: in Spain, civil and labor conflicts are resolved by different jurisdictions (served by different judges) in contrast with the judicial structure of other countries such as Italy.

Broadly, for all disputes arising under private law, the procedures are regulated by the "Civil Procedural Law" (CPL). It establishes the rules of access to the court system, the formalisms the parties must comply with, the role of the judge or court, the rules governing evidence, the appeal to superior instances and any other related issues. The old "Civil Procedural Law" dated from 1881 (Civil Procedural Law, Royal Decree of February, 3, 1881, CPL 1881) governed the procedures until 2001. The new law (Ley 1/2000, de 7 de enero, CPL 2000) was passed in 2000 and has been in force since January 8, 2001.[12]

Using these civil data, we construct a measure of litigation. The "litigious cases" measure is calculated as a proxy of the cases to be resolved by the courts in a specific moment of time, that is the sum of the new private civil cases (conflicts) arriving to the court plus the pending cases which still are waiting to be solved by the specific judge in a certain moment of time (backlogs).

When constructing the measure, we consider the period 2001-2010 which is limited by two important changes, the reforms of civil procedures in 2000 and the already mentioned reforms in the access to the legal profession in 2011.[13] The reason why we begin our analysis in 2001 is because the old and new procedures have substantial differences and should not be treated together in the same econometric analysis (Mora-Sanguinetti, 2010). All measures are defined at the

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[11] Technically labor law is not private law, but merges elements of private and public law. Labor law is litigated in specialized courts subject to different procedural rules.

[12] The general thrust of the reform of 2000 was to simplify civil procedures and facilitate litigation; therefore presumably reducing delays and congestion rates. Some evidence suggests that such results were not achieved, precisely because a larger number of cases were drawn to the courts in the period after the reform (Palumbo et al. 2013).

[13] As it was mentioned in the introduction, in 2006, a law introduced a new form of access to the legal profession which became effective in November 2011 (after a five year moratorium).

provincial level. Formally there are no variations across provinces concerning civil procedures (as the CPL applies in all provinces alike). However, demand conditions clearly vary, so the models will control for them.

2.2 Demand side controls

With respect to controls, the models include the following: GDP growth, income per capita (GDP per capita), number of associations per capita (which also captures social "complexity" that might influence local litigation), the number of enterprises per capita (for the same reason), unemployment rate (unemployment rate), dummy of the province in which the High Court of Justice (TSJ) is located (chief province) (which does not always correspond to the capital of the region due to historical reasons)[14] and non-performing loans ratio (NPL ratio) (reflecting the proportion of defaulted credit contracts, which may be relevant when it comes to capture litigation related to the business cycle). Table 1 includes a description of the variables used in the analysis.

The variables GDP growth, income per capita, unemployment rate and NPL ratio control for the economic context. The empirical literature suggests that, under some assumptions, litigation increases in economic booming (Ginsburg and Hoetker, 2006) while other papers have found that litigation fosters during an economic recession (Palumbo *et al.*, 2013). Part of the explanation for the ambiguous results is that the type of litigation is likely to respond to economic cycles. Since we are aggregating civil litigation, there is no prior expectation concerning the signs of the coefficients associated with the economic variables. In the period considered, 2001-2010, we have two clear stages of the Spanish business cycle: an economic booming up to 2008 and an economic downturn since then to the end of the period considered.

We include the number of associations and number of enterprises, both in per capita terms, to account for differences across potential sources for litigation. Environments with more social "complexity" are expected to induce more litigation.

The dummy of the province in which the TSJ is located controls for legal infrastructure that makes public dispute resolution mechanisms more readily available. Therefore, they may pose a positive effect on litigation.

The correlation between the various controls (see Table 2) is generally low so there should be no concern with possible problems of multicollinearity.

3 Empirical strategy

3.1 The model

We have adjusted a panel data model, where the dependent variable is a measure of litigation (volume of "litigious cases"). The independent variable of interest is the number of lawyers per capita. The number of lawyers per capita may be endogenous and is thus instrumented (see section 3.2 below). Demand side conditions are taken into consideration in the model by the inclusion group of controls presented in the previous section. The model includes time dummies and regional fixed effects to partially control for unobserved heterogeneity.

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[14] As for example in the case of Andalusia, the Supreme Court is based in Granada, not in Seville.

Errors are clustered to make them robust to heteroskedasticity and serial correlation (Angrist and Pischke, 2009, Wooldridge, 2010).

The panel data model follows:

$$Log(litigious\_cases)_{it} = \sum_{t=1}^{T-1} c_t T_t + \beta Log(lawyers\_per\_capita)_{it} + \sum_{k=1}^{K} Controls_i^k$$

$$+ \sum_{k=1}^{K} \overline{Controls}_t^k + \eta_r + \nu_{it}$$

Where $i = 1...50$ is the province, $t = 2001...2010$ is the year and $r = 1...17$ is the region.

The chosen measure of litigation and the number of lawyers per capita enter the specification in logarithms. This helps us to achieve normal distributions on both sides of the equations. The results are robust to taking logarithms or not.

As it will be explained below, the use of time-invariant instruments poses difficulties to the correct estimation of the model. Due to the use of those instruments, we cannot include provincial fixed effects and we have to accept the less optimal option of including region (multi-province) fixed effects (η_r) to control for unobserved heterogeneity. As a way to control for provincial unobserved heterogeneity, we follow Wooldridge (2010) and include as controls the average of each control as well (which has provincial variation)($\sum_{k=1}^{K} \overline{Controls}_t^k$).

For the purposes of the analysis herein, we have to aggregate the data at the provincial level, although more disaggregated data could potentially be available. There are several reasons to do so. First, the provincial bars (*Colegios de Abogados*) in Spain usually cover a whole province (although there are few exceptions as explained above). Second, we lack more disaggregated data on other important variables such as income per capita (e.g. there is no disaggregated data for the GDP of the city of Barcelona and the city of Sabadell, both part of the province of Barcelona, but we have the GDP for the Barcelona province as a whole). In terms of the analysis, this has the drawback of losing the "sub-provincial" determinants in the decisions taken by individual litigants.

In terms of the econometric validity of the experiment, it is necessary to clarify whether the Spanish provinces as such generate barriers to the activity of lawyers. If there were no barriers of any kind, i.e., if the Spanish legal professionals work with cases or clients all over Spain (with no preference for those geographically closer)[15] the validity of the results would be partially compromised. This is not the case in Spain. The legal services market is partially fragmented due to the dominant presence of very small firms.[16] These small legal advisors and professional services companies serve primarily in their own province.[17] Figure 3 shows the distribution of firms in the legal services sec-

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[15] What is to say that we would be able to observe, therefore, that clients of any city seek legal advice within and outside their province of residence.

[16] Which in fact reflects the corporate structure of the Spanish economy more generally. See, among others, García-Posada and Mora-Sanguinetti (2014) and references therein.

[17] We should note the exception represented by the large Spanish law firms (Garrigues, Cuatrecasas - Gonçalves Pereira and Uría Menéndez) which actually occupy the first, third and eighth positions concerning business turnover in the whole continental Europe [The Lawyer European 100, 2013]. Those big law firms have their offices mainly in Madrid and Barcelona. In order to take into account any distortions which those law firms may generate to the analysis, the estimates show a robustness exercise excluding the observations from Madrid and Barcelona. The results are consistent with those of the rest of the paper.

tor (and related professionals) by size (number of employees) using the DIRCE (featuring the official business demography data in Spain).[18] The graph shows the average size for the period considered in this paper. We can observe the very small size of the companies in the sector. Another reason for having strong local markets in Spain is that there is also some segmentation in the substantive civil law which may give preference to local lawyers.[19]

3.2 Instrumental variables and controls

As it was explained, the relationship between the number of lawyers and litigation may be affected by a standard problem of endogeneity. In order to cope with this problem it is evident the need to find appropriate instruments.

As a first instrument, we created a variable called "law schools in 1968" which takes value 0, 1, 2 or 3 according to the number of law schools existing in a province in 1968 (see table 3 below). Carmignani and Giacomelli (2010) proposed a similar instrument for the case of Italy. That is, the instrument takes value 0 if by 1968 the province did not have any law school; takes value 1 if by 1968 there was one law school in the province; takes value 2 for Barcelona and Salamanca where there was two law schools (*Universitat de Barcelona* and *Autònoma de Barcelona* in the first case, Salamanca and Pontificia de Salamanca in the second case) and takes value 3 in Madrid (where it was possible to study for a law degree in *Universidad Complutense*, *Universidad Autónoma de Madrid* and *Pontificia Comillas*). We have added both private and public law schools. For example, Madrid already had two public law schools (Complutense and Autónoma) and one private (Pontificia Comillas). 1968 makes sense as a cutoff date for Spain since the next Law school to be created after that year was the UNED (*Universidad Nacional de Educación a Distancia*), created in 1972 and serving all provinces at the same time. The last law school created before that date is the University of the Basque Country (Guipúzcoa) law school in 1968. Notice that students were supposed to study in the law school of their province of residence.[20] Figure 4 provides a graph with the distributions of the "old" law schools.

The number of law schools does not really respond to any idea of court performance but rather to mere "public administration" interests largely detached from market considerations or quality concerns, reflecting funding policies enacted by the Ministry of Education and the preference for low cost profile of offering law degrees. That is, the number of degrees offered (and their price)[21]

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[18] The figure graphs the joint results for the following sectors: legal services, accounting, bookkeeping, auditing and tax consultancy. This is the lowest level of disaggregation available in the DIRCE.

[19] Specifically there is special civil (private) law (affecting a greater or lesser number of legal issues) in the following provinces or regions: Vizcaya, Álava, Guipúzcoa, Catalonia as a whole (including Barcelona, Girona, Lleida and Tarragona), Balearic Islands, Galicia as a whole (including A Coruña, Lugo, Ourense and Pontevedra), Aragón as a whole (including Zaragoza, Huesca and Teruel), Navarre, the region of Valencia as a whole (including Valencia, Alicante and Castellón) and Extremadura (only in specific towns in which the "*Fuero de Baylío*" applies).

[20] This was not changed until 2001 with the approval of the Organic Law on Universities.

[21] As an example, the price of a full academic year of a law degree at the Universidad Carlos III of Madrid in 2013 (i.e., after the rise in university tuition fees due to the current budgetary crisis) is 1,279.20 euros. The price of a full academic year of a law degree at IE University (a private university serving mainly the Madrid region area) was 18,000 euros. Therefore public prices are still clearly detached from the market. Prices are largely regulated for all public universities alike.

does not respond to market demand in Spain unlike the case of the US. For instance, the regulation which created the *Universidad Autónoma de Madrid* and the *Universitat Autònoma de Barcelona* in 1968 was concerned by the increasing population and overcrowded classrooms, but not about quality directly, court performance nor the specific situation of the legal services market in the province.[22] Note also that the Autonomous University of Madrid and the Autonomous University of Barcelona were not created to hold a law school exclusively, but had a multiplicity of schools offering different degrees. All these reasons, besides the obvious temporal distance between the market situation in 1968 and our period of analysis, make us think that is a good instrument.

We have also constructed a second instrumental variable which measures the number of kilometers (walking distance) between the current capital of the province to the capital of the historical university district (1845) in which the 10 historic law schools were located. The capital of the university districts, according to the 1845 General Plan were: Santiago de Compostela, Oviedo, Valladolid, Zaragoza, Barcelona, Salamanca, Madrid, Valencia, Seville and Granada. Our instrument takes the value 0 in the case that the current provincial capital was also capital of the historical university district. Figure 5 shows the boundaries of the districts and their capitals. For example, Granada has a value of 0 for being district capital and capital of the province of Granada, however Almería has a value 161 (the walking distance between Almería and Granada). The number of kilometers taken into account is the distance in kilometers that would be required to walk, while we have no measures in kilometers of the network infrastructure available at the time. The only university not located in a provincial capital is Santiago de Compostela (hence all the provinces of its district have a nonzero value). It seems interesting to note that the boundaries of the university districts do not correspond to the limits of the current Spanish regions.

The same reasons explained above should be valid to justify the validity of this second instrument. Moreover, in this specific case it is clear that the location of a law school in 1845 should not generate demand for legal services today.

Both instruments (distance to the historic district capital and number of law schools in 1968) show a low correlation (-0.0813). Following Wooldridge (2010) we also add as "excluded" instruments the interactions of those two instruments with the time-dummies (18 more instruments) while both the structure of the historical university districts and the presence of law schools in 1968 may have different predictive power depending on the year of our period of analysis.

The results of the tests of adequacy for these instruments are provided and discussed in the next section.

4 Results

Table 4 presents OLS estimates. Column 1 only includes fixed effects and time-dummies. Column 2 displays the results for a direct impact of lawyers per capita on litigation (litigious cases). Column 3 looks at the impact of lawyers in the previous year on the present litigation. Column 4 allows for two lags. These robustness check may be useful while lawyers may litigate in the courts with

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[22]Royal Decree-Law 5/1968, of June 6th on university urgent restructuring measures.

some delay (it seems natural to think that lawyers need some time to learn and apply new regulations). Column 5 excludes Madrid and Barcelona as it was justified in Section 3 (presence of large law firms). Following these results, a higher number of lawyers per capita seem to increase litigation. The impact is statistically significant (at the 5% level) in all the cases.

Table 5 shows the effects of lawyers per capita on litigation when we instrument lawyers per capita using our set of instruments. The structure of the Table is similar to that of Table 4. The impact of lawyers on litigation is positive and significant (at the 5% level). All test of adequacy of the instruments show good results.

From the comparison between tables 4 and 5, we can see the results are largely aligned and fairly robust. We can observe upfront that "lawyers per capita" have similar (and significant) impacts on the dependent variables whether we instrument it or not.

It seems that our empirical analysis suggests against the endogeneity of "lawyers" in the Spanish context and for the period in consideration. First, the endogeneity test for "lawyers per capita" (not reported in the tables) shows that the variable might have been treated as exogenous.[23] Second, we can observe that the coefficients in Tables 4 and 5 are very similar. If there were bidirectional causality (i.e., more lawyers generate litigation and also additional litigiousness attracts more lawyers to the market), the coefficients of OLS regressions should be larger. That is, when we instrument "lawyers per capita", we should be observing only one direction of causality (the impact of lawyers per capita on judicial inefficiency, but not otherwise). This evidence leads us to think that in Spain for the specific period of analysis there seems not to be a strong evidence of two-way causality.

Summing-up, we do not have strong evidence suggesting that increased litigation attract more lawyers to the legal market. Spanish universities seem to have "produced" an excessive number of lawyers which in turn brought an additional workload of new conflicts to the court system. However, more litigation did not attract more lawyers to the market as consequence. These arguments, of course, do not rule out that there may be more clear signs of endogeneity in other periods or in the long term in Spain.

The bottom line is, for the period 2001-2010, and across Spanish provinces, we can conclude that the impact of one percent increase in the number of lawyers per capita increased litigation by around 1.4%.

5   Conclusions

We have documented that, as happens across countries, there is a positive relationship between the number of lawyers per capita and litigation rates across Spanish provinces during the period 2001-2010, so that an increase of one percent increase in the number of lawyers per capita is associated to an increase in litigation rates of around 1.4 percent. This result holds either when we analyze the association using OLS estimates or when we use an instrumental variable (IV) approach (being the instruments two variables that capture the previous

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[23] The P-values range between 0.2701 and 0.7935 depending on the specification.

presence of law schools in Spain in 1845 and 1968). This association may have multiple sources and should not, in principle, to be interpreted as a casual relationship.

The IV results suggest that there could be some supply-pushed litigation and that a moderation in the number of additional legal conflicts might require either some restrictions to the judicial resolution of conflicts or a rise of its costs, among other measures. These results could also be informative for a (preliminary and partial) evaluation of two policy measures adopted recently in Spain: the reform of 2006, effective in 2011, concerning legal education, and the "Law of Court Fees" approved in November 2012,[24] which somehow created disincentives to bring conflicts to the court system. Our results support the hypothesis that the reduction in litigation observed recently in Spain (a 9.2% reduction in the number of cases filed in the civil courts in 2013 with respect to 2012) may be, to some extent, a consequence of these reforms.

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Figure 1: Litigation rates around the world
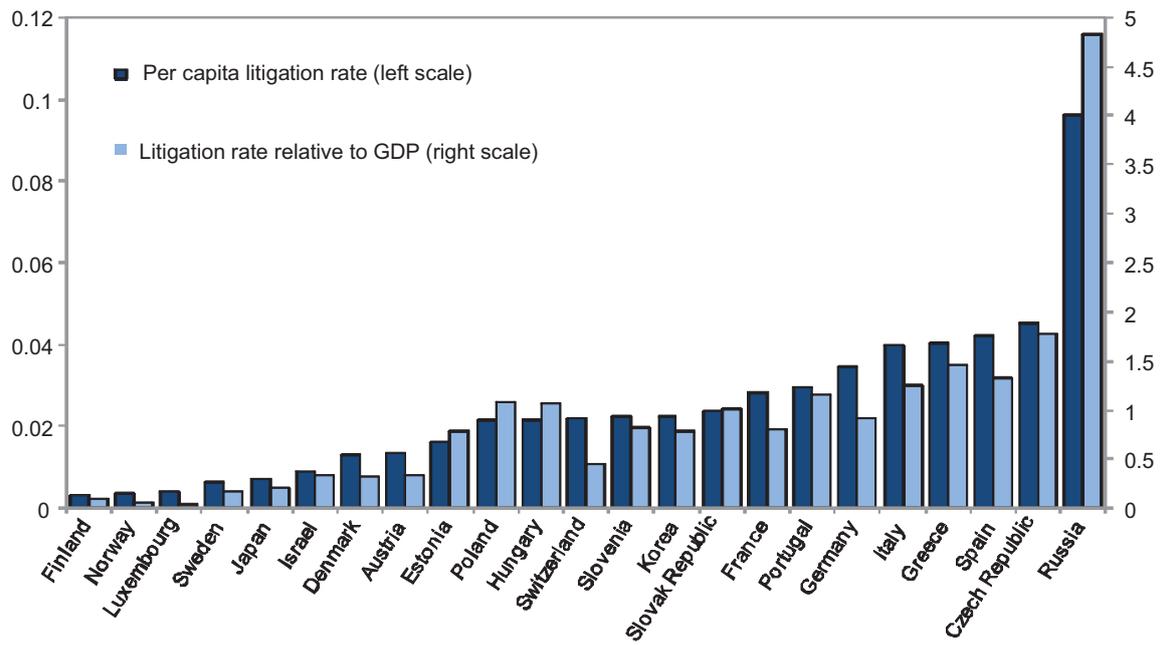
Source : Palumbo *et al.* (2013)

Figure 2: Average (2001-2009) number of lawyers (*1000) per capita in Spain by province

☐	0-1,45
☐	1,46-1,74
☐	1,75-1,92
☐	1,93-2,40
☐	2,41-5,05
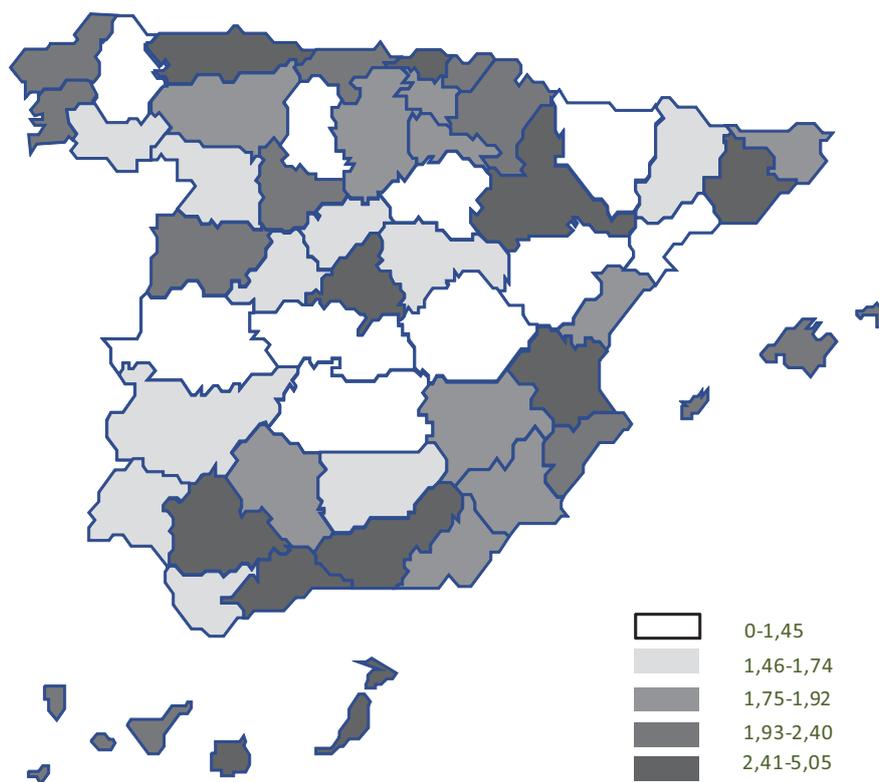
Source : Own elaboration using the Census of the Consejo General de la Abogacía Española

Figure 3: Enterprises by size (number of employees) in selected professional services sectors

	No employees	1 to 2	3 to 5	6 to 9	10 to 19	More than 19
◼ % of enterprises	64,73%	22,56%	7,26%	2,92%	1,94%	0,591%
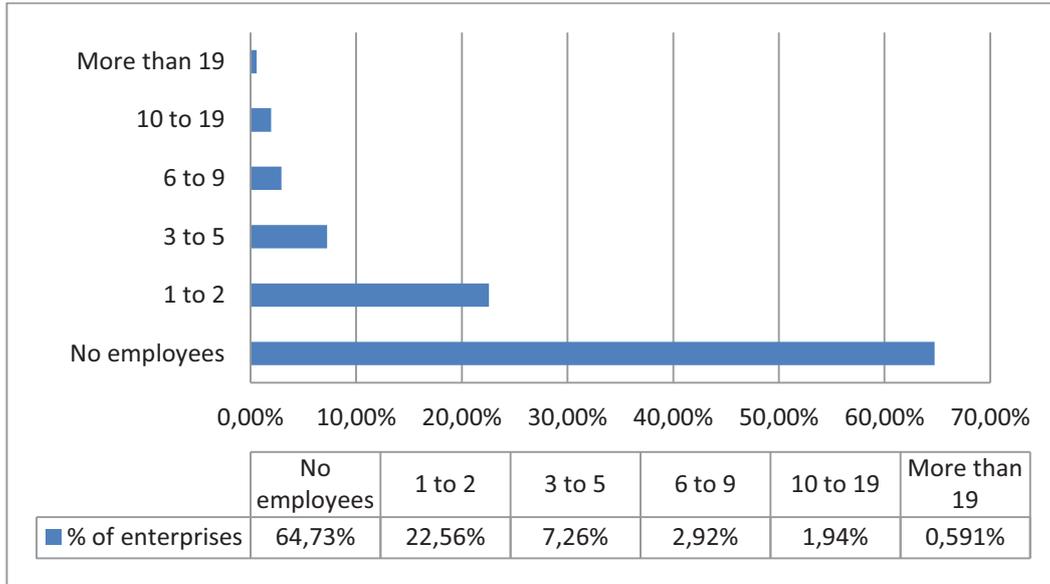
Source : DIRCE (INE)

Figure 4: Location of law schools in Spain in 1968
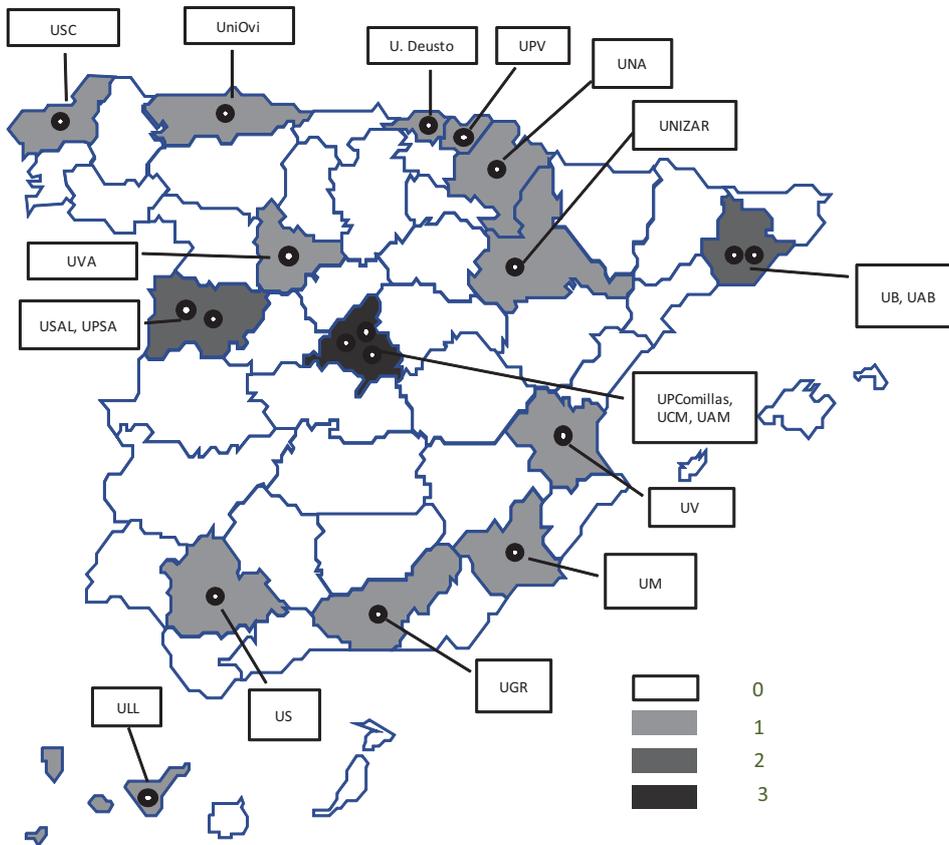
Source : Own elaboration

Figure 5: Historical (1845) university districts

Santiago
Oviedo
Zaragoza
Valladolid
Barcelona
Salamanca
Madrid
Valencia
Granada
Sevilla

⊙ Capital of the historical university district (1845)
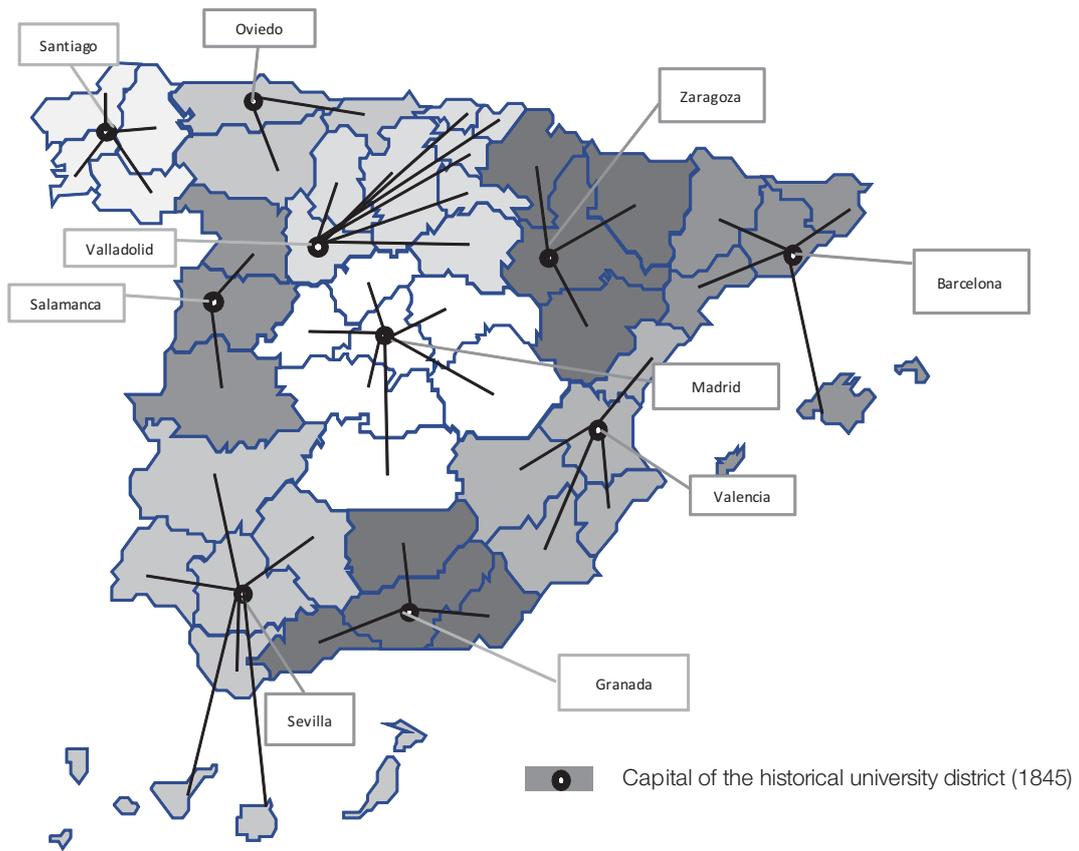
Source : Own elaboration

Table 1: Variable descriptions

Variable	Definition	Scale/units	Period	Source
Litigious cases	Sum of the new cases (conflicts) arriving to the tribunals in a specific year plus the pending cases	Number of cases	By province, 2001-2011	Own elaboration from Consejo General del Poder Judicial (CGPJ) data
Log (Lawyers) per capita	Log of the number of lawyers inscribed in Bar associations divided by the population.	Log (Lawyers*1000 per capita)	By province, 2001-2009	Own elaboration using the census of the Consejo General de la Abogacía Española
Associations per capita	Number of associations per capita	Associations per capita	By province, 2001-2010	INE /DIRCE
Enterprises per capita	Number of enterprises founded by individuals per capita	Enterprises per capita	By province, 2001-2010	INE /DIRCE
Chief province	Province in which the High Court of Justice of the region is located	Dummy	Not applicable	Self elaboration
Law schools in 1968	Law schools in Spain by province in 1968	Number of law schools	Not applicable	Self elaboration
Distance to the district capital	Walking distance to the university district capital in 1845	Kilometers	Not applicable	Self elaboration
Population	Number of inhabitants	Inhabitants	By province, 2001-2009	INE (Regional accounts)
GDP growth	Rate of growth of the GDP	%	By province, 2001-2010	INE (Regional accounts)
GDP per capita	Ratio between current GDP and population.	Fraction	By province, 2001-2009	INE (Regional accounts)
Unemployment rate	Percentage of total workforce who are unemployed and are looking for a paid job.	%	By province, 2001-2009	La Caixa
NPL ratio	Ratio of non-performing loans to total banking loans (only to Spanish companies by Spanish credit institutions)	Fraction	By province, 2001-2009	Banco de España - Eurosystem

Source : Own elaboration

Table 2: Correlations between controls

	GDP growth	GDP per capita	Associations per capita	Enterprises per capita	Unemployment rate	Chief province	NPL ratio
GDP growth	1						
GDP per capita	-0.2117	1					
Associations per capita	-0.1054	0.5863	1				
Enterprises per capita	0.0696	0.2733	0.1573	1			
Unemployment rate	-0.5435	-0.2151	-0.2171	-0.3261	1		
Chief province	0.0289	0.1786	0.1627	0.1368	-0.0563	1	
NPL ratio	-0.6312	0.0553	0.0494	-0.1197	0.4944	-0.0993	1

Source : Own elaboration

Table 3: Law schools in Spain by province in 1968

Province	Law schools in 1968	Numeric value of the instrument	Year in which the university was established
Barcelona	Universitat de Barcelona, Universidad Autònoma de Barcelona	2	1430, 1968
La Coruña	Universidade de Santiago de Compostela	1	1495
Granada	Universidad de Granada	1	1531
Guipuzcoa	Universidad del País Vasco	1	1968
Madrid	Universidad Complutense, Universidad Pontificia Comillas, Universidad Autónoma de Madrid	3	1293, 1892, 1968
Murcia	Universidad de Murcia	1	1915
Navarra	Universidad de Navarra	1	1952
Asturias	Universidad de Oviedo	1	1608
Salamanca	Universidad de Salamanca, Universidad Pontificia de Salamanca	2	1218, 1940
S.C.Tenerife	Universidad de La Laguna	1	1792
Sevilla	Universidad de Sevilla	1	1505
Valencia	Universitat de València	1	1500
Valladolid	Universidad de Valladolid	1	1295
Vizcaya	Universidad de Deusto	1	1886
Zaragoza	Universidad de Zaragoza	1	1474
Other provinces	None	0	NA

Source : Own elaboration

Table 4: Effect of the number of lawyers per capita on litigation (OLS estimates)

METHOD OF ESTIMATION	OLS	OLS	OLS	OLS	OLS (excluding Madrid and Barcelona)
(log) Lawyers per capita	1.3807**	1.3838**			0.6998**
	(0.6853)	(0.5586)			(0.3226)
(log) Lawyers per capita t-1			1.3744**		
			(0.5532)		
(log) Lawyers per capita t-2				1.3429**	
				(0.5611)	
GDP growth		0.7191	0.5580	0.8587	0.8515
		(0.6136)	(0.5639)	(0.6462)	(0.6871)
GDP per capita		-0.0001**	-0.0001*	-0.0001*	-0.0001**
		(0.0000)	(0.0000)	(0.0000)	(0.0000)
Associations per capita		0.0009	0.0004	0.0021	-0.0241
		(0.0920)	(0.0904)	(0.0897)	(0.0702)
Enterprises per capita		-0.0084	-0.0091	-0.0093	-0.0114*
		(0.0079)	(0.0083)	(0.0087)	(0.0059)
Unemployment rate		-0.0051	-0.0094	-0.0134	-0.0149
		(0.0625)	(0.0637)	(0.0651)	(0.0624)
Chief province		0.0116	0.0155	0.0227	-0.0853
		(0.2962)	(0.2935)	(0.2921)	(0.2436)
NPL ratio		0.0637***	0.0678***	0.0663***	0.0658***
		(0.0120)	(0.0100)	(0.0098)	(0.0101)
Constant	5.2795***	5.4274***	5.3825***	5.3402***	5.7557***
	(1'9394)	(1'8512)	(1'849)	(1'8829)	(2'0947)
(Province) average of each control	YES	YES	YES	YES	YES
Regional fixed effects	YES	YES	YES	YES	YES
Time dummies	YES	YES	YES	YES	YES
Observations	500	450	450	450	432
R-squared	0.8698	0.8726	0.8725	0.8719	0.8621

Note: (Clustered) Standard errors robust to heteroskedasticity and serial correlation
*** p<0.01, ** p<0.05, * p<0.1

Table 5: Effect of the number of lawyers per capita on litigation (instrumental variables estimations)

METHOD OF ESTIMATION	IV (2SLS)	IV (2SLS)	IV (2SLS)	IV (2SLS)	IV (2SLS) (excluding Madrid and Barcelona)
(log) Lawyers per capita	1.395**	1.4130**			0.7163**
	(0.7004)	(0.5761)			(0.3383)
(log) Lawyers per capita t-1			1.3717**		
			(0.5791)		
(log) Lawyers per capita t-2				1.3718**	
				(0.5808)	
GDP growth		0.7128	0.5588	1.8306**	0.8481
		(0.6076)	(0.5629)	(0.7476)	(0.6825)
GDP per capita		-0.0001**	-0.0001*	-0.0001	-0.0001**
		(0.0000)	(0.0000)	(0.0001)	(0.0000)
Associations per capita		0.0004	0.0004	0.0273	-0.0242
		(0.0919)	(0.0900)	(0.1266)	(0.0702)
Enterprises per capita		-0.0084	-0.0091	0.0074	-0.0114*
		(0.0080)	(0.0084)	(0.0139)	(0.0060)
Unemployment rate		-0.0045	-0.0094	0.0006	-0.0146
		(0.0628)	(0.0639)	(0.0711)	(0.0629)
Chief province		0.0053	0.0161	0.0130	-0.0882
		(0.2919)	(0.2912)	(0.2904)	(0.2401)
NPL ratio		0.0634***	0.0678***	0.0679***	0.0656***
		(0.0121)	(0.0101)	(0.0113)	(0.0102)
Constant	5.3001***	5.4606***	5.3795***	5.2578***	5.7718***
	(1'9623)	(1'871)	(1'8786)	(1'8596)	(2'1072)
(Province) average of each control	YES	YES	YES	YES	YES
Regional fixed effects	YES	YES	YES	YES	YES
Time dummies	YES	YES	YES	YES	YES
Angrist-Pischke multivariate F test of excluded instruments (Prob > F)	0	0	0	0	0
Underidentification test (Kleibergen-Paap P-value)	0	0	0	0	0
Hansen J statistic P-value	0.1238	0.1236	0.0950	0.1253	0.4287
Sargan statistic P-value	0.3665	0.3241	0.2691	0.2985	0.3503
Observations	500	450	450	400	432
R-squared	0.8698	0.8726	0.8725	0.8713	0.8621

Note: (Clustered) Standard errors robust to heteroskedasticity and serial correlation
*** p<0.01, ** p<0.05, * p<0.1

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