

**STUDENT ACHIEVEMENT IN A CROSS-COUNTRY
PERSPECTIVE: A MULTILEVEL ANALYSIS OF PISA 2006
DATA FOR ITALY AND SPAIN**

**TOMMASO AGASISTI
JOSE MANUEL CORDERO-FERRERA**

FUNDACIÓN DE LAS CAJAS DE AHORROS
DOCUMENTO DE TRABAJO
Nº 631/2011

De conformidad con la base quinta de la convocatoria del Programa de Estímulo a la Investigación, este trabajo ha sido sometido a evaluación externa anónima de especialistas cualificados a fin de contrastar su nivel técnico.

ISSN: 1988-8767

La serie **DOCUMENTOS DE TRABAJO** incluye avances y resultados de investigaciones dentro de los programas de la Fundación de las Cajas de Ahorros.
Las opiniones son responsabilidad de los autores.

STUDENT ACHIEVEMENT IN A CROSS-COUNTRY PERSPECTIVE: A MULTILEVEL ANALYSIS OF PISA2006 DATA FOR ITALY AND SPAIN

Tommaso Agasisti*
Jose Manuel Cordero-Ferrera*

Abstract

In this paper, we applied a multilevel analysis to the OECD-PISA2006 data with the aim to compare factors affecting students' achievement across Italy and Spain. The cross-country comparison appears as useful given the increasing role of European Union in setting priorities for European educational systems. Moreover, Italy and Spain share some common institutional features (low autonomy, choice and accountability) that make the comparison meaningful. The findings show that both countries are affected by strong internal regional heterogeneity, with some Regions clearly obtain higher students' achievement than others. Moreover, the results suggest that main determinants of achievement are different in the two countries. In Italy, a major role is for "tracking" - students are divided among comprehensive schools (Licei), technical and vocational ones. In Spain, an important distinction is between public schools and private ones – with the former outperform the latter.

Key words: Education, Cross-country comparison, PISA,

JEL classification: I21, H52

Corresponding author: José Manuel Cordero Ferrera, Department of Economics, Faculty of Business and Economics, University of Extremadura, Badajoz (06011), Spain. E-mail: jmcordero@unex.es

*Politecnico di Milano (Italy), Department of Management, Economics and Industrial Engineering.

1. Motivation and objectives

In recent years, the European Commission emphasized the necessity to strengthen the educational systems in the (European) Area. Among the many objectives, efficiency and equity assume a clear priority (EU Commission, 2006). Efficiency is defined as the ability to produce the maximum output given the available inputs, while equity is viewed as the extent to which individuals can take advantage of education and training in terms of opportunity, access, treatment and outcomes. For both these objectives, it is crucial to understand the factors behind students and schools' results. Moreover, to the extent that European Union is involved in defining common priorities and strategies for education, the scope for cross-country comparisons is broadening. A recent stream of the economic literature aimed at indentifying factors that can explain international variations of students' achievement (Fuchs & Woessman, 2007; Hanushek & Woessman, 2010). The primary objective of these studies is to estimate an "international" education production function, to find out which educational characteristics are associated with higher average performances (in a pure cross-country comparison). The main datasets employed in this research are the OECD-PISA data, which are based on standardized tests compiled by representative samples of 15 years old students. The most recent evidence suggests that while many variables (students and schools' characteristics, home inputs, teachers' quality, etc.) do play a role in explaining students' performances, much part of international variation is due to different "institutions".

"(...) the institutional structures of the education system is again found to be strongly associated with how much students learn in different countries. (...) institutions account for roughly one quarter of the international variation in students' performance"

(Fuchs & Woessman, 2007; p. 460)

"On family and background and school inputs, the international results tend to mirror the existing national evidence on education production. Many dimensions of students' family background are important factors for their educational achievement. At the same time, it is hard to find evidence of

substantial positive effects of most resource inputs, in particular class sizes and expenditure levels. (...) the impact of schools comes through teacher quality and institutional structures that determine incentives. Institutional features of school systems can account for a substantial part of the cross-country variation in student achievement”.

(Hanushek & Woessman, 2010; p. 34)

However, these studies do not look at specific situations of single countries. A different approach (proposed in this paper) looks promising too, as some countries have common features. Moreover, focusing on countries with similar institutional settings (e.g. similar levels of school autonomy, choice, accountability etc.) will allow the researchers to investigate other interesting patterns, related to schools' characteristics as well as to students' background. This is the rationale for choosing to undertake an analysis focused on Italy and Spain.

According to OECD PISA 2006 results, Italy and Spain are placed at the bottom of the EU ranking in terms of educational attainment, as both performing clearly below the OECD average of 500 points. However, behind the average score at country level we can find a common feature in both countries: the existence of strong internal divergences across regions, as we can see in Table 1. It is worth noting that the students from some Italian and Spanish regions perform as well as students from countries placed at the top of the EU ranking¹.

The aim of this paper is to look inside the performance of each country to explore which are the main causes that explain those divergences in achievement and whether those factors coincide in both countries. For this purpose, we use data at student level about a total of 23 regions (13 from Italy and 10 from Spain) that participate in PISA 2006 with a representative sample.

¹ Those regions are Friuli Venezia, Bolzano, Trento and Veneto in Italy and Castile Leon and La Rioja in Spain.

Table 1. Differences of outcomes across Regions within Italy and Spain

	Science		Reading		Math	
	Score	SE	Score	SE	Score	SE
Italy (Provincia Autonoma di Bolzano)	526.00	1.96	502.30	2.16	513.20	1.83
Italy (Provincia Autonoma di Trento)	521.00	2.02	508.48	2.46	508.49	2.33
Italy (Provincia Basilicata)	451.00	4.99	445.74	6.26	443.22	5.05
Italy (Provincia Campania)	442.00	5.87	438.40	5.77	436.39	9.02
Italy (Provincia Emilia Romagna)	510.00	3.70	496.19	4.49	494.15	3.39
Italy (Provincia Friuli Venezia Giulia)	534.00	3.26	518.82	4.20	512.69	3.63
Italy (Provincia Liguria)	488.00	6.70	483.42	6.88	472.56	6.41
Italy (Provincia Puglia)	447.00	4.25	440.42	6.67	434.56	4.84
Italy (Provincia Sardegna)	449.00	6.11	435.38	8.18	429.30	6.95
Italy (Provincia Sicilia)	433.00	7.25	423.74	8.42	423.19	6.49
Italy (Regione Lombardia)	499.00	6.23	490.53	7.15	486.71	6.64
Italy (Regione Piemonte)	508.00	4.70	505.81	5.14	491.72	4.85
Italy (Regione Veneto)	524.00	5.40	511.33	5.87	510.40	6.21
ITALY	475.00	2.10	469.17	2.38	462.10	2.31
Spain (Andalusia)	474.00	3.97	444.65	4.11	462.72	4.19
Spain (Aragon)	513.00	3.92	483.35	5.20	512.65	4.49
Spain (Asturias)	508.00	4.94	477.24	4.69	497.31	4.85
Spain (Basque Country)	495.00	3.46	487.42	4.24	501.09	3.43
Spain (Cantabria)	509.00	3.56	474.74	4.04	501.51	2.65
Spain (Castile and Leon)	520.00	3.91	478.11	3.45	515.14	3.34
Spain (Catalonia)	491.00	5.07	476.82	5.06	487.72	5.19
Spain (Galicia)	505.00	3.43	478.72	3.40	493.88	4.07
Spain (La Rioja)	520.00	2.51	491.66	2.59	525.98	2.17
Spain (Navarre)	511.00	2.94	480.54	2.69	515.03	3.46
SPAIN	488.00	2.61	461.08	2.19	480.01	2.32
OECD Average	500.00	0.53	491.79	0.60	497.68	0.54

The remainder of the paper is organized as follows. Section 2 briefly reviews a part of the relevant literature. Section 3 describes the methodological approach and gives details about data. Section 4 contains the main results, while section 5 discusses them and concludes.

2. Literature review

In the literature there are many papers devoted to the analysis of potential factors influencing the achievement from an international perspective (Fertig & Schmidt, 2002; Fertig, 2003; Woessman, 2003; 2007; Wolter & Vellacott, 2003; Wilson, 2005; Fuch & Woessman, 2007, Woessman, 2007; Raitano & Vona, 2010). Some of them also compare the performance of two countries with

similar educational structures, with the aim of explaining potential similarities or disparities. For instance, Lamb & Fullerton (2001) use the TIMSS database to investigate the interrelationships among different factors at the student, classroom and school levels in both Australia and United States (Lamb and Fullerton, 2001). Ammermuller (2007) compares the performance of Finnish and German students using Oaxaca-Blinder and Muhn-Murphy-Pierce decomposition methods with the aim of explaining the gap between both countries in PISA 2000 results.

Likewise, there are also studies analyzing PISA results specifically for the two countries that focus our attention. In the case of Italy, Checchi (2004) analysed the effect of family background and school level peer effects on students' performance using PISA 2000 survey and found that there are significant regional disparities in student performance, even after controlling for the type of school attended. Tramonte (2004) applied a multilevel model to the same dataset controlling for individual characteristics in order to decompose the total variance of student test scores. His results show that more than a half was explained by between-region variance. Bratti *et al.* (2006) use data from PISA 2003 in a clustered-robust linear regression analysis to investigate the causes of territorial differences. Their results show that environmental variables have a crucial effect on student outcomes. Quintano *et al.* (2009) apply a multilevel model to PISA 2006 data and conclude that socio-economic background play a main role for determining learning outcomes and explaining the territorial differences. Agasisti (forthcoming a,b) used different techniques (namely, a clustered-robust linear regression and Data Envelopment Analysis) to investigate the potential role of competition among schools as a factor affecting schools' performances (positively). His results suggest an association (albeit low in magnitude) between high competitive pressure and schools' average achievement scores.

All the studies about Italy pointed out, however, a wide gap between schools located in Northern Italy and those located in the South, with the former clearly outperform the latter.

In Spain, Calero & Escardibul (2007) use PISA 2003 dataset in a multilevel model to analyze the divergences among public and private schools and conclude that socioeconomic variables and peer effects mainly explain them. Perelman & Santín (2011) use the same dataset with a similar purpose, but they adopt an approach focused on measuring educational inefficiency through Parametric Distance Function. Their results suggest that, once educational inputs and potential bias due to school choice endogeneity are taken into account, no further unexplained difference remains between students' efficiency levels across public and private-voucher schools. The same approach is also employed in Cordero et al. (2010) but, in this case, they use PISA 2006 data and focus on the explanation of territorial divergences. According to their results, most of those divergences are attributable to students' characteristics with the condition of immigrant or retaking some course as main explicative factors. Precisely, these two specific issues represent the main focus of the analysis performed in Zinovyeva *et al.* (2008) –immigration– and García et al. (2010) –retention–. The former uses an Oaxaca Blinder decomposition in order to explain the gap between native and immigrant students, which is mainly explained by the time of arrival, parental education and occupation and family possessions. The latter uses a switching regression model in order to control for endogenous selection between retaker and non-retaker students and concludes that divergences across regions are lower for those who have retaken some course.

However, to the best of our knowledge, there are no previous studies making a comparison between these two countries.

3. Methodology and data

In this section, we provide a brief description of the methodological approach adopted in the paper. Given the hierarchical nature of data (students nested into schools, schools nested into regions), we adopted a multilevel technique to investigating the impact of schools and students' characteristics on performance, while properly accounting for the multilevel structure of the dataset (Goldstein, 1995 for details on multilevel models). The procedure adopted in the paper, namely the Hierarchical Linear Modelling (HLM) is useful to analyse the performances at different levels (e.g. student-level, school-level, etc.) while controlling for the variance across levels (for a detailed explanation of the statistical model, see Bryk & Raudenbush, 1992).

We followed a consolidated tradition in the applied statistics literature about student-level/school-level data, that is to use an “additive” approach, that is by adding covariates to a baseline specification (e.g. Lamb & Fullarton, 2001; Dronkers & Robert, 2008). The estimation has been made separately for Italy and Spain. The variables included in each model are described in the following lines:

- a. The first model (baseline model) aims at decomposing the variance between two levels: students (level 1) and schools (level 2), without adding any explanatory variable.
- b. The second model adds variables at student level which include those referred to students' background (gender, foreign status, immigrant condition, parents' education and occupation) and related to home resources (possession of own room or computer, the number of books at home, etc.).
- c. The third model includes a further set of variables, referred to the school factors and characteristics (e.g. size, number of computers, proportion of girls, etc.).
- d. The forth and fifth models provide useful information about the type of school in which the students are enrolled. In the case of Spain this information refers only to the public or private status and where it is

placed (village or city), but in Italy this classification also distinguishes among vocational, technical or comprehensive (*Licei*), as the previous literature showed the latter outperform the technical ones, which in turn outperform vocational ones.

- e. The final model also includes dummy variables representing every region with the aim of verifying whether significant divergences across them arise within the country. The inclusion of regional dummies allows a direct comparison of each specific region's average efficiency (in terms of students' achievement). To correctly estimate the region's effect, the worst region for each of the two countries has been excluded as the reference region (Sicily for Italy, Andalusia for Spain).

The precise list of the variables employed at student and school-level is provided in the next section (Data). The examination of the changes that occurred at the level of variance components by adding different groups of variables, allow us to measure the effects of the covariates in explaining factors that are influencing performances. As the set of covariates is identical for Italy and Spain, the comparison of variables' coefficients allows us to underline the main differences between the two countries.

In a second step of our evaluation, we perform a specific analysis for each region in Italy and Spain for which there is a representative sample available with the aim of identifying potential divergences across regions within a country. For this purpose we have followed the same "additive" approach used in the previous analysis, although we only present the results obtained in the final model (complete results available from the authors).

In order to avoid potential bias in the statistical models because of the different number of cases in each region we follow the same approach used in Dronkers and Roberts (2008) and select only Regions for which at least 1,500 observations are available. However, there are some regions where this number is slightly lower, since they do not reach this number due to some

exclusion. Specifically, those regions are Campania, Piemonte, Sardegna and Sicilia in Italy and Andalucia, Cantabria and La Rioja in Spain².

Data

The selection of variables has been driven by the necessity to find out a common core of features to be compared between Italy and Spain. Thus, we select variables that turned out as significant in international comparisons about the determinants of students' performances (e.g., Fuchs & Woessmann, 2007). All the data comes from the PISA2006 dataset (see <http://pisa2006.acer.edu.au/> for an overview).

Output-variables

We use Science scores as performance measure, as it is the main focus of OECD-PISA 2006 edition. The PISA dataset provides not a unique measure of output, but five plausible values for each discipline (estimated by considering a plausible distribution according to the results of the test). As a consequence, our analysis considers the average coefficients derived from using all the five plausible values for each subject.

Student-level variables

We include several covariates to explain scores' variance across individuals. The list of these variables includes variables related to the students' background and resources at home (in brackets, the name of the original variable in the PISA dataset is reported):

Students' background

- Age in years and months (AGE), represents the age of the student using the information drawn from the question referred to the month of birth.
- Gender (ST04Q01), dummy that takes the value one if the student is female.

² Campania has 1406 observations, Piemonte, 1478, Sardegna 1390, Sicilia 1335, Andalusia, 1463 Cantabria, 1496 and La Rioja 1335.

- Repeat_once (ST01Q01): it represents whether the student have retaken one year of schooling because of insufficient academic results;
- Repeat_more (ST01Q01): it indicates whether the student have retaken more than once.
- Inmigrant_1 (ST11Q01), dummy=1 if not born in country;
- Inmigrant_2 (ST11Q02 and ST11Q03), dummy = 1 if one of his/her parents were not born in country;
- ISCED level (ISCEDL);
- Highest parental education in years (PARED);
- Mother highest schooling (ST06Q01), dummy = 1 if mother has a university degree.
- Father highest schooling (ST09Q01), dummy = 1 if father has a university degree.
- Mother white collar classification (MSECATEG), dummy = 1 if mother has a white-collar occupation
- Father white collar classification (FSECATEG), dummy = 1 if father has a white-collar occupation

Home resources

- Possession of own individual room or study place (ST13Q02 and ST13Q03), dummy=1 if yes;
- Possession of a computer (ST13Q04), dummy=1 if yes;
- Books at home (ST15Q01), we have constructed two variables as indicators of low and high levels: less than 25 and more than 200.
- Cultural possession at home (CULTPOSS), that is a composite indicator of cultural facilities (books, magazines, movies) available at home;

School-level variables

Again, in this section we report all the indicators employed in our analysis:

School factors

- Proportion of girls at school (PCGILRS);

- Proportion of immigrants in school (aggregation from question ST11Q01) in order to control for this peer-effect, dummy = 1 if the percentage of immigrant students is higher than 20%.
- Average of cultural possession at home (aggregation from CULTPOSS).
- Proportion of computers connected to the web (COMPWEB);
- Proportion of computers for instruction, defined as the number of computers divided by the school size (IRATCOMP);
- Teachers per students ratio (STRATIO);
- Quality of educational resources, defined as a question answered by schools' heads in the PISA questionnaire (SCMATEDU, also defined WLE indicator).
- School size (SCHSIZE).
- Class size (SC06Q01), dummy = 1 if there are less than 25 students in the class.

Type of school

- Public/private status (SCHLTYPE), by separating public schools, private government-dependent, and private independent (the difference is in the amount of public money provided to the school, the latter defined as <50%);
- School community (SC07Q01), dummy = 1 if the school is located in a village or small town.
- Technical and Licei (STRATUM), two different dummies that take value one for each type of school (used for the Italian case only). Thus, vocational schools are the reference for comparison.

Regional dummies

- A total number of 21 dummy variables have been constructed (9 for Spain and 12 for Italy) in order to disentangle whether divergences in terms of results are significantly different for each region. In both countries, the regions with the lowest results in Science in PISA

(Andalusia in Spain and Sicilia in Italy according to information showed in Table 1) act as a reference.

According to the values showed in table 2, which reports the descriptive statistics for all these variables in both countries, there are some noteworthy divergences between Italy and Spain. For instance, among level-1 variables, the number of students that retake one course is clearly higher in Spain, although the main difference arise with regard to the variable that represent those who retake more than one course, which present a mean value close to zero in Italy. Another significant statement comes from the fact that the proportion of parents that have completed university studies is higher in Spain, whereas the proportion of high skilled workers (mothers and fathers) is higher in Italy. Regarding the home sources, apart from the bigger proportion of students with own room in Spain, the most significative aspect that must be pointed out is that Italian household seem to have a lower number of books at home, albeit the index of cultural possessions reflects a higher mean value for this country.

The divergences between the countries are less significant in most of school resources, although the average quality, represented by SCMATÉDU, is notably superior in Italy as well as the proportion of small classes (with less than 25 students). However, the most remarkably difference arises in the number of private and, especially, government-dependent schools, which is much higher in Spain.

Table 2. Descriptive Statistics for Italy and Spain

VARIABLES	ITALY				VARIABLES	SPAIN			
LEVEL 1	Min	Max	Mean	Dev	LEVEL 1	Min	Max	Mean	Dev
AGE	15.25	16.33	15.76	0.28	AGE	15.30	16.33	15.838	0.28
GENDER	0	1	0.50	0.50	GENDER	0	1	0.50	0.50
REPEATONCE	0	1	0.17	0.38	REPEATONCE	0	1	0.25	0.43
REPEATMORE	0	1	0.003	0.00	REPEATMORE	0	1	0.05	0.22
IMMIG1	0	1	0.05	0.21	IMMIG1	0	1	0.05	0.22
IMMIG2	0	1	0.08	0.26	IMMIG2	0	1	0.09	0.29
PARYEARS	3.0	17.0	12.50	3.25	PARYEARS	3.0	16.50	11.94	3.82
MOTUNIV	0	1	0.12	0.32	MOTUNIV	0	1	0.21	0.41
FATUNIV	0	1	0.12	0.33	FATUNIV	0	1	0.20	0.40
MOTWHITE	0	1	0.27	0.44	MOTWHITE	0	1	0.24	0.43
FATWHITE	0	1	0.36	0.48	FATWHITE	0	1	0.32	0.47
OWNROOM	0	1	0.68	0.46	OWNROOM	0	1	0.87	0.33
OWNCPU	0	1	0.90	0.29	OWNCPU	0	1	0.90	0.29
BOOKS<25	0	1	0.24	0.43	BOOKS<25	0	1	0.16	0.36
BOOKS>200	0	1	0.22	0.41	BOOKS>200	0	1	0.28	0.45
CULTPOSS	-1.38	1.01	0.20	0.81	CULTPOSS	-1.42	1.07	0.17	0.86
LEVEL 2					LEVEL 2				
PCGIRLS	0	1	0.50	0.24	PCGIRLS	0	1	0.49	0.08
IMMIG20pct	0	1	0.03	0.17	IMMIG20pct	0	1	0.05	0.22
CULTPOSS	-1.38	1.01	0.20	0.35	CULTPOSS	-1.10	0.97	0.17	0.31
COMPWEB	0	1	0.86	0.20	COMPWEB	0.07	1	0.89	0.17
IRATCOMP	0	1.36	0.16	0.15	IRATCOMP	0.02	0.72	0.10	0.07
STRATIO	1.82	19.64	8.76	2.56	STRATIO	1.19	29.60	11.91	4.31
SCMATEDU	-2.64	2.14	0.21	0.96	SCMATEDU	-3.43	2.13	0.08	0.93
SCHOOLSIZE	9	2536	662.32	416.56	SCHOOLSIZE	34	2539	680.58	399.64
CLASSIZE	0	1	0.81	0.39	CLASSIZE	0	1	0.60	0.49
PRIVATE	0	1	0.02	0.13	PRIVATE	0	1	0.08	0.27
GOVDEP	0	1	0.04	0.20	GOVDEP	0	1	0.36	0.48
VILLAGE/TOWN	0	1	0.25	0.43	VILLAGE/TOWN	0	1	0.35	0.47
BOLZANO	0	1	0.11	0.31	ANDALUSIA	0	1	0.08	0.28
BASILICATA	0	1	0.08	0.27	ARAGON	0	1	0.08	0.28
CAMPANIA	0	1	0.07	0.25	ASTURIAS	0	1	0.09	0.28
E. ROMANA	0	1	0.07	0.26	CANTABRIA	0	1	0.09	0.28
F. VENEZIA	0	1	0.08	0.27	CASTILE LEON	0	1	0.08	0.28
LIGURIA	0	1	0.10	0.30	CATALONIA	0	1	0.08	0.28
LOMBARDIA	0	1	0.07	0.26	GALICIA	0	1	0.09	0.28
PIEMONTE	0	1	0.07	0.25	LA RIOJA	0	1	0.07	0.26
PUGLIA	0	1	0.07	0.25	NAVARRA	0	1	0.08	0.28
SARDEGNA	0	1	0.07	0.25	B. COUNTRY	0	1	0.25	0.43
SICILIA	0	1	0.07	0.25	-	-	-	-	-
TRENTO	0	1	0.08	0.28	-	-	-	-	-
VENETO	0	1	0.07	0.26	-	-	-	-	-
TECHNICAL	0	1	0.323	0.468	-	-	-	-	-
LICEI	0	1	0.398	0.489	-	-	-	-	-

4. Results

4.1. Comparison at country level

In this section, we present the main results obtained in our multilevel analysis. In a first stage, we have estimated separate models for Italy and Spain using the whole dataset for each country. Although we have made five estimations for each model (one for each plausible value in Science)³, we only interpret the average values.

As we mentioned in the previous section, the first step of our analysis consists of estimating the baseline model in order to decompose the variance between student and school level. According to data in tables 3 and 4, where variance decomposition of every estimated model is reported, there are significant divergences between the role of schools in explaining the results between these countries, with values placed between 35% and 50% in Italy (with the exception of the model that includes regional dummies) while this percentage only reaches an average 15% in Spain. The finding of a high between-schools variance in Italy is not new. Other analyses, based on standardized tests at the end of lower secondary education, showed that this phenomenon exists since lower grades (Invalsi, 2010). When analyzing OECD-PISA data, the simpler explanation for this is “tracking”: PISA examinations are taken when students are 15 years old, and they are already tracked into three different types of schools (Licei, technical, vocational). Moreover, some forms of student sorting are likely to exist also within homogenous school types, even though Agasisti & Vittadini (2010) demonstrated that schools’ average SES is not able to capture this sorting, suggesting a role for different dimensions, like cultural profiles of families.

³ Regarding the calculation of standard errors, we follow the recommendations of the PISA Data Analysis Manual (PISA, 2009), which consists of using a *balanced repeated replication with 80 replicates*. This technique allows us to avoid potential bias derived from the stratification process of the sampling design in PISA.

Table 3: Variance decomposition in different multilevel models for Italy

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Schools (u_{0j})	4856.080	3758.176	2822.953	2774.246	2223.387	856.081
Students (r_{ij})	4621.957	4216.481	4216.492	4216.486	4215.424	4218.318
Total ($u_{0j} + r_{ij}$)	9478.037	7974.657	7039.445	6990.732	6438.811	5074.399
% Var. Schools	51.24%	47.13%	40.10%	39.68%	34.53%	16.87%

Table 4: Variance decomposition in different multilevel models for Spain

	Model 1	Model 2	Model 3	Model 4	Model 5
Schools (u_{0j})	1122.306	657.287	584.566	571.259	449.422
Students (r_{ij})	6235.640	4141.270	4140.245	4140.571	4140.735
Total ($u_{0j} + r_{ij}$)	7357.946	4798.557	4724.811	4711.830	4590,157
% Var. Schools	15.25%	13.70%	12.37%	12.12%	9.79%

Afterwards, we have estimated alternative models in which student and school variables are included. The average values of those estimates, which are showed in tables 5 and 6, provide us very helpful information to identify divergences between both countries.

Table 5. HLM estimates for Italy

VARIABLES	Model 1			Model 2			Model 3			Model 4			Model 5			Model 6		
	Coeff.	SE	p-value	Coeff.	SE	p-value	Coeff.	SE	p-value	Coeff.	SE	p-value	Coeff.	SE	p-value	Coeff.	SE	p-value
Intercept	481.100	2.656	0.000	407.723	26.295	0.000	337.104	28.553	0.000	336.836	28.611	0.000	324.401	29.040	0.000	284,807	27,640	0.000
Level 1																		
AGE				5.205	1.649	0.002	5.148	1.649	0.002	5.155	1.649	0.002	5.111	1.648	0.002	4,980	1,644	0,003
GENDER				-13.707	1.089	0.000	-14.195	1.095	0.000	-14.170	1.095	0.000	-14.171	1.095	0.000	-14,307	1,091	0,000
REPEATONCE				-41.936	1.371	0.000	-41.296	1.372	0.000	-41.336	1.372	0.000	-40.860	1.371	0.000	-41,219	1,364	0,000
REPEATMORE				42.509	89.727	0.635	59.362	84.017	0.480	56.671	83.779	0.499	92.205	80.458	0.223	26,379	71,481	0,712
IMMIG1				-20.118	2.765	0.000	-19.812	2.765	0.000	-19.790	2.765	0.000	-19.924	2.764	0.000	-20,389	2,760	0,000
IMMIG2				1.318	2.208	0.550	1.431	2.208	0.517	1.417	2.207	0.521	1.467	2.206	0.506	0,584	2,203	0,791
PARYEARS				-0.492	0.192	0.011	-0.511	0.192	0.008	-0.512	0.192	0.008	-0.519	0.192	0.007	-0,618	0,191	0,002
MOTUNIV				0.637	1.818	0.726	0.263	1.818	0.885	0.295	1.818	0.872	0.324	1.817	0.859	0.352	1.814	0.846
FATUNIV				5.206	1.781	0.004	4.923	1.781	0.006	4.960	1.781	0.006	4.926	1.780	0.006	5.035	1.777	0.005
MOTWHITE				4.657	1.198	0.000	4.469	1.198	0.000	4.481	1.198	0.000	4.369	1.197	0.000	4.411	1.195	0.000
FATWHITE				2.822	1.114	0.012	2.431	1.114	0.029	2.451	1.114	0.028	2.319	1.114	0.037	2.272	1.112	0.041
OWNROOM				1.278	1.028	0.214	1.233	1.028	0.231	1.244	1.028	0.226	1.259	1.027	0.221	0.959	1.025	0.350
OWNCPU				12.106	1.648	0.000	11.945	1.648	0.000	11.971	1.648	0.000	11.704	1.648	0.000	11.328	1.644	0.000
BOOKS<25				-14.166	1.242	0.000	-13.690	1.243	0.000	-13.694	1.24288	0.000	-13.674	1.242	0.000	-13.093	1.240	0.000
BOOKS>200				11.872	1.268	0.000	11.553	1.268	0.000	11.594	1.268	0.000	11.661	1.268	0.000	11.157	1.266	0.000
CULTPOSS				3.325	0.674	0.000	3.563	0.674	0.000	3.550	0.674	0.000	3.588	0.674	0.000	3.779	0.674	0.000
Level 2																		
PCGIRLS							-4.119	8.799	0.639	-6.560	8.761	0.455	-13.066	8.380	0.119	-16.749	5.567	0.003
IMMIG20pct							-30.842	10.021	0.003	-24.107	10.246	0.019	-8.682	9.408	0.357	-15.329	6.472	0.018
CULTPOSS							63.483	6.612	0.000	65.324	6.704	0.000	5.013	7.769	0.519	31.885	5.36	0.000
COMPWEB							25.222	10.189	0.014	24.616	10.127	0.016	12.947	9.178	0.002	5.995	6.089	0.326
IRATCOMP							49.093	15.934	0.003	56.299	16.128	0.001	45.587	14.605	0.333	1.843	10.042	0.855
STRATIO							3.724	0.980	0.000	4.251	0.985	0.000	0.907	0.936	0.003	1.494	0.636	0.019
SCMATEDU							9.294	2.220	0.000	9.635	2.210	0.000	6.199	2.028	0.462	0.242	1.356	0.858
SCHOOLSIZE							0.009	0.006	0.117	0.004	0.006	0.514	0.004	0.006	0.000	0.016	0.003	0.000
CLASSIZE							19.244	5.396	0.001	19.792	5.355	0.000	18.513	4.858	0.000	4.596	3.251	0.158
School ownership																		
PRIVATE										-43.549	13.788	0.000	-52.736	12.505	0.118	-54.002	8.438	0.000
GOVDEP										-23.019	9.713	0.002	-13.967	8.918	0.601	-16.720	6.173	0.007
VILLAGE/TOWN										-0.128	5.099	0.980	-2.397	4.601	0.119	2.717	3.153	0.389
Type of school																		
TECHNICAL													46.981	5.323	0.000	45.879	3.527	0.000
LICEI													90.227	7.073	0.000	71.104	4.804	0.000
Region																		
BOLZANO																120.465	6.388	0.000
BASILICATA																22.218	6.579	0.001
CAMPANIA																0.753	6.521	0.909
E. ROMANA																73.395	6.473	0.000
F. VENEZIA																101.246	6.501	0.000
LIGURIA																61.472	6.319	0.000
LOMBARDIA																73.147	6.523	0.000
PIEMONTE																76.101	6.636	0.000
PUGLIA																16.472	6.523	0.012
SARDEGNA																12.271	6.601	0.063
TRENTO																96.507	6.627	0.000
VENETO																97.348	6.581	0.000

Table 6. HLM estimates for Spain

VARIABLES	Model 1			Model 2			Model 3			Model 4			Model 5		
	Coeff.	SE	p-value	Coeff.	SE	p-value	Coeff.	SE	p-value	Coeff.	SE	p-value	Coeff.	SE	p-value
Intercept	504.990	1.490	0.000	339.215	27.827	0.000	321.463	27.929	0.000	317.666	29.300	0.000	310.424	29.350	0.000
Level 1															
AGE				11.113	1.741	0.000	10.992	1.741	0.000	10.991	1.743	0.000	11.036	1.746	0.000
GENDER				-17.309	1.089	0.000	-17.587	1.088	0.000	-17.596	1.092	0.000	-17.398	1.091	0.000
REPEATONCE				-70.184	1.265	0.000	-70.086	1.263	0.000	-70.200	1.264	0.000	-70.489	1.263	0.000
REPEATMORE				-119.803	2.296	0.000	-119.809	2.296	0.000	-119.527	2.285	0.000	-120.04	2.274	0.000
IMMIG1				-8.207	3.300	0.013	-7.690	3.297	0.012	-7.585	3.324	0.023	-7.754	3.321	0.020
IMMIG2				-2.371	2.189	0.279	-2.140	2.191	0.252	-2.209	2.183	0.312	-2.316	2.176	0.288
PARYEARS				0.861	0.208	0.000	0.803	0.209	0.000	0.826	0.208	0.000	0.831	0.208	0.000
MOTUNIV				-4.816	1.811	0.008	-5.001	1.809	0.008	-5.087	1.807	0.005	-4.797	1.804	0.008
FATUNIV				-0.225	1.715	0.896	-0.477	1.712	0.909	-0.506	1.707	0.767	-0.228	1.704	0.894
MOTWHITE				9.464	1.434	0.000	9.078	1.435	0.000	9.030	1.438	0.000	9.024	1.438	0.000
FATWHITE				8.054	1.292	0.000	7.680	1.295	0.000	7.668	1.301	0.000	7.831	1.299	0.000
OWNROOM				-2.205	1.545	0.154	-2.289	1.544	0.159	-2.277	1.551	0.142	-2.419	1.542	0.117
OWNCPU				10.627	1.884	0.000	10.420	1.885	0.000	10.434	1.881	0.000	10.728	1.879	0.000
BOOKS<25				-23.013	1.569	0.000	-22.754	1.570	0.000	-22.816	1.570	0.000	-22.606	1.570	0.000
BOOKS>200				18.598	1.228	0.000	18.446	1.226	0.000	18.482	1.226	0.000	18.411	1.224	0.000
CULTPOSS				5.716	0.688	0.000	5.229	0.697	0.000	5.197	0.695	0.000	5.110	0.694	0.000
Level 2															
PCGIRLS							33.122	13.083	0.012	28.939	13.280	0.030	23.930	12.337	0.052
IMMIG20pct							-5.447	4.073	0.182	-5.494	4.059	0.177	-3.302	4.232	0.436
CULTPOSS							25.976	4.100	0.000	26.381	4.152	0.000	13.753	4.384	0.002
COMPWEB							2.824	5.543	0.610	-2.206	5.596	0.693	0.357	0.473	0.451
IRATCOMP							-16.652	16.245	0.306	-9.277	15.687	0.554	2.544	5.207	0.625
STRATIO							-0.348	0.347	0.316	1.037	0.488	0.034	-11.769	13.718	0.392
SCMATEDU							0.518	1.062	0.626	0.738	1.065	0.488	0.438	1.008	0.664
SCHOOLSIZE							0.004	0.003	0.188	0.002	0.003	0.468	0.008	0.003	0.008
CLASSIZE							2.281	2.391	0.341	2.946	2.364	0.214	2.303	2.262	0.310
School ownership															
PRIVATE										-9.980	4.786	0.037	-4.488	4.856	0.356
GOVDEP										-14.793	3.720	0.000	-6.014	3.821	0.116
VILLAGE/TOWN										-0.477	2.607	0.855	-3.661	2.293	0.111
Region															
ARAGON													15.404	4.236	0.001
ASTURIAS													12.505	4.671	0.008
CANTABRIA													19.391	4.514	0.000
CASTILE Y LEON													24.262	4.692	0.000
CATALONIA													-0.916	4.729	0.847
GALICIA													21.277	4.481	0.000
LA RIOJA													22.7611	4.911	0.000
NAVARRRE													10.937	5.904	0.064
BASQUE COUNTRY													-8.729	4.085	0.033

Among students' background variables, the age has a positive and significant effect in both countries although its magnitude is higher in Spain. On the contrary, being a girl, a one-year retaker or being born out of the country has a negative effect on achievement in both countries. Among those variables, the effect of retaking is higher in Spain while being a first-generation immigrant leads to clearly worst results in Italy.

The variable "*Repeat_more*" deserve a specific comment. It does not affect the results in Italy since there are few cases in the sample whereas in Spain, where the number of students in this situation is high, this variable emerges as the main cause to explain lower outcomes for students. However, the proportion of students who repeated one or more years in Italy is traditionally low; we also checked the information through a companion dataset, the information provided by the Italian Ministry of Education, which shows how less than 13% of students repeated one year in the academic year 2005/06.

The rest of background variables present similar values for both countries, although the variables related to the qualification of parents' jobs (a measure of socio-economic status) present significantly higher values in Spain.

With regard to variables representing home resources, the possession of own room does not have a significant effect on achievement in any country, but having a computer does have. Coefficients associated with variables representing the number of books present the expected values, i.e., negative for those who have less than 25 and positive for students living in household with more than 200 books, however these effect are again higher for Spain in both cases. Finally, the variable representing cultural possessions has a positive, significant and similar value in both countries.

The estimation for school factors also reflects significant divergences between the countries. The percentage of girls and the average of cultural possessions present are only significant (and positive) effect in Spain while the number of

computers with internet connection and the class size has only a significant (and positive) effect on results for Italy. However, we can find some similarities as well, thus the variable that represents the quality of school resources does not have influence in any country, but the teacher per student ratio does in both of them.

The estimates for the complete model without taking into account regional dummies reveal notable divergences in the classification of schools. In Italy, there are not significant differences among public, private and government dependent schools or between schools placed in towns or cities, but this fact could be mainly explained because the noteworthy divergences emerge where technical, vocational and comprehensive schools are compared. Regarding this point, we must point out that our results coincide with previous studies, since the outcome of *licei* schools is higher than the technical ones, which in turn do better than the vocational ones. Thus, while previous studies reported the negative role of private schooling (Bratti *et al.*, 2007) we should underline that such effect disappears once taken adequately into account the hierarchical nature of data (HLM modelling) and the gap between *Licei* and other school types. In Spain, significant divergences across schools arise in the comparison among public, private and government dependent ones, with the first ones outperforming the rest. These results are in the same line of other studies that have used the latest PISA dataset in Spain (Calero and Waisgrais, 2009; Cordero *et al.*, 2010).

However, the former results change drastically when regional dummies are included in the analysis. Hence, in Italy, the divergences among vocational, technical and *licei* schools are still significant, but we can also notice that government dependent schools and especially the private ones obtain clearly worse results than their public counterparts. On the contrary, in Spain the consideration of regional variables in the analysis eliminates the divergences across schools according to the type of ownership.

Likewise, the final model estimated for each country allow us to corroborate that divergences across regions are relevant, since only two regions (Campania in Italy and Catalonia in Spain) obtain results that are not significantly different from those considered as reference (Sicilia in Italy and Andalusia in Spain)⁴.

These final statements provide us with an additional support to the importance of performing the analysis at regional level.

4.2. Comparison at regional level

Following the same approach used in the first analysis, the first step consists of decomposing the variance in the baseline level. Tables 7 and 8 show the values calculated for each of 23 regions. As it could be expected, Italian regions present higher values of the percentage explained by schools than Spanish ones, although there are notably divergences among them. For instance, in Friuli Venezia this value is below 40%, while in Campania, Liguria, Lombardia and Trento it presents values higher than 50%. These results are rather different from those reported by national statistics. More specifically, Invalsi – the National Evaluation Committee for the Educational System – illustrates that, at the end of lower secondary education, between-schools is much higher in the South than in the North (Invalsi, 2010). Just as an example, between-schools variance is 14.8% in Lombardy versus 60.5% in Campania (data refer to Math scores). There are many potential reasons to explain these different figures. Among them, the first is that Invalsi and OECD-PISA tests are taken at different stages (lower secondary and upper secondary level, respectively). Second, the high between-schools variance revealed by PISA tests is probably due to “tracking” that occur at upper secondary school level – a situation that is identical in all the Italian Regions.

⁴ These two regions present significant values at the 90% level of confidence. If we consider the 95% level, Sardegna and Navarre should also be mentioned.

Table 7. Variance decomposition in baseline model for Italian regions

	Bolzano	Basilicata	Campania	E.Romana	F.Venezia	Liguria	Lombardia	Piemonte	Puglia	Sardegna	Sicilia	Trento	Veneto
Schools (u_{0j})	3414.86	3494.54	4856.08	3925.90	2948.28	5742.74	4902.41	3281.49	2444.01	3705.56	3682.49	4647.05	3600.81
Students (r_{ij})	4777.78	4124.31	4621.95	5407.65	4600.94	4840.93	4681.25	4801.87	4449.61	4528.88	4703.73	4501.47	4263.49
Total ($u_{0j} + r_{ij}$)	8192.64	7618.86	9478.03	9333.55	7549.22	10583.67	9583.66	8083.37	6893.63	8234.45	8386.23	9148.53	7864.31
% Var. Schools	41.68%	45.87%	51.24%	42.06%	39.05%	54.26%	51.15%	40.60%	35.45%	45.00%	43.91%	50.80%	45.79%

Table 8. Variance decomposition in baseline model for Spanish regions

	Andalucia	Aragon	Asturias	Cantabria	Castile and Leon	Catalonia	Galicia	La Rioja	Navarre	Basque Country
Schools (u_{0j})	651.74	802.78	944.71	641.55	583.01	1273.66	632.07	930.62	1019.90	1479.29
Students (r_{ij})	6942.99	6870.13	5644.23	6430.44	5523.16	6744.05	6980.99	6859.47	6604.01	5294.18
Total ($u_{0j} + r_{ij}$)	7594.73	7672.92	6588.95	7071.99	6106.17	8017.72	7613.06	7790.09	7623.92	6773.48
% Var. Schools	8.58%	10.46%	14.34%	9.07%	9.55%	15.89%	8.30%	11.95%	13.38%	21.84%

Although in Spain the role of schools in explaining the results is significantly lower, we can also detect differences across regions. Hence, the proportion of variance in Basque Country is 22%, which is twice as much as in Andalusia, Galicia, Castile Leon or Cantabria where this percentage does not reach 10%.

After this initial approach, the complete models that include all the variables have been estimated (Model 5 for Italian regions and Model 4 for Spanish regions). Tables 9 and 10 report those estimates, for which it can be noticed at first sight that there are less significant variables than in the analysis carried out at country level (this is mainly due to the lower number of observations available for each region).

With regard to the variables related to the students' background, there are few variables that have a significant effect on results in most regions. Actually, only the gender and the condition of retaker or immigrant can be included in this category. Their effect are negative in all cases and the values are similar across regions, but it could be noteworthy to mention Bolzano as an example of region where girls perform worse and Veneto as an example of region where student that were not born in Italy obtain clearly worse results. The effect of the variable Repeat_once varies notably across regions, thus there are 20 points of divergence between Friuli Venezia and Sicilia. For the rest of the variables, their influence on achievement is scarce or statistically insignificant in most of regions, although there are some cases that should be emphasized such as the high effect of fathers' university studies in Puglia or the importance of mothers' qualification in Piemonte and Sicilia. In Spain, the list of significant variables coincide with those mentioned for Italy, although there is a main addition, Repeat_more, which has a key impact on results in every region with a negative value above 100 in every region.

The variables that represent home resources also present divergences in their values and significance in both countries. In most of Italian regions, the possession of own room does not seem to matter, but possessing a computer

does in most of them. The influence of the variables related to the number of books is significant, although there are some exceptions, while the effect of the variable representing other cultural possessions is weaker. Those results coincide in general with those obtained for Spanish regions, though the significance of the indicator representing cultural possessions is more extended and the possession of a computer seems to matter less. The variables that represent school inputs are clearly affected more by the reduction of the number of observations. As a result, most of them appear to be non-significant in most of Regions. However, there are some interesting results that must be highlighted. For instance, the decisive negative effect of having more than 20 per cent of immigrants in class for some regions (Basilicata and Friuli Venezia in Italy and La Rioja and Navarra in Navarre) or the positive influence of the peers, represented by the average of the cultural possession indicator, in other regions (Friuli Venezia, Puglia and Veneto in Italy and Catalonia, Navarre and Basque Country in Spain).

Finally, with regard to the type of school, it has been already mentioned previously that main divergences in Italy arise when we compare technical, vocational and comprehensive centres. However, there are some regions where private schools present significantly worse results than public ones (Friuli Venezia, Lombardia, Sardegna, Sicilia and Veneto) and one (Puglia) where private ones perform better. The comprehensive schools have clearly better results than the other ones in every region with the exception of Trento and Emilia Romagna, where the technical ones present similar values. In Spain, the lack of differences among public and private centres detected in most of regions (except in La Rioja) can be explained by the lower number of observations, since this variable does have a significant influence at country level, however it is possible to find significant and notable divergences between public and government dependent schools in Aragon, Cantabria and La Rioja, where the former outperform the latter. Moreover, in two Spanish regions, Cantabria and Basque Country, the schools placed in a village/town have significantly worse results.

Table 9. HLM estimates for Italian Regions

VARIABLES	BOLZANO			BASILICATA			CAMPANIA			EMILIA ROMANA			FRIULI VENEZIA		
	Coeff.	SE	p-value	Coeff.	SE	p-value	Coeff.	SE	p-value	Coeff.	SE	p-value	Coeff.	SE	p-value
Intercept	255.403	93.877	0.009	204.715	99.457	0.045	237.014	89.783	0.012	264.137	107.557	0.019	451.308	100.696	0.000
Level 1															
AGE	11.228	5.226	0.032	10.555	5.820	0.069	9.539	5.710	0.095	6.914	6.336	0.276	1.253	5.928	0.833
GENDER	-22.418	3.548	0.000	-14.458	4.509	0.002	-24.375	4.644	0.000	-13.459	4.334	0.002	-16.318	3.641	0.000
REPEATONCE	-45.657	3.807	0.000	-35.217	5.034	0.000	-40.860	1.371	0.000	-47.415	5.702	0.000	-28.872	5.514	0.000
REPEATMORE	0.626	76.233	0.994	-71.847	112.842	0.458	42.260	85.226	0.802	37.548	64.546	0.874	-54.548	64.424	0.688
IMMIG1	-22.196	9.169	0.016	-18.034	15.481	0.245	-25.576	14.702	0.082	-37.242	10.315	0.001	-28.198	8.148	0.001
IMMIG2	3.763	7.479	0.614	0.817	8.896	0.927	1.467	2.206	0.506	3.555	8.792	0.686	4.443	5.186	0.392
PARYEARS	0.225	0.719	0.754	-1.308	0.766	0.088	-0.519	0.192	0.007	-1.174	0.763	0.124	-1.000	0.802	0.213
MOTUNIV	1.402	6.220	0.822	-1.281	9.524	0.893	0.324	1.817	0.859	12.105	0.624	0.052	2.619	7.283	0.719
FATUNIV	-3.308	5.894	0.574	8.144	7.078	0.251	9.370	9.053	0.301	-8.321	6.163	0.177	14.469	5.997	0.016
MOTWHITE	5.305	3.501	0.130	5.443	3.890	0.162	4.200	4.626	0.364	5.483	4.454	0.219	0.101	4.058	0.980
FATWHITE	7.311	3.413	0.032	5.480	3.301	0.100	2.319	1.114	0.037	2.417	4.307	0.574	-4.469	3.670	0.225
OWNROOM	-1.966	3.544	0.579	-1.514	3.485	0.663	1.259	1.027	0.221	4.536	4.162	0.277	-3.088	3.963	0.436
OWNCPU	19.178	6.182	0.002	18.941	6.149	0.003	11.704	1.648	0.000	8.841	6.511	0.175	2.039	7.990	0.799
BOOKS<25	-7.032	3.981	0.077	-10.373	4.262	0.015	-13.6711	1.242	0.000	-22.629	5.194	0.000	-20.049	5.130	0.000
BOOKS>200	15.503	4.048	0.000	19.612	5.984	0.001	11.661	1.268	0.000	4.069	4.626	0.379	13.6527	4.470	0.003
CULTPOSS	2.890	2.100	0.169	2.214	2.298	0.336	3.588	0.674	0.000	3.739	2.656	0.159	3.258	2.222	0.143
Level 2															
PCGIRLS	-18.241	18.767	0.335	-19.638	22.215	0.382	-13.080	8.379	0.356	13.656	23.229	0.560	-12.904	17.571	0.467
IMMIG20pct	-35.894	23.622	0.133	-83.858	15.460	0.000	-8.694	9.408	0.271	48.956	32.097	0.136	-60.343	18.566	0.003
CULTPOSS	10.614	21.380	0.621	33.797	19.654	0.092	8.556	7.753	0.159	31.855	22.917	0.173	35.151	11.399	0.004
COMPWEB	23.501	40.584	0.564	13.202	15.631	0.403	12.954	9.177	0.002	-3.588	30.180	0.906	-4.117	20.552	0.842
IRATCOMP	-42.416	34.742	0.227	60.285	43.971	0.178	45.622	14.605	0.333	2.808	43.258	0.949	69.966	23.971	0.006
STRATIO	5.488	2.832	0.057	2.651	2.240	0.244	0.907	0.936	0.003	2.164	2.951	0.468	1.268	1.699	0.459
SCMATEDU	1.258	4.815	0.795	-3.479	5.376	0.521	6.199	2.028	0.462	-3.453	5.111	0.503	4.828	3.071	0.123
SCHOOLSIZE	-0.016	0.033	0.630	0.027	0.022	0.217	0.004	0.006	0.000	0.039	0.012	0.003	0.034	0.008	0.000
CLASSIZE	27.396	16.679	0.105	-2.588	9.305	0.782	18.502	4.858	0.000	12.317	9.812	0.218	0.034	0.008	0.087
School ownership															
PRIVATE	-38.159	45.156	0.401	-42.874	51.875	0.401	-52.736	12.505	0.118	8.424	36.256	0.818	-45.064	15.905	0.007
GOVDEP	0.576	20.480	0.978	-11.248	15.614	0.395	-13.937	8.917	0.601	-20.586	31.049	0.511	-15.487	29.445	0.608
VILLAGE/TOWN	16.211	11.417	0.161	-13.780	11.147	0.224	-2.401	4.601	0.119	6.115	22.057	0.783	1.679	8.606	0.846
Type of school															
Technical	39.992	12.502	0.003	39.838	10.237	0.000	20.186	11.585	0.089	81.242	17.821	0.000	35.465	10.529	0.002
Licei	56.431	15.575	0.001	74.002	19.061	0.000	45.443	13.876	0.003	80.959	21.448	0.001	49.005	13.237	0.001

Table 9. HLM estimates for Italian Regions (cont.)

VARIABLES	LIGURIA			LOMBARDIA			PIEMONTE			PUGLIA			SARDEGNA		
	Coeff.	SE	p-value	Coeff.	SE	p-value	Coeff.	SE	p-value	Coeff.	SE	p-value	Coeff.	SE	p-value
Intercept	492.857	96.430	0.000	319.381	103.800	0.004	463.153	106.431	0.000	455.402	99.276	0.000	-11.435	107.933	0.917
Level 1															
AGE	-5.471	5.352	0.307	4.644	5.999	0.439	0.861	6.171	0.889	-4.329	6.140	0.481	23.634	6.187	0.000
GENDER	-14.090	4.116	0.001	-16.565	4.429	0.000	-10.197	3.863	0.009	-6.318	3.976	0.112	-12.388	4.019	0.003
REPEATONCE	-33.049	5.059	0.000	-42.465	4.829	0.000	-46.907	5.108	0.000	-44.342	6.779	0.000	-42.838	4.518	0.000
REPEATMORE	41.241	83.424	0.799	-70.711	110.687	0.498	-82.546	134.545	0.398	43.545	81.541	0.798	-71.541	111.544	0.581
IMMIG1	-12.281	8.147	0.132	-15.902	10.179	0.118	-6.327	10.782	0.557	9.035	10.601	0.394	26.847	16.580	0.105
IMMIG2	-10.258	7.061	0.146	-6.566	8.629	0.447	-4.803	8.617	0.577	6.291	7.966	0.430	-4.741	10.924	0.664
PARYEARS	-0.191	0.730	0.793	0.000	0.702	1.000	-0.678	0.721	0.348	-2.022	0.634	0.002	-1.193	0.692	0.084
MOTUNIV	0.106	4.726	0.982	-17.418	6.840	0.011	2.767	5.957	0.642	0.057	7.346	0.994	3.822	7.395	0.605
FATUNIV	-3.150	5.147	0.540	3.587	6.738	0.594	4.911	6.035	0.416	31.577	5.664	0.000	12.660	7.153	0.077
MOTWHITE	7.419	3.786	0.050	6.241	4.441	0.160	10.699	4.275	0.013	4.886	4.948	0.324	3.250	4.840	0.502
FATWHITE	5.984	3.527	0.090	3.475	4.121	0.399	-1.489	4.289	0.728	0.137	4.258	0.974	2.257	4.349	0.603
OWNROOM	1.692	3.374	0.616	1.176	3.581	0.742	-0.979	3.804	0.797	0.849	3.464	0.806	0.328	4.275	0.939
OWNCPU	16.388	4.830	0.001	14.777	6.755	0.029	4.979	6.991	0.476	11.573	4.439	0.010	7.606	5.466	0.164
BOOKS<25	-17.988	4.738	0.000	-9.642	4.722	0.041	-21.474	4.896	0.000	-4.813	3.462	0.165	-12.068	5.072	0.018
BOOKS>200	8.184	5.053	0.105	8.869	4.562	0.052	23.312	4.540	0.000	6.756	6.774	0.319	5.27	4.468	0.239
CULTPOSS	6.508	2.318	0.006	3.017	2.471	0.223	0.226	2.568	0.930	5.138	2.511	0.041	3.794	2.702	0.161
Level 2															
PCGIRLS	20.785	19.886	0.301	-5.411	22.658	0.813	-7.320	25.342	0.774	-40.060	12.544	0.003	-27.034	25.780	0.302
IMMIG20pct	1.266	13.459	0.926	25.039	33.872	0.464	9.194	34.418	0.791	-7.545	11.546	0.320	-7.878	8.682	0.291
CULTPOSS	10.779	16.693	0.521	14.445	26.427	0.587	28.795	23.344	0.226	48.674	13.247	0.001	-4.168	30.404	0.892
COMPWEB	30.042	17.313	0.088	-37.024	24.944	0.146	-31.945	28.552	0.272	18.279	12.532	0.153	48.686	29.112	0.103
IRATCOMP	-35.510	21.550	0.105	-5.124	35.805	0.887	85.644	93.748	0.368	123.744	35.156	0.001	62.438	60.175	0.307
STRATIO	-3.076	2.033	0.136	7.495	3.605	0.044	-0.929	2.722	0.735	2.497	1.874	0.191	-1.104	3.224	0.734
SCMATEDU	-2.020	4.877	0.680	3.254	8.696	0.710	1.042	6.893	0.881	-5.733	6.545	0.389	5.625	6.742	0.410
SCHOOLSIZE	0.020	0.014	0.153	0.006	0.016	0.715	0.014	0.011	0.226	0.008	0.007	0.253	-0.001	0.020	0.963
CLASSIZE	16.059	12.771	0.214	-2.172	15.580	0.890	2.147	15.558	0.892	-6.145	7.022	0.388	41.173	15.355	0.011
School ownership															
PRIVATE	-65.379	41.398	0.120	-68.173	28.614	0.023	-26.679	19.963	0.191	30.118	11.532	0.013	-112.820	46.886	0.022
GOVDEP	-13.057	12.232	0.291	33.444	45.790	0.470	-12.546	9.714	0.487	-17.845	11.581	0.584	-24.547	29.454	0.338
VILLAGE/TOWN	-11.578	9.586	0.233	26.149	14.045	0.070	16.573	14.686	0.268	-5.605	6.032	0.359	-26.445	14.090	0.068
Type of school															
Technical	54.364	11.818	0.000	91.670	17.189	0.000	48.287	15.392	0.004	20.606	10.573	0.059	22.024	14.65	0.141
Licei	90.465	19.827	0.000	98.928	24.973	0.000	92.559	22.192	0.000	67.206	16.614	0.000	113.527	20.795	0.000

Table 9. HLM estimates for Italian Regions (cont.)

VARIABLES	SICILIA			TRENTO			VENETO		
	Coeff.	SE	p-value	Coeff.	SE	p-value	Coeff.	SE	p-value
Intercept	409.659	113.003	0.001	295.360	88.879	0.002	461.520	78.736	0.000
Level 1									
AGE	-0.633	6.583	0.924	9.880	5.406	0.067	-3.085	4.920	0.530
GENDER	-11.324	4.091	0.006	-7.354	4.496	0.102	-10.207	4.027	0.012
REPEATONCE	-49.027	5.944	0.000	-35.955	4.569	0.000	-43.111	4.951	0.000
REPEATMORE	35.546	70.771	0.788	-15.987	47.874	0.881	13.549	48.548	0.714
IMMIG1	2.755	12.195	0.821	-30.273	9.676	0.002	-44.882	12.977	0.001
IMMIG2	-4.733	10.142	0.640	7.919	7.031	0.261	12.492	8.282	0.132
PARYEARS	0.231	0.717	0.747	-1.097	0.728	0.132	-0.071	0.634	0.911
MOTUNIV	4.948	7.564	0.513	2.133	7.272	0.768	0.224	8.153	0.978
FATUNIV	3.529	7.469	0.636	-4.286	6.639	0.518	10.666	6.566	0.104
MOTWHITE	11.998	4.998	0.017	-3.099	3.987	0.437	-8.992	3.901	0.021
FATWHITE	0.866	4.330	0.842	4.622	4.304	0.284	2.694	3.503	0.442
OWNROOM	6.907	4.082	0.091	2.783	3.164	0.380	3.517	3.063	0.252
OWNCPU	9.868	5.545	0.075	15.531	5.153	0.003	6.154	7.069	0.384
BOOKS<25	-10.439	4.589	0.023	-16.366	3.657	0.000	-19.622	4.097	0.000
BOOKS>200	10.895	5.782	0.059	4.070	4.837	0.400	8.936	4.082	0.029
CULTPOSS	-1.492	2.813	0.596	2.996	2.174	0.168	4.782	2.115	0.024
Level 2									
PCGIRLS	-36.858	32.612	0.267	-14.657	15.042	0.333	-38.247	16.311	0.025
IMMIG20pct	-10.547	9.487	0.202	28.079	20.416	0.176	14.650	17.156	0.399
CULTPOSS	52.038	27.689	0.068	28.720	21.464	0.188	36.250	15.205	0.023
COMPWEB	-9.265	28.115	0.744	12.672	21.375	0.556	50.037	27.700	0.079
IRATCOMP	-16.396	79.035	0.837	11.884	30.148	0.695	42.487	27.615	0.132
STRATIO	-1.161	3.399	0.734	3.536	2.930	0.234	-0.415	1.566	0.792
SCMATEDU	-1.145	7.423	0.879	-8.417	5.322	0.120	-0.374	4.399	0.933
SCHOOLSIZE	0.017	0.015	0.256	0.013	0.015	0.371	0.023	0.010	0.032
CLASSIZE	-3.402	12.499	0.787	-25.699	11.853	0.035	41.725	11.131	0.001
School ownership									
PRIVATE	-141.164	49.590	0.008	-21.044	11.472	0.073	-93.617	18.664	0.000
GOVDEP	22.584	44.733	0.616	-8.754	18.568	0.401	-42.264	14.214	0.006
VILLAGE/TOWN	-4.711	20.444	0.819	9.114	7.908	0.256	-0.113	12.953	0.993
Type of school									
Technical	38.475	16.039	0.022	82.298	13.879	0.000	39.888	9.317	0.000
Licei	74.749	19.772	0.001	80.247	19.576	0.000	60.865	13.614	0.000

Table 10. HLM estimates for Spanish Regions

VARIABLES	ANDALUCÍA			ARAGON			ASTURIAS			CANTABRIA			CASTILE AND LEON		
	Coeff.	SE	p-	Coeff.	SE	p-	Coeff.	SE	p-	Coeff.	SE	p-value	Coeff.	SE	p-value
Intercept	281.2746	110.709	0.015	83.613	92.985	0.375	438.400	90.906	0.000	401.663	98.944	0.000	426.221	96.039	0.000
Level 1															
AGE	12.813	6.030	0.034	24.633	5.883	0.000	6.452	5.450	0.237	8.806	5.953	0.139	4.520	5.981	0.450
GENDER	-23.994	3.437	0.000	-12.669	3.767	0.001	-19.158	3.844	0.000	-15.335	3.486	0.000	-16.977	2.551	0.000
REPEATONCE	-68.922	4.019	0.000	-62.926	3.706	0.000	-67.663	3.723	0.000	-72.609	3.890	0.000	-68.875	3.574	0.000
REPEATMORE	-121.196	6.381	0.000	-123.635	5.790	0.000	-114.561	9.039	0.000	-110.765	6.775	0.000	-104.944	5.287	0.000
IMMIG1	-21.545	13.205	0.103	3.890	9.543	0.683	1.917	9.189	0.835	-16.276	9.147	0.075	-14.303	8.776	0.103
IMMIG2	12.662	7.707	0.100	-20.193	8.115	0.013	-0.326	5.580	0.954	-2.705	6.960	0.696	2.615	7.027	0.709
PARYEARS	1.617	0.582	0.006	1.406	0.726	0.053	0.557	0.693	0.421	0.131	0.780	0.867	-0.464	0.558	0.405
MOTUNIV	-16.029	6.769	0.018	-10.638	6.077	0.080	-4.164	5.814	0.474	1.840	6.084	0.762	3.002	5.598	0.591
FATUNIV	2.371	6.631	0.720	-2.055	6.197	0.740	-3.393	5.162	0.511	-4.996	5.572	0.370	10.608	5.563	0.056
MOTWHITE	9.473	5.447	0.082	14.798	4.705	0.002	11.891	4.585	0.010	12.313	5.392	0.023	0.945	5.380	0.861
FATWHITE	8.379	4.547	0.065	11.196	4.563	0.014	13.142	3.884	0.001	14.175	3.890	0.001	2.661	4.682	0.569
OWNROOM	5.571	4.408	0.207	-5.911	5.511	0.284	0.506	4.582	0.913	3.022	4.581	0.509	-10.004	8.972	0.181
OWNCPU	16.154	4.967	0.002	13.957	6.821	0.041	-0.663	6.742	0.922	10.757	6.259	0.085	10.113	5.947	0.089
BOOKS<25	-22.038	4.396	0.000	-25.260	6.423	0.000	-17.8016	4.291	0.000	-28.289	4.722	0.000	-25.706	5.918	0.000
BOOKS>200	25.085	5.155	0.000	16.186	4.286	0.000	14.251	3.6018	0.000	25.022	4.192	0.000	20.038	3.442	0.000
CULTPOSS	5.231	2.324	0.024	6.312	2.564	0.014	6.478	2.288	0.005	6.042	2.174	0.006	8.249	2.603	0.002
Level 2															
PCGIRLS	-8.180	77.732	0.917	49.857	28.111	0.084	-51.721	39.444	0.197	-48.426	34.411	0.167	63.094	41.224	0.134
IMMIG20pct	-20.548	35.487	0.411	-3.080	6.587	0.642	-25.391	13.600	0.069	-16.821	7.624	0.049	-11.245	13.545	0.411
CULTPOSS	18.158	13.839	0.197	20.486	11.227	0.075	-6.379	17.910	0.723	-8.840	11.876	0.461	11.498	17.416	0.513
COMPWEB	8.959	25.823	0.730	-13.704	13.936	0.332	5.699	24.192	0.815	8.711	11.006	0.433	23.072	15.068	0.133
IRATCOMP	28.937	53.030	0.588	-41.824	62.192	0.505	-28.022	67.070	0.678	-89.933	37.035	0.020	79.244	77.570	0.314
STRATIO	0.262	3.004	0.931	2.121	1.403	0.139	-0.783	2.034	0.702	3.747	1.604	0.025	-1.288	1.272	0.318
SCMATEDU	-1.344	3.467	0.700	2.428	3.164	0.447	-0.260	3.906	0.948	-4.461	4.004	0.272	5.468	2.392	0.028
SCHOOLSIZE	0.001	0.014	0.967	0.005	0.007	0.491	0.024	0.018	0.197	-0.013	0.014	0.363	0.006	0.011	0.596
CLASSIZE	1.109	8.171	0.893	11.047	4.995	0.033	10.110	10.409	0.338	-1.002	8.564	0.908	3.341	6.269	0.597
School ownership															
PRIVATE	-13.294	33.709	0.695	-5.379	8.988	0.553	25.099	20.856	0.236	-8.636	10.939	0.435	-13.338	9.469	0.167
GOVDEP	-14.836	23.244	0.527	-31.763	11.688	0.010	11.152	17.512	0.528	-42.402	12.712	0.002	13.234	10.277	0.205
VILLAGE/TOWN	-4.783	8.469	0.575	0.577	8.551	0.947	-12.454	7.825	0.119	-11.718	5.817	0.050	0.668	7.861	0.933

Table 10. HLM estimates for Spanish Regions (cont.)

VARIABLES	CATALONIA			GALICIA			LA RIOJA			NAVARRRE			BASQUE COUNTRY		
	Coeff.	SE	p-value	Coeff.	SE	p-value	Coeff.	SE	p-value	Coeff.	SE	p-value	Coeff.	SE	p-value
Intercept	310.517	112.565	0.009	433.807	102.138	0.000	197.417	92.094	0.040	229.692	108.748	0.041	320.538	57.193	0.000
Level 1															
AGE	8.211	5.838	0.160	7.788	5.987	0.194	16.327	5.747	0.005	14.372	5.687	0.012	10.190	3.530	0.004
GENDER	-22.310	3.666	0.000	-25.712	3.575	0.000	-12.842	4.522	0.005	-18.849	4.080	0.000	-12.385	2.381	0.000
REPEATONCE	-65.726	4.180	0.000	-76.234	4.182	0.000	-74.000	4.628	0.000	-77.554	4.458	0.000	-70.971	3.125	0.000
REPEATMORE	-116.734	10.168	0.000	-133.225	6.272	0.000	-113.136	8.314	0.000	-123.678	9.024	0.000	-125.012	6.330	0.000
IMMIG1	-23.234	10.424	0.026	10.404	8.616	0.228	9.889	14.211	0.486	-3.546	10.699	0.740	-9.371	8.320	0.261
IMMIG2	-0.755	0.631	0.905	2.039	5.891	0.729	-18.199	9.061	0.044	3.891	7.267	0.592	-6.831	5.496	0.214
PARYEARS	1.400	0.749	0.061	1.452	0.661	0.028	1.864	0.786	0.018	-0.180	0.736	0.807	0.686	0.413	0.096
MOTUNIV	4.377	6.936	0.528	-10.030	6.164	0.104	17.885	8.133	0.028	1.302	5.937	0.827	-3.272	3.147	0.299
FATUNIV	-9.309	5.780	0.107	-2.442	6.161	0.692	-7.333	5.470	0.181	14.112	6.066	0.020	1.496	3.374	0.657
MOTWHITE	9.035	4.185	0.031	9.372	5.099	0.066	10.893	5.212	0.037	5.561	4.028	0.168	7.846	2.925	0.008
FATWHITE	0.897	4.314	0.836	8.068	4.584	0.078	9.141	4.017	0.023	9.832	4.462	0.028	3.707	2.552	0.146
OWNROOM	-7.595	5.931	0.201	-11.480	5.472	0.036	6.898	5.708	0.227	-8.846	5.546	0.111	-0.996	3.057	0.744
OWNCPU	8.607	7.568	0.256	7.542	4.854	0.120	21.655	7.728	0.006	12.028	6.381	0.059	8.591	4.491	0.055
BOOKS<25	-26.788	5.178	0.000	-23.528	5.074	0.000	-32.2146	6.151	0.000	-21.774	6.093	0.001	-12.674	3.307	0.000
BOOKS>200	19.744	5.118	0.000	7.517	4.371	0.085	19.286	3.44	0.000	22.368	4.532	0.000	19.244	2.329	0.000
CULTPOSS	3.050	2.488	0.221	3.275	2.271	0.150	2.726	2.344	0.246	5.296	2.629	0.044	4.310	1.332	0.002
Level 2															
PCGIRLS	45.724	65.437	0.489	16.364	35.410	0.646	92.625	31.956	0.007	-24.342	27.782	0.387	29.114	17.553	0.099
IMMIG20pct	4.417	8.733	0.616	-28.732	23.279	0.225	-53.972	16.437	0.003	-38.331	10.454	0.001	4.181	7.218	0.563
CULTPOSS	27.997	13.803	0.049	-14.544	17.043	0.399	-17.143	27.530	0.538	37.121	14.960	0.018	22.180	7.186	0.003
COMPWEB	0.154	23.136	0.995	3.914	22.033	0.860	-17.206	18.486	0.359	3.455	43.445	0.937	0.317	9.602	0.974
IRATCOMP	91.132	62.044	0.150	-111.387	49.043	0.029	-0.624	42.049	0.988	69.956	61.762	0.265	-21.515	30.124	0.476
STRATIO	2.239	1.779	0.216	-1.518	2.172	0.489	2.621	1.936	0.185	6.307	3.067	0.046	0.416	0.748	0.579
SCMATEDU	3.712	2.618	0.164	4.284	4.567	0.354	-1.546	3.663	0.675	-8.139	4.758	0.095	3.423	2.129	0.110
SCHOOLSIZE	0.017	0.014	0.255	0.006	0.017	0.738	0.006	0.010	0.529	-0.014	0.015	0.370	0.011	0.005	0.041
CLASSIZE	-1.564	6.818	0.820	-2.551	8.174	0.756	2.139	7.306	0.771	10.784	8.491	0.212	-5.193	5.116	0.312
School ownership															
PRIVATE	-10.453	18.403	0.573	0.764	18.642	0.968	-36.489	12.747	0.008	3.610	20.363	0.861	-5.661	13.670	0.679
GOVDEP	0.076	13.573	0.996	13.787	16.937	0.421	-24.977	8.986	0.009	-12.294	20.376	0.549	-7.813	6.891	0.259
VILLAGE/TOWN	2.768	7.770	0.723	-5.137	9.473	0.590	-0.134	6.575	0.984	11.509	12.257	0.354	-13.589	4.226	0.002

5. Discussion and concluding remarks

In this paper, we applied a multilevel model to the OECD-PISA2006 data about Italy and Spain, with the aim of identifying common patterns between the two countries. More specifically, we were interested in discussing whether the factors behind the students' achievement are similar or not. Moreover, a deeper analysis concerned the regional differences that characterize both countries. The findings can be interesting for policy purposes, given the growing necessity to provide evidences about the results and their determinants in educational systems within Europe.

The first evidence is that the Italian educational setting shows a much higher between-schools variance than the Spanish case. The reason for such difference is that Italian students are tracked in three different secondary school types: *Licei* (comprehensive schools), technical and vocational schools. The students who attend the former group clearly outperform their counterparts attending the other two groups. Previous literature on educational tracking pointed out the risk of increasing inequality. Hanushek & Woessman (2005) studied the differences between “tracked” and “untracked” systems, by means of several international datasets (e.g. OECD-PISA, TIMSS, PIRLS) and conclude that early tracking at age 10, while no evidence is provided about tracking at secondary level – in the latter case, the analysis should undertake the effects on higher education. Data about Italy actually shows that there is a statistical difference between different school types in terms of OECD-PISA 2006 test scores. The average score for *Licei* is 425 (all other things equal) compared with 382 of technical schools, and even 335 of vocational schools (table 5). In some Italian regions, this difference is even wider (see Lombardia in table 6).

A judgment about the consequences for equity is beyond the scope of this paper; nevertheless, when studying the effects behind students' performances, such influence should be adequately kept in mind. Moreover, a point should be raised about the tracking procedure in Italy. Indeed, students sort themselves

into the three different school types, typically on the basis of their expectations and/or previous results. To the extent that expectations and previous results are influenced by families' background, the resulting output can be easily challenged on the equity ground.

The second evidence is that a strong negative obstacle in terms of achievement affects Spanish students who repeated more than once. Table 5 shows that they perform more than 100 points below the other students' average – that is, a 25% disadvantage. Such effect is enormous in magnitude, and calls for a serious reflection in terms of policy implications, since this piece of evidence is clearly correlated with higher levels of school dropout, one of the main problems in the Spanish education system (Fuentes, 2009; Mora *et al.*, 2010). Even though the proportion of students in such conditions is low (5%) an equitable educational system should take care of them by means of appropriate initiatives. Some recent educational literature discussed potential actions to be implemented; for instance, Ritter *et al.* (2009) reviewed some papers on the effect of volunteer tutoring and demonstrate its effectiveness. Other potential strategies could be improving teachers' training or strengthening the role of social workers when it comes to make parents aware of the importance of education. It is important to recall here that such compensatory programs should be realized at the lower level of education, as the bad results of students at secondary schooling levels are probably related to previous educational experiences.

Third, several common features characterized the two countries (tables 4 and 5). Among them, (i) the disadvantage for students from immigrant families (between 7 and 13 points) and (ii) a negative effect due to low cultural families' profile (13-23 points) are the most evident. These findings are coherent with previous studies that underlined the relevant role played by families' socio-economic background (Causa & Chapuis, 2009).

The last evidence comes from the analysis carried out at regional level. The Italian and Spanish educational settings are interesting given the high heterogeneity across regions in both countries. Some Regions perform well

above the OECD average (e.g. Friuli Venezia Giulia and La Rioja – Italy and Spain respectively), while others look characterized by low performance levels (e.g. Campania and Andalusia). These differences among Regions raise a question about the role of central and regional governments. Indeed, while Regions are committed to a high role in regulating and financing education in Spain, the same does not hold for Italy; thus, it is odd that higher variations among schools exist for the latter than for the former. Moreover, investigating the reasons associated with regional differences is an interesting subject *per se*. Our paper provides preliminary insights in this respect, by describing the factors affecting students' performances for each Region. The picture that emerges is useful as it claims for a different role of some variables – depending upon each single Region.

An illustrative example derives from the role of computer possession in Italy. Students who have a computer perform better in Basilicata, Campania, Puglia and Sicily but not in Emilia Romagna, Friuli Venezia Giulia and Veneto. It is noticeable that the former group comprises poor regions in the South, while the latter rich regions in Northern Italy. A plausible explanation is that having a computer matters in contexts where schools' facilities are poor; or having a computer is an indirect measure of socio-economic status. A detailed discussion of the single results for each region is not the primary objective of this paper; instead, the findings could be useful for national and regional policy-makers who want to better understand the patterns behind students' achievement scores.

Along with the growing role of the European Union in educational policy making, detailed cross-country comparisons between educational systems of European countries will be required. Our paper goes into this direction, by providing some methodological suggestions and empirical findings.

References

- Agasisti, T., 2011a. The effect of competition on schools' performance: preliminary evidence from Italy through OECD-PISA data. *European Journal of Education, forthcoming*.
- Agasisti, T., 2011b. The efficiency of Italian secondary schools and the potential role of competition. A Data Envelopment Analysis using OECD- PISA2006 data. *Education Economics, forthcoming*.
- Agasisti, T., Vittadini, G., 2010. The Determinants of Students' Achievement: A Multilevel Analysis of new Italian Data. Working Paper, Politecnico di Milano and University of Milano-Bicocca.
- Ammermüller, A. 2007. PISA: What Makes the Difference? Explaining the Gap in Test Scores between Finland and Germany. *Empirical Economics*, 33 (2), 263-287.
- Bratti, M., Checchi, D., Filippin, 2007a. Territorial differences in Italian students' mathematics competences: Evidence from PISA. *IZA Discussion Paper*, 2603.
- Bratti, M., Checchi, D., Filippin, A., 2007b. Da dove vengono le competenze degli studenti? (Which are the determinants of students' competencies?). Il Mulino:Bologna (Italy).
- Bryk, A.S., Raudenbush, S.W., 1992. *Hierarchical linear models: applications and data analysis methods*. Sage Publications, Newbury Park.
- Calero, J., Escardibul, J. O., 2007. Evaluación de servicios educativos: el rendimiento en los centros públicos y privados medido en PISA-2003. *Hacienda Pública Española*, 183 (4/2007), 33-66.
- Calero, J., Waisgrais, S., 2009. Rendimientos educativos de los alumnos inmigrantes: identificación dela incidencia de la condición de inmigrante y de los peer-effects, *XVI Encuentro de Economía Pública*, Granada, february, 2009.
- Causa, O., C. Chapuis 2009. Equity in Student Achievement Across OECD Countries: An Investigation of the Role of Policies. *OECD Economics Department Working Papers*, 708, OECD Publishing.
- doi: 10.1787/223056645650
- Checchi, D., 2004. Da dove vengono le competenze scolastiche? L'indagine PISA 2000 in Italia. *Stato e Mercato*, 72, 413-453.
- Cordero, J.M., Cebada, E., Pedraja, F., Santín, D., 2011. Exploring educational efficiency divergences across Spanish regions in PISA 2006. *Revista de Economía Aplicada, forthcoming*.
- Dronkers, J., Robert, P., 2008. Differences in Scholastic achievement of public, private government-dependent, and private independent schools. *Education Policy*, 22(4), 541-577.

- European Commission, 2006. *Communication from the Commission to the Council and to the European Parliament: Efficiency and Equity in European Education and Training Systems*. COM(2006) 481 final.
- Fertig, M., 2003. Educational Production, Endogenous Peer Group Formation and Class Composition, Evidence from the PISA 2000 Study. *IZA Discussion Paper*, 714.
- Fertig, M. Schmidt, C., 2002. The Role of Background Factors for Reading Literacy: Straight National Scores in the PISA 2000 Study. *IZA Discussion Paper*, 545.
- Fuchs, T., Woessmann, L., 2007. What Accounts for International Differences in Student Performance? A Re-Examination Using PISA Data. *Empirical Economics*, 32 (2-3), 433-464.
- Fuentes, A. 2009. Raising Education Outcomes in Spain. *OECD Economics Department Working Papers*, 666, OECD.
- Garcia, J.I., Hidalgo, M. Robles, J.A., 2010. "Does grade retention play any role on accounting for the differences in PISA test scores across Spanish regions. *Working paper, Universidad Pablo Olavide*.
- Goldstein, H., 1995. *Multilevel statistical models*, (2nd edition), Wiley Publishers, New York.
- Hanushek, E.A., Woessman, L., 2005. Does Educational Track-ing Affect Performance and Inequality? Differences-In-Differences Evidence Across Countries. *NBER Working Paper*, No. 11124.
- Hanushek, E.A., Woessman, L., 2010. The economics of international differences in educational achievement. *NBER Working Paper n. 15949*.
- Invalsi, 2010. *La prova nazionale al termine del primo ciclo, 2009/10 (The results of the national examination at the end of lower secondary education, 2009/10)*. Istituto Nazionale per la Valutazione del Sistema di Istruzione e Formazione, Roma.
- Lamb, S., Fullarton, S., 2001. Classroom and school factors affecting mathematics achievement: a comparative study of the US and Australia using TIMSS. *Australian Council for Educational Research*, available online at http://research.acer.edu.au/timss_monographs/10.
- OECD, 2007. *PISA2006 Technical Report*, Paris: OECD.
- OECD, 2009. *PISA Data Analysis Manual, SPSS 2nd edition*, Paris: Oecd.
- Mora, T., Escaribul, J.O. Espasa, M., 2010. The effects of regional educational policies on school failure in Spain. *Revista de Economia Aplicada*, 54, 79-106.

- Perelman, S. Santin, D., 2011. Measuring educational efficiency at student level with parametric stochastic distance functions: an application to Spanish PISA results. *Education Economics*, 19(1), 29-49.
- Quintano, C., Castellano, R. Longobardi, S., 2009. L'influenza dei fattori socio economici sulle competenze degli studenti italiani. Un'analisi multilevel dei dati PISA 2006. *Rivista di Economia e Statistica del Territorio*, forthcoming.
- Raitano, M. and Vona, F., 2010. Peer heterogeneity, parental background and tracking: Evidence from PISA 2006. *Document de travail de OFCE*, 2010-23.
- Ritter, G.W., Barnett, J.H., Denny, G.S. and Albin, G.R., 2009. The Effectiveness of Volunteer Tutoring Programs for Elementary and Middle School Students: A Meta-Analysis. *Review of Educational Research*, 79 (1), 3-38.
- Tramonte, L., 2004. *Nell'Italia dei quindicenni, un'esplorazione delle differenze territoriali nelle competenze alfabetiche funzionali. Come si modellano le abilità nella lettura rilevate dall' ricerca OECD-PISA 2000 secondo le componenti economiche, culturali e sociali del background degli studenti*. unpublished PhD Dissertation, University of Milan.
- Wilson, P. W., 2005. *Efficiency in Education Production among PISA Countries, with Emphasis on Transition Economies*. mimeo, Austin, TX: Department of Economics, University of Texas.
- Woessman, L., 2003. Schooling resources, educational institutions and student performance: The international evidence. *Oxford Bulletin of Economic Studies*, 65, 117-170.
- Woessman, L., 2007. Fundamental Determinants of School Efficiency and Equity: German States as a Microcosm for OECD countries. *CESifo Working Paper 1981*.
- Wolter, S. C., Vellacott, M. C., 2003. Sibling Rivalry for Parental Resources: A Problem for Equity in Education? A Six-Country Comparison with PISA Data. *Swiss Journal of Sociology*, 29 (3), 377-398.
- Zinovyeva, N., Felgueroso, F. Vázquez, P. 2008. Immigration and Students' Achievement in Spain. *Documento de Trabajo 2008-07*, Fundación de Estudios de Economía Aplicada (FEDEA).

FUNDACIÓN DE LAS CAJAS DE AHORROS

DOCUMENTOS DE TRABAJO

Últimos números publicados

- | | |
|----------|--|
| 159/2000 | Participación privada en la construcción y explotación de carreteras de peaje
Ginés de Rus, Manuel Romero y Lourdes Trujillo |
| 160/2000 | Errores y posibles soluciones en la aplicación del <i>Value at Risk</i>
Mariano González Sánchez |
| 161/2000 | Tax neutrality on saving assets. The spanish case before and after the tax reform
Cristina Ruza y de Paz-Curbera |
| 162/2000 | Private rates of return to human capital in Spain: new evidence
F. Barceinas, J. Oliver-Alonso, J.L. Raymond y J.L. Roig-Sabaté |
| 163/2000 | El control interno del riesgo. Una propuesta de sistema de límites
riesgo neutral
Mariano González Sánchez |
| 164/2001 | La evolución de las políticas de gasto de las Administraciones Públicas en los años 90
Alfonso Utrilla de la Hoz y Carmen Pérez Esparrells |
| 165/2001 | Bank cost efficiency and output specification
Emili Tortosa-Ausina |
| 166/2001 | Recent trends in Spanish income distribution: A robust picture of falling income inequality
Josep Oliver-Alonso, Xavier Ramos y José Luis Raymond-Bara |
| 167/2001 | Efectos redistributivos y sobre el bienestar social del tratamiento de las cargas familiares en
el nuevo IRPF
Nuria Badenes Plá, Julio López Laborda, Jorge Onrubia Fernández |
| 168/2001 | The Effects of Bank Debt on Financial Structure of Small and Medium Firms in some Euro-
pean Countries
Mónica Melle-Hernández |
| 169/2001 | La política de cohesión de la UE ampliada: la perspectiva de España
Ismael Sanz Labrador |
| 170/2002 | Riesgo de liquidez de Mercado
Mariano González Sánchez |
| 171/2002 | Los costes de administración para el afiliado en los sistemas de pensiones basados en cuentas
de capitalización individual: medida y comparación internacional.
José Enrique Devesa Carpio, Rosa Rodríguez Barrera, Carlos Vidal Meliá |
| 172/2002 | La encuesta continua de presupuestos familiares (1985-1996): descripción, representatividad
y propuestas de metodología para la explotación de la información de los ingresos y el gasto.
Llorenç Pou, Joaquín Alegre |
| 173/2002 | Modelos paramétricos y no paramétricos en problemas de concesión de tarjetas de credito.
Rosa Puertas, María Bonilla, Ignacio Olmeda |

- 174/2002 Mercado único, comercio intra-industrial y costes de ajuste en las manufacturas españolas.
José Vicente Blanes Cristóbal
- 175/2003 La Administración tributaria en España. Un análisis de la gestión a través de los ingresos y de los gastos.
Juan de Dios Jiménez Aguilera, Pedro Enrique Barrilao González
- 176/2003 The Falling Share of Cash Payments in Spain.
Santiago Carbó Valverde, Rafael López del Paso, David B. Humphrey
Publicado en "Moneda y Crédito" nº 217, pags. 167-189.
- 177/2003 Effects of ATMs and Electronic Payments on Banking Costs: The Spanish Case.
Santiago Carbó Valverde, Rafael López del Paso, David B. Humphrey
- 178/2003 Factors explaining the interest margin in the banking sectors of the European Union.
Joaquín Maudos y Juan Fernández Guevara
- 179/2003 Los planes de stock options para directivos y consejeros y su valoración por el mercado de valores en España.
Mónica Melle Hernández
- 180/2003 Ownership and Performance in Europe and US Banking – A comparison of Commercial, Co-operative & Savings Banks.
Yener Altunbas, Santiago Carbó y Phil Molyneux
- 181/2003 The Euro effect on the integration of the European stock markets.
Mónica Melle Hernández
- 182/2004 In search of complementarity in the innovation strategy: international R&D and external knowledge acquisition.
Bruno Cassiman, Reinhilde Veugelers
- 183/2004 Fijación de precios en el sector público: una aplicación para el servicio municipal de suministro de agua.
M^a Ángeles García Valiñas
- 184/2004 Estimación de la economía sumergida en España: un modelo estructural de variables latentes.
Ángel Alañón Pardo, Miguel Gómez de Antonio
- 185/2004 Causas políticas y consecuencias sociales de la corrupción.
Joan Oriol Prats Cabrera
- 186/2004 Loan bankers' decisions and sensitivity to the audit report using the belief revision model.
Andrés Guiral Contreras and José A. Gonzalo Angulo
- 187/2004 El modelo de Black, Derman y Toy en la práctica. Aplicación al mercado español.
Marta Tolentino García-Abadillo y Antonio Díaz Pérez
- 188/2004 Does market competition make banks perform well?.
Mónica Melle
- 189/2004 Efficiency differences among banks: external, technical, internal, and managerial
Santiago Carbó Valverde, David B. Humphrey y Rafael López del Paso

- 190/2004 Una aproximación al análisis de los costes de la esquizofrenia en España: los modelos jerárquicos bayesianos
F. J. Vázquez-Polo, M. A. Negrín, J. M. Cavasés, E. Sánchez y grupo RIRAG
- 191/2004 Environmental proactivity and business performance: an empirical analysis
Javier González-Benito y Óscar González-Benito
- 192/2004 Economic risk to beneficiaries in notional defined contribution accounts (NDCs)
Carlos Vidal-Meliá, Inmaculada Domínguez-Fabian y José Enrique Devesa-Carpio
- 193/2004 Sources of efficiency gains in port reform: non parametric malmquist decomposition tfp index for Mexico
Antonio Estache, Beatriz Tovar de la Fé y Lourdes Trujillo
- 194/2004 Persistencia de resultados en los fondos de inversión españoles
Alfredo Ciriaco Fernández y Rafael Santamaría Aquilué
- 195/2005 El modelo de revisión de creencias como aproximación psicológica a la formación del juicio del auditor sobre la gestión continuada
Andrés Guiral Contreras y Francisco Esteso Sánchez
- 196/2005 La nueva financiación sanitaria en España: descentralización y prospectiva
David Cantarero Prieto
- 197/2005 A cointegration analysis of the Long-Run supply response of Spanish agriculture to the common agricultural policy
José A. Mendez, Ricardo Mora y Carlos San Juan
- 198/2005 ¿Refleja la estructura temporal de los tipos de interés del mercado español preferencia por la liquidez?
Magdalena Massot Perelló y Juan M. Nave
- 199/2005 Análisis de impacto de los Fondos Estructurales Europeos recibidos por una economía regional: Un enfoque a través de Matrices de Contabilidad Social
M. Carmen Lima y M. Alejandro Cardenete
- 200/2005 Does the development of non-cash payments affect monetary policy transmission?
Santiago Carbó Valverde y Rafael López del Paso
- 201/2005 Firm and time varying technical and allocative efficiency: an application for port cargo handling firms
Ana Rodríguez-Álvarez, Beatriz Tovar de la Fe y Lourdes Trujillo
- 202/2005 Contractual complexity in strategic alliances
Jeffrey J. Reuer y Africa Ariño
- 203/2005 Factores determinantes de la evolución del empleo en las empresas adquiridas por opa
Nuria Alcalde Fradejas y Inés Pérez-Soba Aguilar
- 204/2005 Nonlinear Forecasting in Economics: a comparison between Comprehension Approach versus Learning Approach. An Application to Spanish Time Series
Elena Olmedo, Juan M. Valderas, Ricardo Gimeno and Lorenzo Escot

- 205/2005 Precio de la tierra con presión urbana: un modelo para España
Esther Decimavilla, Carlos San Juan y Stefan Sperlich
- 206/2005 Interregional migration in Spain: a semiparametric analysis
Adolfo Maza y José Villaverde
- 207/2005 Productivity growth in European banking
Carmen Murillo-Melchor, José Manuel Pastor y Emili Tortosa-Ausina
- 208/2005 Explaining Bank Cost Efficiency in Europe: Environmental and Productivity Influences.
Santiago Carbó Valverde, David B. Humphrey y Rafael López del Paso
- 209/2005 La elasticidad de sustitución intertemporal con preferencias no separables intratemporalmente: los casos de Alemania, España y Francia.
Elena Márquez de la Cruz, Ana R. Martínez Cañete y Inés Pérez-Soba Aguilar
- 210/2005 Contribución de los efectos tamaño, book-to-market y momentum a la valoración de activos: el caso español.
Begoña Font-Belaire y Alfredo Juan Grau-Grau
- 211/2005 Permanent income, convergence and inequality among countries
José M. Pastor and Lorenzo Serrano
- 212/2005 The Latin Model of Welfare: Do ‘Insertion Contracts’ Reduce Long-Term Dependence?
Luis Ayala and Magdalena Rodríguez
- 213/2005 The effect of geographic expansion on the productivity of Spanish savings banks
Manuel Illueca, José M. Pastor and Emili Tortosa-Ausina
- 214/2005 Dynamic network interconnection under consumer switching costs
Ángel Luis López Rodríguez
- 215/2005 La influencia del entorno socioeconómico en la realización de estudios universitarios: una aproximación al caso español en la década de los noventa
Marta Rahona López
- 216/2005 The valuation of spanish ipos: efficiency analysis
Susana Álvarez Otero
- 217/2005 On the generation of a regular multi-input multi-output technology using parametric output distance functions
Sergio Perelman and Daniel Santin
- 218/2005 La gobernanza de los procesos parlamentarios: la organización industrial del congreso de los diputados en España
Gonzalo Caballero Miguez
- 219/2005 Determinants of bank market structure: Efficiency and political economy variables
Francisco González
- 220/2005 Agresividad de las órdenes introducidas en el mercado español: estrategias, determinantes y medidas de performance
David Abad Díaz

- 221/2005 Tendencia post-anuncio de resultados contables: evidencia para el mercado español
Carlos Forner Rodríguez, Joaquín Marhuenda Fructuoso y Sonia Sanabria García
- 222/2005 Human capital accumulation and geography: empirical evidence in the European Union
Jesús López-Rodríguez, J. Andrés Faiña y Jose Lopez Rodríguez
- 223/2005 Auditors' Forecasting in Going Concern Decisions: Framing, Confidence and Information Processing
Waymond Rodgers and Andrés Guiral
- 224/2005 The effect of Structural Fund spending on the Galician region: an assessment of the 1994-1999 and 2000-2006 Galician CSFs
José Ramón Cancelo de la Torre, J. Andrés Faiña and Jesús López-Rodríguez
- 225/2005 The effects of ownership structure and board composition on the audit committee activity: Spanish evidence
Carlos Fernández Méndez and Rubén Arrondo García
- 226/2005 Cross-country determinants of bank income smoothing by managing loan loss provisions
Ana Rosa Fonseca and Francisco González
- 227/2005 Incumplimiento fiscal en el irpf (1993-2000): un análisis de sus factores determinantes
Alejandro Estellér Moré
- 228/2005 Region versus Industry effects: volatility transmission
Pilar Soriano Felipe and Francisco J. Climent Diranzo
- 229/2005 Concurrent Engineering: The Moderating Effect Of Uncertainty On New Product Development Success
Daniel Vázquez-Bustelo and Sandra Valle
- 230/2005 On zero lower bound traps: a framework for the analysis of monetary policy in the 'age' of central banks
Alfonso Palacio-Vera
- 231/2005 Reconciling Sustainability and Discounting in Cost Benefit Analysis: a methodological proposal
M. Carmen Almansa Sáez and Javier Calatrava Requena
- 232/2005 Can The Excess Of Liquidity Affect The Effectiveness Of The European Monetary Policy?
Santiago Carbó Valverde and Rafael López del Paso
- 233/2005 Inheritance Taxes In The Eu Fiscal Systems: The Present Situation And Future Perspectives.
Miguel Angel Barberán Lahuerta
- 234/2006 Bank Ownership And Informativeness Of Earnings.
Víctor M. González
- 235/2006 Developing A Predictive Method: A Comparative Study Of The Partial Least Squares Vs Maximum Likelihood Techniques.
Waymond Rodgers, Paul Pavlou and Andres Guiral.
- 236/2006 Using Compromise Programming for Macroeconomic Policy Making in a General Equilibrium Framework: Theory and Application to the Spanish Economy.
Francisco J. André, M. Alejandro Cardenete y Carlos Romero.

- 237/2006 Bank Market Power And Sme Financing Constraints.
Santiago Carbó-Valverde, Francisco Rodríguez-Fernández y Gregory F. Udell.
- 238/2006 Trade Effects Of Monetary Agreements: Evidence For Oecd Countries.
Salvador Gil-Pareja, Rafael Llorca-Vivero y José Antonio Martínez-Serrano.
- 239/2006 The Quality Of Institutions: A Genetic Programming Approach.
Marcos Álvarez-Díaz y Gonzalo Caballero Miguez.
- 240/2006 La interacción entre el éxito competitivo y las condiciones del mercado doméstico como determinantes de la decisión de exportación en las Pymes.
Francisco García Pérez.
- 241/2006 Una estimación de la depreciación del capital humano por sectores, por ocupación y en el tiempo.
Inés P. Murillo.
- 242/2006 Consumption And Leisure Externalities, Economic Growth And Equilibrium Efficiency.
Manuel A. Gómez.
- 243/2006 Measuring efficiency in education: an analysis of different approaches for incorporating non-discretionary inputs.
Jose Manuel Cordero-Ferrera, Francisco Pedraja-Chaparro y Javier Salinas-Jiménez
- 244/2006 Did The European Exchange-Rate Mechanism Contribute To The Integration Of Peripheral Countries?.
Salvador Gil-Pareja, Rafael Llorca-Vivero y José Antonio Martínez-Serrano
- 245/2006 Intergenerational Health Mobility: An Empirical Approach Based On The Echp.
Marta Pascual and David Cantarero
- 246/2006 Measurement and analysis of the Spanish Stock Exchange using the Lyapunov exponent with digital technology.
Salvador Rojí Ferrari and Ana Gonzalez Marcos
- 247/2006 Testing For Structural Breaks In Variance With additive Outliers And Measurement Errors.
Paulo M.M. Rodrigues and Antonio Rubia
- 248/2006 The Cost Of Market Power In Banking: Social Welfare Loss Vs. Cost Inefficiency.
Joaquín Maudos and Juan Fernández de Guevara
- 249/2006 Elasticidades de largo plazo de la demanda de vivienda: evidencia para España (1885-2000).
Desiderio Romero Jordán, José Félix Sanz Sanz y César Pérez López
- 250/2006 Regional Income Disparities in Europe: What role for location?.
Jesús López-Rodríguez and J. Andrés Faíña
- 251/2006 Funciones abreviadas de bienestar social: Una forma sencilla de simultaneizar la medición de la eficiencia y la equidad de las políticas de gasto público.
Nuria Badenes Plá y Daniel Santín González
- 252/2006 "The momentum effect in the Spanish stock market: Omitted risk factors or investor behaviour?".
Luis Muga and Rafael Santamaría
- 253/2006 Dinámica de precios en el mercado español de gasolina: un equilibrio de colusión tácita.
Jordi Perdigueró García

- 254/2006 Desigualdad regional en España: renta permanente versus renta corriente.
José M. Pastor, Empar Pons y Lorenzo Serrano
- 255/2006 Environmental implications of organic food preferences: an application of the impure public goods model.
Ana Maria Aldanondo-Ochoa y Carmen Almansa-Sáez
- 256/2006 Family tax credits versus family allowances when labour supply matters: Evidence for Spain.
José Felix Sanz-Sanz, Desiderio Romero-Jordán y Santiago Álvarez-García
- 257/2006 La internacionalización de la empresa manufacturera española: efectos del capital humano genérico y específico.
José López Rodríguez
- 258/2006 Evaluación de las migraciones interregionales en España, 1996-2004.
María Martínez Torres
- 259/2006 Efficiency and market power in Spanish banking.
Rolf Färe, Shawna Grosskopf y Emili Tortosa-Ausina.
- 260/2006 Asimetrías en volatilidad, beta y contagios entre las empresas grandes y pequeñas cotizadas en la bolsa española.
Helena Chuliá y Hipòlit Torró.
- 261/2006 Birth Replacement Ratios: New Measures of Period Population Replacement.
José Antonio Ortega.
- 262/2006 Accidentes de tráfico, víctimas mortales y consumo de alcohol.
José M^a Arranz y Ana I. Gil.
- 263/2006 Análisis de la Presencia de la Mujer en los Consejos de Administración de las Mil Mayores Empresas Españolas.
Ruth Mateos de Cabo, Lorenzo Escot Mangas y Ricardo Gimeno Nogués.
- 264/2006 Crisis y Reforma del Pacto de Estabilidad y Crecimiento. Las Limitaciones de la Política Económica en Europa.
Ignacio Álvarez Peralta.
- 265/2006 Have Child Tax Allowances Affected Family Size? A Microdata Study For Spain (1996-2000).
Jaime Vallés-Giménez y Anabel Zárate-Marco.
- 266/2006 Health Human Capital And The Shift From Foraging To Farming.
Paolo Rungo.
- 267/2006 Financiación Autonómica y Política de la Competencia: El Mercado de Gasolina en Canarias.
Juan Luis Jiménez y Jordi Perdiguero.
- 268/2006 El cumplimiento del Protocolo de Kyoto para los hogares españoles: el papel de la imposición sobre la energía.
Desiderio Romero-Jordán y José Félix Sanz-Sanz.
- 269/2006 Banking competition, financial dependence and economic growth
Joaquín Maudos y Juan Fernández de Guevara
- 270/2006 Efficiency, subsidies and environmental adaptation of animal farming under CAP
Werner Kleinhanß, Carmen Murillo, Carlos San Juan y Stefan Sperlich

- 271/2006 Interest Groups, Incentives to Cooperation and Decision-Making Process in the European Union
A. García-Lorenzo y Jesús López-Rodríguez
- 272/2006 Riesgo asimétrico y estrategias de momentum en el mercado de valores español
Luis Muga y Rafael Santamaría
- 273/2006 Valoración de capital-riesgo en proyectos de base tecnológica e innovadora a través de la teoría de opciones reales
Gracia Rubio Martín
- 274/2006 Capital stock and unemployment: searching for the missing link
Ana Rosa Martínez-Cañete, Elena Márquez de la Cruz, Alfonso Palacio-Vera and Inés Pérez-Soba Aguilar
- 275/2006 Study of the influence of the voters' political culture on vote decision through the simulation of a political competition problem in Spain
Sagrario Lantarón, Isabel Lillo, M^a Dolores López and Javier Rodrigo
- 276/2006 Investment and growth in Europe during the Golden Age
Antonio Cubel and M^a Teresa Sanchis
- 277/2006 Efectos de vincular la pensión pública a la inversión en cantidad y calidad de hijos en un modelo de equilibrio general
Robert Meneu Gaya
- 278/2006 El consumo y la valoración de activos
Elena Márquez y Belén Nieto
- 279/2006 Economic growth and currency crisis: A real exchange rate entropic approach
David Matesanz Gómez y Guillermo J. Ortega
- 280/2006 Three measures of returns to education: An illustration for the case of Spain
María Arrazola y José de Hevia
- 281/2006 Composition of Firms versus Composition of Jobs
Antoni Cunyat
- 282/2006 La vocación internacional de un holding tranviario belga: la Compagnie Mutuelle de Tramways, 1895-1918
Alberte Martínez López
- 283/2006 Una visión panorámica de las entidades de crédito en España en la última década.
Constantino García Ramos
- 284/2006 Foreign Capital and Business Strategies: a comparative analysis of urban transport in Madrid and Barcelona, 1871-1925
Alberte Martínez López
- 285/2006 Los intereses belgas en la red ferroviaria catalana, 1890-1936
Alberte Martínez López
- 286/2006 The Governance of Quality: The Case of the Agrifood Brand Names
Marta Fernández Barcala, Manuel González-Díaz y Emmanuel Raynaud
- 287/2006 Modelling the role of health status in the transition out of malthusian equilibrium
Paolo Rungo, Luis Currais and Berta Rivera
- 288/2006 Industrial Effects of Climate Change Policies through the EU Emissions Trading Scheme
Xavier Labandeira and Miguel Rodríguez

- 289/2006 Globalisation and the Composition of Government Spending: An analysis for OECD countries
Norman Gemmell, Richard Kneller and Ismael Sanz
- 290/2006 La producción de energía eléctrica en España: Análisis económico de la actividad tras la liberalización del Sector Eléctrico
Fernando Hernández Martínez
- 291/2006 Further considerations on the link between adjustment costs and the productivity of R&D investment: evidence for Spain
Desiderio Romero-Jordán, José Félix Sanz-Sanz and Inmaculada Álvarez-Ayuso
- 292/2006 Una teoría sobre la contribución de la función de compras al rendimiento empresarial
Javier González Benito
- 293/2006 Agility drivers, enablers and outcomes: empirical test of an integrated agile manufacturing model
Daniel Vázquez-Bustelo, Lucía Avella and Esteban Fernández
- 294/2006 Testing the parametric vs the semiparametric generalized mixed effects models
María José Lombardía and Stefan Sperlich
- 295/2006 Nonlinear dynamics in energy futures
Mariano Matilla-García
- 296/2006 Estimating Spatial Models By Generalized Maximum Entropy Or How To Get Rid Of W
Esteban Fernández Vázquez, Matías Mayor Fernández and Jorge Rodríguez-Valez
- 297/2006 Optimización fiscal en las transmisiones lucrativas: análisis metodológico
Félix Domínguez Barrero
- 298/2006 La situación actual de la banca online en España
Francisco José Climent Diranzo y Alexandre Momparler Pechuán
- 299/2006 Estrategia competitiva y rendimiento del negocio: el papel mediador de la estrategia y las capacidades productivas
Javier González Benito y Isabel Suárez González
- 300/2006 A Parametric Model to Estimate Risk in a Fixed Income Portfolio
Pilar Abad and Sonia Benito
- 301/2007 Análisis Empírico de las Preferencias Sociales Respecto del Gasto en Obra Social de las Cajas de Ahorros
Alejandro Esteller-Moré, Jonathan Jorba Jiménez y Albert Solé-Ollé
- 302/2007 Assessing the enlargement and deepening of regional trading blocs: The European Union case
Salvador Gil-Pareja, Rafael Llorca-Vivero y José Antonio Martínez-Serrano
- 303/2007 ¿Es la Franquicia un Medio de Financiación?: Evidencia para el Caso Español
Vanessa Solís Rodríguez y Manuel González Díaz
- 304/2007 On the Finite-Sample Biases in Nonparametric Testing for Variance Constancy
Paulo M.M. Rodrigues and Antonio Rubia
- 305/2007 Spain is Different: Relative Wages 1989-98
José Antonio Carrasco Gallego

- 306/2007 Poverty reduction and SAM multipliers: An evaluation of public policies in a regional framework
Francisco Javier De Miguel-Vélez y Jesús Pérez-Mayo
- 307/2007 La Eficiencia en la Gestión del Riesgo de Crédito en las Cajas de Ahorro
Marcelino Martínez Cabrera
- 308/2007 Optimal environmental policy in transport: unintended effects on consumers' generalized price
M. Pilar Socorro and Ofelia Betancor
- 309/2007 Agricultural Productivity in the European Regions: Trends and Explanatory Factors
Roberto Ezcurra, Belen Iraizoz, Pedro Pascual and Manuel Rapún
- 310/2007 Long-run Regional Population Divergence and Modern Economic Growth in Europe: a Case Study of Spain
María Isabel Ayuda, Fernando Collantes and Vicente Pinilla
- 311/2007 Financial Information effects on the measurement of Commercial Banks' Efficiency
Borja Amor, María T. Tascón and José L. Fanjul
- 312/2007 Neutralidad e incentivos de las inversiones financieras en el nuevo IRPF
Félix Domínguez Barrero
- 313/2007 The Effects of Corporate Social Responsibility Perceptions on The Valuation of Common Stock
Waymond Rodgers , Helen Choy and Andres Guiral-Contreras
- 314/2007 Country Creditor Rights, Information Sharing and Commercial Banks' Profitability Persistence across the world
Borja Amor, María T. Tascón and José L. Fanjul
- 315/2007 ¿Es Relevante el Déficit Corriente en una Unión Monetaria? El Caso Español
Javier Blanco González y Ignacio del Rosal Fernández
- 316/2007 The Impact of Credit Rating Announcements on Spanish Corporate Fixed Income Performance: Returns, Yields and Liquidity
Pilar Abad, Antonio Díaz and M. Dolores Robles
- 317/2007 Indicadores de Lealtad al Establecimiento y Formato Comercial Basados en la Distribución del Presupuesto
Cesar Augusto Bustos Reyes y Óscar González Benito
- 318/2007 Migrants and Market Potential in Spain over The XXth Century: A Test Of The New Economic Geography
Daniel A. Tirado, Jordi Pons, Elisenda Paluzie and Javier Silvestre
- 319/2007 El Impacto del Coste de Oportunidad de la Actividad Emprendedora en la Intención de los Ciudadanos Europeos de Crear Empresas
Luis Miguel Zapico Aldeano
- 320/2007 Los belgas y los ferrocarriles de vía estrecha en España, 1887-1936
Alberte Martínez López
- 321/2007 Competición política bipartidista. Estudio geométrico del equilibrio en un caso ponderado
Isabel Lillo, M^a Dolores López y Javier Rodrigo
- 322/2007 Human resource management and environment management systems: an empirical study
M^a Concepción López Fernández, Ana M^a Serrano Bedia and Gema García Piqueres

- 323/2007 Wood and industrialization. evidence and hypotheses from the case of Spain, 1860-1935.
Iñaki Iriarte-Goñi and María Isabel Ayuda Bosque
- 324/2007 New evidence on long-run monetary neutrality.
J. Cunado, L.A. Gil-Alana and F. Perez de Gracia
- 325/2007 Monetary policy and structural changes in the volatility of us interest rates.
Juncal Cuñado, Javier Gomez Biscarri and Fernando Perez de Gracia
- 326/2007 The productivity effects of intrafirm diffusion.
Lucio Fuentelsaz, Jaime Gómez and Sergio Palomas
- 327/2007 Unemployment duration, layoffs and competing risks.
J.M. Arranz, C. García-Serrano and L. Toharia
- 328/2007 El grado de cobertura del gasto público en España respecto a la UE-15
Nuria Rueda, Begoña Barruso, Carmen Calderón y M^a del Mar Herrador
- 329/2007 The Impact of Direct Subsidies in Spain before and after the CAP'92 Reform
Carmen Murillo, Carlos San Juan and Stefan Sperlich
- 330/2007 Determinants of post-privatisation performance of Spanish divested firms
Laura Cabeza García and Silvia Gómez Ansón
- 331/2007 ¿Por qué deciden diversificar las empresas españolas? Razones oportunistas versus razones económicas
Almudena Martínez Campillo
- 332/2007 Dynamical Hierarchical Tree in Currency Markets
Juan Gabriel Brida, David Matesanz Gómez and Wiston Adrián Risso
- 333/2007 Los determinantes sociodemográficos del gasto sanitario. Análisis con microdatos individuales
Ana María Angulo, Ramón Barberán, Pilar Egea y Jesús Mur
- 334/2007 Why do companies go private? The Spanish case
Inés Pérez-Soba Aguilar
- 335/2007 The use of gis to study transport for disabled people
Verónica Cañal Fernández
- 336/2007 The long run consequences of M&A: An empirical application
Cristina Bernad, Lucio Fuentelsaz and Jaime Gómez
- 337/2007 Las clasificaciones de materias en economía: principios para el desarrollo de una nueva clasificación
Valentín Edo Hernández
- 338/2007 Reforming Taxes and Improving Health: A Revenue-Neutral Tax Reform to Eliminate Medical and Pharmaceutical VAT
Santiago Álvarez-García, Carlos Pestana Barros y Juan Prieto-Rodriguez
- 339/2007 Impacts of an iron and steel plant on residential property values
Celia Bilbao-Terol
- 340/2007 Firm size and capital structure: Evidence using dynamic panel data
Victor M. González and Francisco González

- 341/2007 ¿Cómo organizar una cadena hotelera? La elección de la forma de gobierno
Marta Fernández Barcala y Manuel González Díaz
- 342/2007 Análisis de los efectos de la decisión de diversificar: un contraste del marco teórico “Agencia-Stewardship”
Almudena Martínez Campillo y Roberto Fernández Gago
- 343/2007 Selecting portfolios given multiple eurostoxx-based uncertainty scenarios: a stochastic goal programming approach from fuzzy betas
Enrique Ballester, Blanca Pérez-Gladish, Mar Arenas-Parra and Amelia Bilbao-Terol
- 344/2007 “El bienestar de los inmigrantes y los factores implicados en la decisión de emigrar”
Anastasia Hernández Alemán y Carmelo J. León
- 345/2007 Governance Decisions in the R&D Process: An Integrative Framework Based on TCT and Knowledge View of The Firm.
Andrea Martínez-Noya and Esteban García-Canal
- 346/2007 Diferencias salariales entre empresas públicas y privadas. El caso español
Begoña Cueto y Nuria Sánchez- Sánchez
- 347/2007 Effects of Fiscal Treatments of Second Home Ownership on Renting Supply
Celia Bilbao Terol and Juan Prieto Rodríguez
- 348/2007 Auditors’ ethical dilemmas in the going concern evaluation
Andres Guiral, Waymond Rodgers, Emiliano Ruiz and Jose A. Gonzalo
- 349/2007 Convergencia en capital humano en España. Un análisis regional para el periodo 1970-2004
Susana Morales Sequera y Carmen Pérez Esparrells
- 350/2007 Socially responsible investment: mutual funds portfolio selection using fuzzy multiobjective programming
Blanca M^a Pérez-Gladish, Mar Arenas-Parra , Amelia Bilbao-Terol and M^a Victoria Rodríguez-Uría
- 351/2007 Persistencia del resultado contable y sus componentes: implicaciones de la medida de ajustes por devengo
Raúl Iñiguez Sánchez y Francisco Poveda Fuentes
- 352/2007 Wage Inequality and Globalisation: What can we Learn from the Past? A General Equilibrium Approach
Concha Betrán, Javier Ferri and Maria A. Pons
- 353/2007 Eficacia de los incentivos fiscales a la inversión en I+D en España en los años noventa
Desiderio Romero Jordán y José Félix Sanz Sanz
- 354/2007 Convergencia regional en renta y bienestar en España
Robert Meneu Gaya
- 355/2007 Tributación ambiental: Estado de la Cuestión y Experiencia en España
Ana Carrera Poncela
- 356/2007 Salient features of dependence in daily us stock market indices
Luis A. Gil-Alana, Juncal Cuñado and Fernando Pérez de Gracia
- 357/2007 La educación superior: ¿un gasto o una inversión rentable para el sector público?
Inés P. Murillo y Francisco Pedraja

- 358/2007 Effects of a reduction of working hours on a model with job creation and job destruction
Emilio Domínguez, Miren Ullibarri y Idoia Zabaleta
- 359/2007 Stock split size, signaling and earnings management: Evidence from the Spanish market
José Yagüe, J. Carlos Gómez-Sala and Francisco Poveda-Fuentes
- 360/2007 Modelización de las expectativas y estrategias de inversión en mercados de derivados
Begoña Font-Belaire
- 361/2008 Trade in capital goods during the golden age, 1953-1973
M^a Teresa Sanchis and Antonio Cubel
- 362/2008 El capital económico por riesgo operacional: una aplicación del modelo de distribución de pérdidas
Enrique José Jiménez Rodríguez y José Manuel Fera Domínguez
- 363/2008 The drivers of effectiveness in competition policy
Joan-Ramon Borrell and Juan-Luis Jiménez
- 364/2008 Corporate governance structure and board of directors remuneration policies: evidence from Spain
Carlos Fernández Méndez, Rubén Arrondo García and Enrique Fernández Rodríguez
- 365/2008 Beyond the disciplinary role of governance: how boards and donors add value to Spanish foundations
Pablo De Andrés Alonso, Valentín Azofra Palenzuela y M. Elena Romero Merino
- 366/2008 Complejidad y perfeccionamiento contractual para la contención del oportunismo en los acuerdos de franquicia
Vanesa Solís Rodríguez y Manuel González Díaz
- 367/2008 Inestabilidad y convergencia entre las regiones europeas
Jesús Mur, Fernando López y Ana Angulo
- 368/2008 Análisis espacial del cierre de explotaciones agrarias
Ana Aldanondo Ochoa, Carmen Almansa Sáez y Valero Casanovas Oliva
- 369/2008 Cross-Country Efficiency Comparison between Italian and Spanish Public Universities in the period 2000-2005
Tommaso Agasisti and Carmen Pérez Esparrells
- 370/2008 El desarrollo de la sociedad de la información en España: un análisis por comunidades autónomas
María Concepción García Jiménez y José Luis Gómez Barroso
- 371/2008 El medioambiente y los objetivos de fabricación: un análisis de los modelos estratégicos para su consecución
Lucía Avella Camarero, Esteban Fernández Sánchez y Daniel Vázquez-Bustelo
- 372/2008 Influence of bank concentration and institutions on capital structure: New international evidence
Víctor M. González and Francisco González
- 373/2008 Generalización del concepto de equilibrio en juegos de competición política
M^a Dolores López González y Javier Rodrigo Hitos
- 374/2008 Smooth Transition from Fixed Effects to Mixed Effects Models in Multi-level regression Models
María José Lombardía and Stefan Sperlich

- 375/2008 A Revenue-Neutral Tax Reform to Increase Demand for Public Transport Services
Carlos Pestana Barros and Juan Prieto-Rodriguez
- 376/2008 Measurement of intra-distribution dynamics: An application of different approaches to the European regions
Adolfo Maza, María Hierro and José Villaverde
- 377/2008 Migración interna de extranjeros y ¿nueva fase en la convergencia?
María Hierro y Adolfo Maza
- 378/2008 Efectos de la Reforma del Sector Eléctrico: Modelización Teórica y Experiencia Internacional
Ciro Eduardo Bazán Navarro
- 379/2008 A Non-Parametric Independence Test Using Permutation Entropy
Mariano Matilla-García and Manuel Ruiz Marín
- 380/2008 Testing for the General Fractional Unit Root Hypothesis in the Time Domain
Uwe Hassler, Paulo M.M. Rodrigues and Antonio Rubia
- 381/2008 Multivariate gram-charlier densities
Esther B. Del Brio, Trino-Manuel Níguez and Javier Perote
- 382/2008 Analyzing Semiparametrically the Trends in the Gender Pay Gap - The Example of Spain
Ignacio Moral-Arce, Stefan Sperlich, Ana I. Fernández-Saínz and Maria J. Roca
- 383/2008 A Cost-Benefit Analysis of a Two-Sided Card Market
Santiago Carbó Valverde, David B. Humphrey, José Manuel Liñares Zegarra and Francisco Rodríguez Fernandez
- 384/2008 A Fuzzy Bicriteria Approach for Journal Deselection in a Hospital Library
M. L. López-Avello, M. V. Rodríguez-Uría, B. Pérez-Gladish, A. Bilbao-Terol, M. Arenas-Parra
- 385/2008 Valoración de las grandes corporaciones farmacéuticas, a través del análisis de sus principales intangibles, con el método de opciones reales
Gracia Rubio Martín y Prosper Lamothe Fernández
- 386/2008 El marketing interno como impulsor de las habilidades comerciales de las pyme españolas: efectos en los resultados empresariales
M^a Leticia Santos Vijande, M^a José Sanzo Pérez, Nuria García Rodríguez y Juan A. Trespalacios Gutiérrez
- 387/2008 Understanding Warrants Pricing: A case study of the financial market in Spain
David Abad y Belén Nieto
- 388/2008 Aglomeración espacial, Potencial de Mercado y Geografía Económica: Una revisión de la literatura
Jesús López-Rodríguez y J. Andrés Faíña
- 389/2008 An empirical assessment of the impact of switching costs and first mover advantages on firm performance
Jaime Gómez, Juan Pablo Maícas
- 390/2008 Tender offers in Spain: testing the wave
Ana R. Martínez-Cañete y Inés Pérez-Soba Aguilar

- 391/2008 La integración del mercado español a finales del siglo XIX: los precios del trigo entre 1891 y 1905
Mariano Matilla García, Pedro Pérez Pascual y Basilio Sanz Carnero
- 392/2008 Cuando el tamaño importa: estudio sobre la influencia de los sujetos políticos en la balanza de bienes y servicios
Alfonso Echazarra de Gregorio
- 393/2008 Una visión cooperativa de las medidas ante el posible daño ambiental de la desalación
Borja Montaña Sanz
- 394/2008 Efectos externos del endeudamiento sobre la calificación crediticia de las Comunidades Autónomas
Andrés Leal Marcos y Julio López Laborda
- 395/2008 Technical efficiency and productivity changes in Spanish airports: A parametric distance functions approach
Beatriz Tovar & Roberto Rendeiro Martín-Cejas
- 396/2008 Network analysis of exchange data: Interdependence drives crisis contagion
David Matesanz Gómez & Guillermo J. Ortega
- 397/2008 Explaining the performance of Spanish privatised firms: a panel data approach
Laura Cabeza Garcia and Silvia Gomez Anson
- 398/2008 Technological capabilities and the decision to outsource R&D services
Andrea Martínez-Noya and Esteban García-Canal
- 399/2008 Hybrid Risk Adjustment for Pharmaceutical Benefits
Manuel García-Goñi, Pere Ibern & José María Inoriza
- 400/2008 The Team Consensus–Performance Relationship and the Moderating Role of Team Diversity
José Henríque Dieguez, Javier González-Benito and Jesús Galende
- 401/2008 The institutional determinants of CO₂ emissions: A computational modelling approach using Artificial Neural Networks and Genetic Programming
Marcos Álvarez-Díaz , Gonzalo Caballero Miguez and Mario Soliño
- 402/2008 Alternative Approaches to Include Exogenous Variables in DEA Measures: A Comparison Using Monte Carlo
José Manuel Cordero-Ferrera, Francisco Pedraja-Chaparro and Daniel Santín-González
- 403/2008 Efecto diferencial del capital humano en el crecimiento económico andaluz entre 1985 y 2004: comparación con el resto de España
M^a del Pópulo Pablo-Romero Gil-Delgado y M^a de la Palma Gómez-Calero Valdés
- 404/2008 Análisis de fusiones, variaciones conjeturales y la falacia del estimador en diferencias
Juan Luis Jiménez y Jordi Perdiguerro
- 405/2008 Política fiscal en la uem: ¿basta con los estabilizadores automáticos?
Jorge Uxó González y M^a Jesús Arroyo Fernández
- 406/2008 Papel de la orientación emprendedora y la orientación al mercado en el éxito de las empresas
Óscar González-Benito, Javier González-Benito y Pablo A. Muñoz-Gallego
- 407/2008 La presión fiscal por impuesto sobre sociedades en la unión europea
Elena Fernández Rodríguez, Antonio Martínez Arias y Santiago Álvarez García

- 408/2008 The environment as a determinant factor of the purchasing and supply strategy: an empirical analysis
Dr. Javier González-Benito y MS Duilio Reis da Rocha
- 409/2008 Cooperation for innovation: the impact on innovatory effort
Gloria Sánchez González and Liliana Herrera
- 410/2008 Spanish post-earnings announcement drift and behavioral finance models
Carlos Forner and Sonia Sanabria
- 411/2008 Decision taking with external pressure: evidence on football manager dismissals in argentina and their consequences
Ramón Flores, David Forrest and Juan de Dios Tena
- 412/2008 Comercio agrario latinoamericano, 1963-2000: aplicación de la ecuación gravitacional para flujos desagregados de comercio
Raúl Serrano y Vicente Pinilla
- 413/2008 Voter heuristics in Spain: a descriptive approach elector decision
José Luís Sáez Lozano and Antonio M. Jaime Castillo
- 414/2008 Análisis del efecto área de salud de residencia sobre la utilización y acceso a los servicios sanitarios en la Comunidad Autónoma Canaria
Ignacio Abásolo Alessón, Lidia García Pérez, Raquel Aguiar Ibáñez y Asier Amador Robayna
- 415/2008 Impact on competitive balance from allowing foreign players in a sports league: an analytical model and an empirical test
Ramón Flores, David Forrest & Juan de Dios Tena
- 416/2008 Organizational innovation and productivity growth: Assessing the impact of outsourcing on firm performance
Alberto López
- 417/2008 Value Efficiency Analysis of Health Systems
Eduardo González, Ana Cárcaba & Juan Ventura
- 418/2008 Equidad en la utilización de servicios sanitarios públicos por comunidades autónomas en España: un análisis multinivel
Ignacio Abásolo, Jaime Pinilla, Miguel Negrín, Raquel Aguiar y Lidia García
- 419/2008 Piedras en el camino hacia Bolonia: efectos de la implantación del EEES sobre los resultados académicos
Carmen Florido, Juan Luis Jiménez e Isabel Santana
- 420/2008 The welfare effects of the allocation of airlines to different terminals
M. Pilar Socorro and Ofelia Betancor
- 421/2008 How bank capital buffers vary across countries. The influence of cost of deposits, market power and bank regulation
Ana Rosa Fonseca and Francisco González
- 422/2008 Analysing health limitations in Spain: an empirical approach based on the European community household panel
Marta Pascual and David Cantarero

- 423/2008 Regional productivity variation and the impact of public capital stock: an analysis with spatial interaction, with reference to Spain
Miguel Gómez-Antonio and Bernard Fingleton
- 424/2008 Average effect of training programs on the time needed to find a job. The case of the training schools program in the south of Spain (Seville, 1997-1999).
José Manuel Cansino Muñoz-Repiso and Antonio Sánchez Braza
- 425/2008 Medición de la eficiencia y cambio en la productividad de las empresas distribuidoras de electricidad en Perú después de las reformas
Raúl Pérez-Reyes y Beatriz Tovar
- 426/2008 Acercando posturas sobre el descuento ambiental: sondeo Delphi a expertos en el ámbito internacional
Carmen Almansa Sáez y José Miguel Martínez Paz
- 427/2008 Determinants of abnormal liquidity after rating actions in the Corporate Debt Market
Pilar Abad, Antonio Díaz and M. Dolores Robles
- 428/2008 Export led-growth and balance of payments constrained. New formalization applied to Cuban commercial regimes since 1960
David Matesanz Gómez, Guadalupe Fugarolas Álvarez-Ude and Isis Mañalich Gálvez
- 429/2008 La deuda implícita y el desequilibrio financiero-actuarial de un sistema de pensiones. El caso del régimen general de la seguridad social en España
José Enrique Devesa Carpio y Mar Devesa Carpio
- 430/2008 Efectos de la descentralización fiscal sobre el precio de los carburantes en España
Desiderio Romero Jordán, Marta Jorge García-Inés y Santiago Álvarez García
- 431/2008 Euro, firm size and export behavior
Silviano Esteve-Pérez, Salvador Gil-Pareja, Rafael Llorca-Vivero and José Antonio Martínez-Serrano
- 432/2008 Does social spending increase support for free trade in advanced democracies?
Ismael Sanz, Ferran Martínez i Coma and Federico Steinberg
- 433/2008 Potencial de Mercado y Estructura Espacial de Salarios: El Caso de Colombia
Jesús López-Rodríguez y Maria Cecilia Acevedo
- 434/2008 Persistence in Some Energy Futures Markets
Juncal Cunado, Luis A. Gil-Alana and Fernando Pérez de Gracia
- 435/2008 La inserción financiera externa de la economía francesa: inversores institucionales y nueva gestión empresarial
Ignacio Álvarez Peralta
- 436/2008 ¿Flexibilidad o rigidez salarial en España?: un análisis a escala regional
Ignacio Moral Arce y Adolfo Maza Fernández
- 437/2009 Intangible relationship-specific investments and the performance of r&d outsourcing agreements
Andrea Martínez-Noya, Esteban García-Canal & Mauro F. Guillén
- 438/2009 Friendly or Controlling Boards?
Pablo de Andrés Alonso & Juan Antonio Rodríguez Sanz

- 439/2009 La sociedad Trenor y Cía. (1838-1926): un modelo de negocio industrial en la España del siglo XIX
Amparo Ruiz Llopis
- 440/2009 Continental bias in trade
Salvador Gil-Pareja, Rafael Llorca-Vivero & José Antonio Martínez Serrano
- 441/2009 Determining operational capital at risk: an empirical application to the retail banking
Enrique José Jiménez-Rodríguez, José Manuel Fera-Domínguez & José Luis Martín-Marín
- 442/2009 Costes de mitigación y escenarios post-kyoto en España: un análisis de equilibrio general para España
Mikel González Ruiz de Eguino
- 443/2009 Las revistas españolas de economía en las bibliotecas universitarias: ranking, valoración del indicador y del sistema
Valentín Edo Hernández
- 444/2009 Convergencia económica en España y coordinación de políticas económicas. un estudio basado en la estructura productiva de las CC.AA.
Ana Cristina Mingorance Arnáiz
- 445/2009 Instrumentos de mercado para reducir emisiones de co2: un análisis de equilibrio general para España
Mikel González Ruiz de Eguino
- 446/2009 El comercio intra e inter-regional del sector Turismo en España
Carlos Llano y Tamara de la Mata
- 447/2009 Efectos del incremento del precio del petróleo en la economía española: Análisis de cointegración y de la política monetaria mediante reglas de Taylor
Fernando Hernández Martínez
- 448/2009 Bologna Process and Expenditure on Higher Education: A Convergence Analysis of the EU-15
T. Agasisti, C. Pérez Esparrells, G. Catalano & S. Morales
- 449/2009 Global Economy Dynamics? Panel Data Approach to Spillover Effects
Gregory Daco, Fernando Hernández Martínez & Li-Wu Hsu
- 450/2009 Pricing levered warrants with dilution using observable variables
Isabel Abinzano & Javier F. Navas
- 451/2009 Information technologies and financial performance: The effect of technology diffusion among competitors
Lucio Fuentelsaz, Jaime Gómez & Sergio Palomas
- 452/2009 A Detailed Comparison of Value at Risk in International Stock Exchanges
Pilar Abad & Sonia Benito
- 453/2009 Understanding offshoring: has Spain been an offshoring location in the nineties?
Belén González-Díaz & Rosario Gandoy
- 454/2009 Outsourcing decision, product innovation and the spatial dimension: Evidence from the Spanish footwear industry
José Antonio Belso-Martínez

- 455/2009 Does playing several competitions influence a team's league performance? Evidence from Spanish professional football
Andrés J. Picazo-Tadeo & Francisco González-Gómez
- 456/2009 Does accessibility affect retail prices and competition? An empirical application
Juan Luis Jiménez and Jordi Perdigueró
- 457/2009 Cash conversion cycle in smes
Sonia Baños-Caballero, Pedro J. García-Teruel and Pedro Martínez-Solano
- 458/2009 Un estudio sobre el perfil de hogares endeudados y sobreendeudados: el caso de los hogares vascos
Alazne Mujika Alberdi, Iñaki García Arrizabalaga y Juan José Gibaja Martíns
- 459/2009 Imposing monotonicity on outputs in parametric distance function estimations: with an application to the spanish educational production
Sergio Perelman and Daniel Santin
- 460/2009 Key issues when using tax data for concentration analysis: an application to the Spanish wealth tax
José M^a Durán-Cabré and Alejandro Esteller-Moré
- 461/2009 ¿Se está rompiendo el mercado español? Una aplicación del enfoque de feldstein –horioka
Saúl De Vicente Queijeiro□, José Luis Pérez Rivero□ y María Rosalía Vicente Cuervo□
- 462/2009 Financial condition, cost efficiency and the quality of local public services
Manuel A. Muñiz□ & José L. Zafra□□
- 463/2009 Including non-cognitive outputs in a multidimensional evaluation of education production: an international comparison
Marián García Valiñas & Manuel Antonio Muñiz Pérez
- 464/2009 A political look into budget deficits.The role of minority governments and oppositions
Albert Falcó-Gimeno & Ignacio Jurado
- 465/2009 La simulación del cuadro de mando integral. Una herramienta de aprendizaje en la materia de contabilidad de gestión
Elena Urquía Grande, Clara Isabel Muñoz Colomina y Elisa Isabel Cano Montero
- 466/2009 Análisis histórico de la importancia de la industria de la desalinización en España
Borja Montañó Sanz
- 467/2009 The dynamics of trade and innovation: a joint approach
Silviano Esteve-Pérez & Diego Rodríguez
- 468/2009 Measuring international reference-cycles
Sonia de Lucas Santos, Inmaculada Álvarez Ayuso & M^a Jesús Delgado Rodríguez
- 469/2009 Measuring quality of life in Spanish municipalities
Eduardo González Fidalgo, Ana Cárcaba García, Juan Ventura Victoria & Jesús García García
- 470/2009 ¿Cómo se valoran las acciones españolas: en el mercado de capitales doméstico o en el europeo?
Begoña Font Belaire y Alfredo Juan Grau Grau
- 471/2009 Patterns of e-commerce adoption and intensity. evidence for the european union-27
María Rosalía Vicente & Ana Jesús López

- 472/2009 On measuring the effect of demand uncertainty on costs: an application to port terminals
Ana Rodríguez-Álvarez, Beatriz Tovar & Alan Wall
- 473/2009 Order of market entry, market and technological evolution and firm competitive performance
Jaime Gomez, Gianvito Lanzolla & Juan Pablo Maicas
- 474/2009 La Unión Económica y Monetaria Europea en el proceso exportador de Castilla y León (1993-2007): un análisis de datos de panel
Almudena Martínez Campillo y M^a del Pilar Sierra Fernández
- 475/2009 Do process innovations boost SMEs productivity growth?
Juan A. Mañez, María E. Rochina Barrachina, Amparo Sanchis Llopis & Juan A. Sanchis Llopis
- 476/2009 Incertidumbre externa y elección del modo de entrada en el marco de la inversión directa en el exterior
Cristina López Duarte y Marta M^a Vidal Suárez
- 477/2009 Testing for structural breaks in factor loadings: an application to international business cycle
José Luis Cendejas Bueno, Sonia de Lucas Santos, Inmaculada Álvarez Ayuso & M^a Jesús Delgado Rodríguez
- 478/2009 ¿Esconde la rigidez de precios la existencia de colusión? El caso del mercado de carburantes en las Islas Canarias
Juan Luis Jiménez□ y Jordi Perdiguero
- 479/2009 The poni test with structural breaks
Antonio Aznar & María-Isabel Ayuda
- 480/2009 Accuracy and reliability of Spanish regional accounts (CRE-95)
Verónica Cañal Fernández
- 481/2009 Estimating regional variations of R&D effects on productivity growth by entropy econometrics
Esteban Fernández-Vázquez y Fernando Rubiera-Morollón
- 482/2009 Why do local governments privatize the provision of water services? Empirical evidence from Spain
Francisco González-Gómez, Andrés J. Picazo-Tadeo & Jorge Guardiola
- 483/2009 Assessing the regional digital divide across the European Union-27
María Rosalía Vicente & Ana Jesús López
- 484/2009 Measuring educational efficiency and its determinants in Spain with parametric distance functions
José Manuel Cordero Ferrera, Eva Crespo Cebada & Daniel Santín González
- 485/2009 Spatial analysis of public employment services in the Spanish provinces
Patricia Suárez Cano & Matías Mayor Fernández
- 486/2009 Trade effects of continental and intercontinental preferential trade agreements
Salvador Gil-Pareja, Rafael Llorca-Vivero & José Antonio Martínez-Serrano
- 487/2009 Testing the accuracy of DEA for measuring efficiency in education under endogeneity
Salvador Gil-Pareja, Rafael Llorca-Vivero & José Antonio Martínez-Serrano
- 488/2009 Measuring efficiency in primary health care: the effect of exogenous variables on results
José Manuel Cordero Ferrera, Eva Crespo Cebada & Luis R. Murillo Zamorano

- 489/2009 Capital structure determinants in growth firms accessing venture funding
Marina Balboa, José Martí & Álvaro Tresierra
- 490/2009 Determinants of debt maturity structure across firm size
Victor M. González
- 491/2009 Análisis del efecto de la aplicación de las NIIF en la valoración de las salidas a bolsa
Susana Álvarez Otero y Eduardo Rodríguez Enríquez
- 492/2009 An analysis of urban size and territorial location effects on employment probabilities: the spanish case
Ana Viñuela-Jiménez, Fernando Rubiera-Morollón & Begoña Cueto
- 493/2010 Determinantes de la estructura de los consejos de administración en España
Isabel Acero Fraile□ y Nuria Alcalde Fradejas
- 494/2010 Performance and completeness in repeated inter-firm relationships: the case of franchising
Vanessa Solis-Rodriguez & Manuel Gonzalez-Diaz
- 495/2010 A Revenue-Based Frontier Measure of Banking Competition
Santiago Carbó, David Humphrey & Francisco Rodríguez
- 496/2010 Categorical segregation in social networks
Antoni Rubí-Barceló
- 497/2010 Beneficios ambientales no comerciales de la directiva marco del agua en condiciones de escasez: análisis económico para el Guadalquivir
Julia Martin-Ortega, Giacomo Giannoccaro y Julio Berbel Vecino
- 498/2010 Monetary integration and risk diversification in eu-15 sovereign debt markets
Juncal Cuñado & Marta Gómez-Puig
- 499/2010 The Marshall Plan and the Spanish autarky: A welfare loss analysis
José Antonio Carrasco Gallego
- 500/2010 The role of learning in firm R&D persistence
Juan A. Mañez, María E. Rochina-Barrachina, Amparo Sanchis-Llopis & Juan A. Sanchis-Llopis
- 501/2010 Is venture capital more than just money?
Marina Balboa, José Martí & Nina Zieling
- 502/2010 On the effects of supply strategy on business performance: do the relationships among generic competitive objectives matter?
Javier González-Benito
- 503/2010 Corporate cash holding and firm value
Cristina Martínez-Sola, Pedro J. García-Teruel & Pedro Martínez-Solano
- 504/2010 El impuesto de flujos de caja de sociedades: una propuesta de base imponible y su aproximación contable en España
Lourdes Jerez Barroso y Joaquín Teixeira Quirós
- 505/2010 The effect of technological, commercial and human resources on the use of new technology
Jaime Gómez & Pilar Vargas

- 506/2010 ¿Cómo ha afectado la fiscalidad a la rentabilidad de la inversión en vivienda en España?
Un análisis para el periodo 1996 y 2007
Jorge Onrubia Fernández y María del Carmen Rodado Ruiz
- 507/2010 Modelización de flujos en el análisis input-output a partir de la teoría de redes
Ana Salomé García Muñiz
- 508/2010 Export-led-growth hypothesis revisited. a balance of payments approach for Argentina, Brazil,
Chile and Mexico
David Matesanz Gómez & Guadalupe Fugarolas Álvarez-Ude
- 509/2010 Realised hedge ratio properties, performance and implications for risk management: evidence
from the spanish ibex 35 spot and futures markets
David G McMillan & Raquel Quiroga García
- 510/2010 Do we sack the manager... or is it better not to? Evidence from Spanish professional football
Francisco González-Gómez, Andrés J. Picazo-Tadeo & Miguel Á. García-Rubio
- 511/2010 Have Spanish port sector reforms during the last two decades been successful? A cost frontier
approach
Ana Rodríguez-Álvarez & Beatriz Tovar
- 512/2010 Size & Regional Distribution of Financial Behavior Patterns in Spain
Juan Antonio Maroto Acín, Pablo García Estévez & Salvador Roji Ferrari
- 513/2010 The impact of public reforms on the productivity of the Spanish ports: a parametric distance
function approach
Ramón Núñez-Sánchez & Pablo Coto-Millán
- 514/2010 Trade policy versus institutional trade barriers: an application using “good old” ols
Laura Márquez-Ramos, Inmaculada Martínez-Zarzoso & Celestino Suárez-Burguet
- 515/2010 The “Double Market” approach in venture capital and private equity activity: the case of Europe
Marina Balboa & José Martí
- 516/2010 International accounting differences and earnings smoothing in the banking industry
Marina Balboa, Germán López-Espinosa & Antonio Rubia
- 517/2010 Convergence in car prices among European countries
Simón Sosvilla-Rivero & Salvador Gil-Pareja
- 518/2010 Effects of process and product-oriented innovations on employee downsizing
José David Vicente-Lorente & José Ángel Zúñiga-Vicente
- 519/2010 Inequality, the politics of redistribution and the tax-mix
Jenny De Freitas
- 520/2010 Efectos del desajuste educativo sobre el rendimiento privado de la educación: un análisis para el
caso español (1995-2006)
Inés P. Murillo, Marta Rahona y M^a del Mar Salinas
- 521/2010 Structural breaks and real convergence in opec countries
Juncal Cuñado
- 522/2010 Human Capital, Geographical location and Policy Implications: The case of Romania
Jesús López-Rodríguez□, Andres Faiña y Bolea Cosmin-Gabriel

- 523/2010 Organizational unlearning context fostering learning for customer capital through time: lessons from SMEs in the telecommunications industry
Anthony K. P. Wensley, Antonio Leal-Millán, Gabriel Cepeda-Carrión & Juan Gabriel Cegarra-Navarro
- 524/2010 The governance threshold in international trade flows
Marta Felis-Rota
- 525/2010 The intensive and extensive margins of trade decomposing exports growth differences across Spanish regions
Asier Minondo Uribe-Etxeberria & Francisco Requena Silvente
- 526/2010 Why do firms locate r&d outsourcing agreements offshore? the role of ownership, location, and externalization advantages
Andrea Martínez-Noya, Esteban García-Canal & Mauro f. Guillén
- 527/2010 Corporate Taxation and the Productivity and Investment Performance of Heterogeneous Firms: Evidence from OECD Firm-Level Data
Norman Gemmell, Richard Kneller, Ismael Sanz & José Félix Sanz-Sanz
- 528/2010 Modelling Personal Income Taxation in Spain: Revenue Elasticities and Regional Comparisons
John Creedy & José Félix Sanz-Sanz
- 529/2010 Mind the Remoteness!. Income disparities across Japanese Prefectures
Jesús López-Rodríguez□, Daisuke Nakamura
- 530/2010 El nuevo sistema de financiación autonómica: descripción, estimación empírica y evaluación
Antoni Zabalza y Julio López Laborda
- 531/2010 Markups, bargaining power and offshoring: an empirical assessment
Lourdes Moreno & Diego Rodríguez
- 532/2010 The snp-dcc model: a new methodology for risk management and forecasting
Esther B. Del Brio, Trino-Manuel Níguez & Javier Perote
- 533/2010 El uso del cuadro de mando integral y del presupuesto en la gestión estratégica de los hospitales públicos
David Naranjo Gil
- 534/2010 Análisis de la efectividad de las prácticas de trabajo de alta implicación en las fábricas españolas
Daniel Vázquez-Bustelo□□ y Lucía Avella Camarero
- 535/2010 Energía, innovación y transporte: la electrificación de los tranvías en España, 1896-1935
Alberte Martínez López
- 536/2010 La ciudad como negocio: gas y empresa en una región española, Galicia 1850-1936
Alberte Martínez López y Jesús Mirás Araujo
- 537/2010 To anticipate or not to anticipate? A comparative analysis of opportunistic early elections and incumbents' economic performance
Pedro Riera Sagrera
- 538/2010 The impact of oil shocks on the Spanish economy
Ana Gómez-Loscos, Antonio Montañés & María Dolores Gadea

- 539/2010 The efficiency of public and publicly-subsidized high schools in Spain. evidence from pisa-2006
María Jesús Mancebón, Jorge Calero, Álvaro Choi & Domingo P. Ximénez-de-Embún
- 540/2010 Regulation as a way to force innovation: the biodiesel case
Jordi Perdigueró & Juan Luis Jiménez
- 541/2010 Pricing strategies of Spanish network carrier
Xavier Fageda, Juan Luis Jiménez & Jordi Perdigueró
- 542/2010 Papel del posicionamiento del distribuidor en la relación entre la marca de distribuidor y lealtad al establecimiento comercial
Oscar González-Benito y Mercedes Martos-Partal
- 543/2010 How Bank Market Concentration, Regulation, and Institutions Shape the Real Effects of Banking Crises
Ana I. Fernández, Francisco González & Nuria Suárez
- 544/2010 Una estimación del comercio interregional trimestral de bienes en España mediante técnicas de interpolación temporal
Nuria Gallego López, Carlos Llano Verduras y Julián Pérez García
- 545/2010 Puerto, empresas y ciudad: una aproximación histórica al caso de Las Palmas de Gran Canaria
Miguel Suárez, Juan Luis Jiménez y Daniel Castillo
- 546/2010 Multinationals in the motor vehicles industry: a general equilibrium analysis for a transition economy
Concepción Latorre & Antonio G. Gómez-Plana
- 547/2010 Core/periphery scientific collaboration networks among very similar researchers
Antoni Rubí-Barceló
- 548/2010 Basic R&D in vertical markets
Miguel González-Maestre & Luis M. Granero
- 549/2010 Factores condicionantes de la presión fiscal de las entidades de crédito españolas, ¿existen diferencias entre bancos y cajas de ahorros?
Ana Rosa Fonseca Díaz, Elena Fernández Rodríguez y Antonio Martínez Arias
- 550/2010 Analyzing an absorptive capacity: Unlearning context and Information System Capabilities as catalysts for innovativeness
Gabriel Cepeda-Carrión, Juan Gabriel Cegarra-Navarro & Daniel Jimenez-Jimenez
- 551/2010 The resolution of banking crises and market discipline: international evidence
Elena Cubillas, Ana Rosa Fonseca & Francisco González
- 552/2010 A strategic approach to network value in information markets
Lucio Fuentelsaz, Elisabet Garrido & Juan Pablo Maicas
- 553/2010 Accounting for the time pattern of remittances in the Spanish context
Alfonso Echazarra
- 554/2010 How to design franchise contracts: the role of contractual hazards and experience
Vanesa Solis-Rodriguez & Manuel Gonzalez-Diaz

- 555/2010 Una teoría integradora de la función de producción al rendimiento empresarial
Javier González Benito
- 556/2010 Height and economic development in Spain, 1850-1958
Ramón María-Dolores & José Miguel Martínez-Carrión
- 557/2010 Why do entrepreneurs use franchising as a financial tool? An agency explanation
Manuel González-Díaz & Vanesa Solís-Rodríguez
- 558/2010 Explanatory Factors of Urban Water Leakage Rates in Southern Spain
Francisco González-Gómez, Roberto Martínez-Espiñeira, Maria A. García-Valiñas & Miguel Á. García Rubio
- 559/2010 Los rankings internacionales de las instituciones de educación superior y las clasificaciones universitarias en España: visión panorámica y prospectiva de futuro.
Carmen Pérez-Esparrells y José M^a Gómez-Sancho.
- 560/2010 Análisis de los determinantes de la transparencia fiscal: Evidencia empírica para los municipios catalanes
Alejandro Esteller Moré y José Polo Otero
- 561/2010 Diversidad lingüística e inversión exterior: el papel de las barreras lingüísticas en los procesos de adquisición internacional
Cristina López Duarte y Marta M^a Vidal Suárez
- 562/2010 Costes y beneficios de la competencia fiscal en la Unión Europea y en la España de las autonomías
José M^a Cantos, Agustín García Rico, M^a Gabriela Lagos Rodríguez y Raquel Álamo Cerrillo
- 563/2010 Customer base management and profitability in information technology industries
Juan Pablo Maicas y Francisco Javier Sese
- 564/2010 Expansión internacional y distancia cultural: distintas aproximaciones —hofstede, schwartz, globe
Cristina López Duarte y Marta M^a Vidal Suárez
- 565/2010 Economies of scale and scope in service firms with demand uncertainty: An application to a Spanish port
Beatriz Tovar & Alan Wall
- 566/2010 Fiscalidad y elección entre renta vitalicia y capital único por los inversores en planes de pensiones: el caso de España
Félix Domínguez Barrero y Julio López Laborda
- 567/2010 Did the cooperative start life as a joint-stock company? Business law and cooperatives in Spain, 1869–1931
Timothy W. Guinnan & Susana Martínez-Rodríguez
- 568/2010 Predicting bankruptcy using neural networks in the current financial crisis: a study for US commercial banks
Félix J. López-Iturriaga, Óscar López-de-Foronda & Iván Pastor Sanz
- 569/2010 Financiación de los cuidados de larga duración en España
Raúl del Pozo Rubio y Francisco Escribano Sotos

- 570/2010 Is the Border Effect an Artefact of Geographic Aggregation?
Carlos Llano-Verduras, Asier Minondo-Urbe & Francisco Requena-Silvente
- 571/2010 Notes on using the hidden asset or the contribution asset to compile the actuarial balance for pay-as-you-go pension systems
Carlos Vidal-Meliá & María del Carmen Boado-Penas
- 572/2010 The Real Effects of Banking Crises: Finance or Asset Allocation Effects? Some International Evidence
Ana I. Fernández, Francisco González & Nuria Suárez Carlos
- 573/2010 Endogenous mergers of complements with mixed bundling
Ricardo Flores-Fillol & Rafael Moner-Colonques
- 574/2010 Redistributive Conflicts and Preferences for Tax Schemes in Europe
Antonio M. Jaime-Castillo & Jose L. Saez-Lozano
- 575/2010 Spanish emigration and the setting-up of a great company in Mexico: bimbo, 1903-2008
Javier Moreno Lázaro
- 576/2010 Mantenimiento temporal de la equidad horizontal en el sistema de financiación autonómica
Julio López Laborda y Antoni Zabalza
- 577/2010 Sobreeducación, Educación no formal y Salarios: Evidencia para España
Sandra Nieto y Raúl Ramos
- 578/2010 Dependencia y empleo: un análisis empírico con la encuesta de discapacidades y atención a la dependencia (edad) 2008.
David Cantarero-Prieto y Patricia Moreno-Mencía
- 579/2011 Environment and happiness: new evidence for Spain
Juncal Cuñado & Fernando Pérez de Gracia
- 580/2011 Aanalysis of emerging barriers for e-learning models. a case of study
Nuria Calvo & Paolo Rungo
- 581/2011 Unemployment, cycle and gender
Amado Peiró, Jorge Belaire-Franch, & Maria Teresa Gonzalo
- 582/2011 An Analytical Regions Proposal for the Study of Labour Markets: An Evaluation for the Spanish Territory
Ana Viñuela Jiménez & Fernando Rubiera Morollón
- 583/2011 The Efficiency of Performance-based-fee Funds
Ana C. Díaz-Mendoza, Germán López-Espinosa & Miguel A. Martínez-Sedano
- 584/2011 Green and good?. The investment performance of US environmental mutual funds
Francisco J. Climent-Diranzo & Pilar Soriano-Felipe
- 585/2011 El fracaso de Copenhague desde la teoría de juegos.
Yolanda Fernández Fernández, M^a Ángeles Fernández López y Blanca Olmedillas Blanco
- 586/2011 Tie me up, tie me down! the interplay of the unemployment compensation system, fixed-term contracts and rehiring
José M. Arranz & Carlos García-Serrano

- 587/2011 Corporate social performance, innovation intensity and their impacts on financial performance: evidence from lending decisions
Andrés Guiral
- 588/2011 Assessment of the programme of measures for coastal lagoon environmental restoration using cost-benefit analysis.
José Miguel Martínez Paz & Ángel Perni Llorente
- 589/2011 Illicit drug use and labour force participation: a simultaneous equations approach
Berta Rivera, Bruno Casal, Luis Currais & Paolo Rungo
- 590/2011 Influencia de la propiedad y el control en la puesta en práctica de la rsc en las grandes empresas españolas
José-Luis Godos-Díez, Roberto Fernández-Gago y Laura Cabeza-García
- 591/2011 Ownership, incentives and hospitals
Xavier Fageda & Eva Fiz
- 592/2011 La liberalización del ferrocarril de mercancías en europa: ¿éxito o fracaso?
Daniel Albalade del Sol, Maria Lluïsa Sort García y Universitat de Barcelona
- 593/2011 Do nonreciprocal preference regimes increase exports?
Salvador Gil-Pareja, Rafael Llorca-Vivero & José Antonio Martínez-Serrano
- 594/2011 Towards a dynamic analysis of multiple-store shopping: evidence from Spanish panel data
Noemí Martínez-Caraballo, Manuel Salvador, Carmen Berné & Pilar Gargallo
- 595/2011 Base imponible y neutralidad del impuesto de sociedades: alternativas y experiencias
Lourdes Jerez Barroso
- 596/2011 Cambio técnico y modelo de negocio: las compañías de transporte urbano en España, 1871-1989
Alberte Martínez López
- 597/2011 A modified dickey-fuller procedure to test for stationarity
Antonio Aznar, María-Isabel Ayuda
- 598/2011 Entorno institucional, estructura de propiedad e inversión en I+D: Un análisis internacional
Félix J. López Iturriaga y Emilio J. López Millán
- 599/2011 Factores competitivos y oferta potencial del sector lechero en Navarra
Valero L. Casanovas Oliva y Ana M. Aldanondo Ochoa
- 600/2011 Política aeroportuaria y su impacto sobre la calidad percibida de los aeropuertos
Juan Luis Jiménez y Ancor Suárez
- 601/2011 Regímenes de tipo de cambio y crecimiento económico en países en desarrollo
Elena Lasarte Navamuel y José Luis Pérez Rivero
- 602/2011 La supervivencia en las empresas de alta tecnología españolas: análisis del sector investigación y desarrollo
Evangelina Baltar Salgado, Sara Fernández López, Isabel Neira Gómez y Milagros Vivel Búa
- 603/2011 Análisis económico y de rentabilidad del sistema financiero español, por tipo de entidades y tamaño, después de cuatro años de crisis y ante los retos de la reestructuración financiera
Salvador Climent Serrano

- 604/2011 Does competition affect the price of water services? Evidence from Spain
Germà Bel, Francisco González-Gómez & Andrés J Picazo-Tadeo
- 605/2011 The Effects of Remoteness in Japanese Educational Levels
Jesús López-Rodríguez & Daisuke Nakamura
- 606/2011 The money market under information asymmetries and imperfectly competitive loan and deposit markets
Aday Hernández
- 607/2011 The effects of airline and high speed train integration
M. Pilar Socorro & M. Fernanda Vicens
- 608/2011 Consecuencias de la imbricación de los clientes en la dirección medioambiental: un análisis empírico
Jesús Ángel del Brío González, Esteban Fernández Sánchez y Beatriz Junquera Cimadevilla
- 609/2011 Revenue autonomy and regional growth: an analysis for the 25 year-process of fiscal decentralisation in Spain
Ramiro Gil-Serrate, Julio López-Laborda & Jesús Mur
- 610/2011 The accessibility to employment offices in the Spanish labor market: Implications in terms of registered unemployment
Patricia Suárez, Matías Mayor & Begoña Cueto
- 611/2011 Time-varying integration in European government bond markets
Pilar Abad, Helena Chuliá & Marta Gómez-Puig
- 612/2011 Production networks and EU enlargement: is there room for everyone in the automotive industry?
Leticia Blázquez, Carmen Díaz-Mora & Rosario Gandoy
- 613/2011 Los factores pronóstico económico, estructura productiva y capacidad de innovar en la valoración de activos españoles
M^a Begoña Font Belaire y Alfredo Juan Grau Grau
- 614/2011 Capital structure adjustment process in firms accessing venture funding
Marina Balboa, José Martí & Álvaro Tresierra
- 615/2011 Flexibilidad Contable en la Valoración de Instrumentos Financieros Híbridos
Jacinto Marabel-Romo, Andrés Guiral-Contreras & José Luis Crespo-Espert
- 616/2011 Why are (or were) Spanish banks so profitable?
Antonio Trujillo-Ponce
- 617/2011 Extreme value theory versus traditional garch approaches applied to financial data: a comparative evaluation
Dolores Furió & Francisco J. Climent
- 618/2011 La restricción de balanza de pagos en la España del euro. Un enfoque comparativo.
David Matesanz Gómez, Guadalupe Fugarolas Álvarez-Ude y Roberto Bande Ramudo
- 619/2011 Is inefficiency under control in the justice administration?
Marta Espasa & Alejandro Esteller-Moré
- 620/2011 The evolving patterns of competition after deregulation
Jaime Gómez Villascuerna, Raquel Orcos Sánchez & Sergio Palomas Doña

- 621/2011 Análisis pre y post-fusiones del sector compuesto por las cajas de ahorros españolas: el tamaño importa
Antonio A. Golpe, Jesús Iglesias y Juan Manuel Martín
- 622/2011 Evaluating three proposals for testing independence in non linear spatial processes
Fernando A. López-Hernández, M. Luz Maté-Sánchez-Val & Andrés Artal-Tur
- 623/2011 Valoración del Mercado de los Activos Éticos en España: una Aplicación del Método de los Precios Hedónicos
Celia Bilbao-Terol y Verónica Cañal-Fernández
- 624/2011 Happiness beyond Material Needs: The Case of the Mayan People
Jorge Guardiola, Francisco González-Gómez & Miguel A. García-Rubio
- 625/2011 Stock characteristics, investor type and market myopia
Cristina Del Rio-Solano & Rafael Santamaria-Aquilué
- 626/2011 Is mistrust under control in the justice administration?
Alejandro Esteller-Moré
- 627/2011 Working capital management, corporate performance, and financial constraints
Sonia Baños-Caballero, Pedro J. García-Teruel & Pedro Martínez-Solano
- 628/2011 On the optimal distribution of traffic of network airlines
Xavier Fageda & Ricardo Flores-Fillol
- 629/2011 Environmental tax and productivity in a subcentral context: new findings on the porter hypothesis
Jaime Vallés- Giménez & Anabel Zárate-Marco
- 630/2011 The impact of scale effects on the prevailing internet-based banking model in the US
Alexandre Momparlera, Francisco J. Climentb & José M. Ballesterb
- 631/2011 Student achievement in a cross-country perspective: a multilevel analysis of pisa2006 data for Italy and Spain
Tommaso Agasisti & Jose Manuel Cordero-Ferrera