

**DEVELOPMENTS IN RETAIL TRADE
REGULATION IN SPAIN AND THEIR
MACROECONOMIC IMPLICATIONS**

2009

María de los Llanos Matea
and Juan S. Mora-Sanguinetti

**Documentos de Trabajo
N.º 0908**

BANCO DE ESPAÑA
Eurosistema



**DEVELOPMENTS IN RETAIL TRADE REGULATION IN SPAIN AND THEIR
MACROECONOMIC IMPLICATIONS**

DEVELOPMENTS IN RETAIL TRADE REGULATION IN SPAIN AND THEIR MACROECONOMIC IMPLICATIONS

María de los Llanos Matea and Juan S. Mora-Sanguinetti ^(*) ^(**)

BANCO DE ESPAÑA

(*) Correspondence with the authors: matea@bde.es and juans.mora@bde.es

(**) We gratefully acknowledge the assistance provided by the management and staff of the Directorate General of Domestic Trade of the Ministry of Industry, Tourism and Trade in compiling part of the information on regulations. We also thank those attending the VII Economic Policy Symposium-University of Valencia (2007), the Complutense University Madrid Summer Courses (2008), the Banco de España seminars (2008), the G4 Meeting on Structural Issues at the Banco de España in December 2008, and an anonymous referee. We are likewise indebted to María Gil and Ángel Luis Gómez for their collaboration in the presentation of the tables and charts. The opinions and findings expressed in this paper are those of the authors, and do not necessarily coincide with those of the Banco de España and the Eurosystem.

The Working Paper Series seeks to disseminate original research in economics and finance. All papers have been anonymously refereed. By publishing these papers, the Banco de España aims to contribute to economic analysis and, in particular, to knowledge of the Spanish economy and its international environment.

The opinions and analyses in the Working Paper Series are the responsibility of the authors and, therefore, do not necessarily coincide with those of the Banco de España or the Eurosystem.

The Banco de España disseminates its main reports and most of its publications via the INTERNET at the following website: <http://www.bde.es>.

Reproduction for educational and non-commercial purposes is permitted provided that the source is acknowledged.

© BANCO DE ESPAÑA, Madrid, 2010

ISSN: 0213-2710 (print)

ISSN: 1579-8666 (on line)

Depósito legal: M. 29262-2010

Unidad de Publicaciones, Banco de España

Abstract

There is evidence that retail trade regulations may have a significant impact on prices, employment and productivity. In the case of Spain, the retail trade sector is subject to a wide ranging set of regional regulations. This paper provides a database and a set of indicators on the main restrictions to retail trade in place in Spain's Autonomous Regions (Comunidades Autónomas) between 1997 and 2007. The restrictions bear on the following regulatory aspects: shop opening hours, seasonal sales, definitions of large retail outlets, regional licensing of hard discount stores, moratoria in retail trade licence issuance and specific taxes on large retail outlets. The paper next presents an aggregate indicator constructed on the basis of these restrictions using factor analysis. Lastly, using data panel techniques, this paper provides estimates of the effect of trade restrictiveness (using the aggregate indicator) on commercial density, the employment in the sector and the rate of inflation in each region. The results of this research point to an increase in the level of regulation over the course of the period. Further, there is evidence that greater regulation may be associated with higher inflation, lower employment in the sector and greater commercial density. In any event, these results should be viewed with caution given the necessary limitations of the regulation indicator used and the limited data period available.

Keywords: Market regulation, retailing, barriers to entry, shop opening hours.

JEL classification: K23, L81.

1 Introduction

The retail trade sector is of great importance in Spain, accounting for 4.7% of the economy's GVA in 2006 and for 9.5% of total employment in 2007. Its significance for the economy as a whole is, however, even greater insofar as retailing involves placing a large portion of consumer goods at the disposal of customers, meaning that the behaviour of this sector may be of crucial importance for variables such as final product prices.

Retailing is characterised, moreover, by very extensive regional regulations in Spain. On several occasions these regulations have been identified by the OECD, the IMF and the European Commission as generating numerous barriers to competition,¹ prompting recommendations by these organisations calling for the liberalisation of the sector. Among the Spanish agencies, the TDC (Competition Court) published a report in 2003 on the main problems concerning the sector regulations, recommending eliminating many of the criteria applied by the regional governments in the case of a second trading licence and opting for liberalisation of opening hours.

Many papers have analysed the impact of retailing regulations on different macroeconomic variables. A compendium of various papers written in the 1990s can be consulted in Boylaud and Nicoletti (2001). Among the latest empirical studies, mention should also be made of Bertrand and Kramarz (2002), the IMF (2004), Burda and Weil (2005), Skuterud (2005), Viviano (2006), Hoffmaister (2006), Orea (2008) and Schivardi and Viviano (2008). Bertrand and Kramarz (2002) for France, Viviano (2006) for Italy, and the IMF (2004) for Spain, all find that the more restrictive retailing policy is, the lower employment will be in the sector. Along the same lines, Skuterud (2005) provides evidence of how deregulation of Sunday and public holiday trading in Canada led to an increase in employment. Likewise focusing on shop opening hours, but for the United States, Burda and Weil (2005) conclude that the greater the restrictiveness of regulations, the lower employment, wages and productivity in the sector are, but they find no significant effects on prices. Nonetheless, the IMF (2004) and Hoffmaister (2006) find that, in Spain's case, the barriers to freedom of trading translate into higher prices. Likewise for Spain, Orea (2008)² finds that the regulations introduced in 1997 have been effective in protecting small retailers, although the subsequent increase in regulations does not appear to have had a significant impact. For Italy, Schivardi and Viviano (2008) identify a negative relationship between barriers to entry in the sector and productivity, on the one hand, and the incorporation of information technologies, on the other, while the relationship is positive in the case of business margins and prices, although the evidence of this latter effect is weaker.

Some of the above-mentioned papers opt to construct indicators of the degree of regulation in the sector that allow comparisons to be made over time and

1. See, for example, the latest OECD Economic Surveys on Spain and the latest IMF reports pertaining to Spain in the context of the "Article IV Consultation". Regarding the European Commission, mention should be made of its 2006 Annual Assessment within the framework of the Community Lisbon Programme, where Spain was asked in the context of the national reforms programme to focus, among other objectives, on increasing competition in retail markets.

2. To measure regulation, the author used this paper's synthetic indicator for 1997 and the difference in this indicator between 2007 and 1997.

between countries. In this connection it is worth highlighting the efforts made since the late 1990s by the OECD to devise structural retail indicators. Using factor analysis, these indicators aggregate each country's regulations on licensing, opening hours and price control.³ According to these indicators, and among the 29 countries considered, Spain ranked third in 2003 in terms of strictest retail regulations, despite the fact that the indicator improved slightly between 1998 and 2003 as a result of the liberalisation of fuel prices⁴ and the introduction of more flexible opening hours. One limitation of these indicators, however, is the fact that they only take into account national legislation, when in Spain the regulations at the regional level are very important. Copenhagen Economics (2005) applied a similar methodology to draw up an indicator of the degree of restrictiveness in the internal market for services in 20 EU countries.

At the regional level and for Spain, Rodríguez (2001) devised one of the first indices of regional government intervention in trading policy, drawing on the legislation on opening hours and on the establishment of large retail outlets,⁵ calculating the overall indicator as an arithmetical mean of the aspects considered.⁶ Subsequently, on the basis of the TDC report (2003) on the regulation of the sector, the IMF (2004) constructed indicators of the regional barriers to openings of large retail outlets. Matea and Ortega (2006) updated the IMF indicators to the legislation in force as of May 2005, while adding as a further barrier the application in certain regions of a specific tax on large retail outlets.⁷ In both cases, the indices were constructed by averaging, in the same proportion, each administrative requirement. The Institut Cerdà (2004) also devised region-based measures of trading regulations. Specifically, a binary variable was assigned to each of the five regulatory aspects considered, depending on whether regulation was low or high,⁸ aggregating them subsequently with ad hoc weights. Lastly, BBVA (2008) recently published an indicator of trading regulations in 2007, obtained using the principal components technique.⁹

This paper seeks to build on this avenue of research by devising regional retail trade regulation indicators. The paper will consider a broader range of regulations than those envisaged by the IMF (2004) and Hoffmaister (2006). Also, similarly to the work of the OECD, the various restrictions will be weighted to an extent going beyond simple aggregation. Once the indicators are obtained, the aim is to estimate how

3. In the preparation of these indicators, the OECD compiled information from the member states based on questionnaires for 1998 and 2003. The questions referred to: trade registers for opening food stores; specific licences for food stores; specific regulations for large retail outlets; protectionism by established firms against new entrants; regulation of shop opening hours; and price controls.

4. This aspect is beyond the scope of this paper since, although some price controls remain in place (as is the case of the prices of non-advertised drugs and of certain products sold in tobacconists'), there are no differences across the regions. For the same reason, the need to register to be able to open a food store is not taken into account either.

5. Specifically, each region is catalogued on the basis of four indicators, namely: degree of interventionism of the legislation on shop opening hours; definition of large retail establishments; moratoria; and an indicator of legal activism in the face of national legislation.

6. However, in the case of legal activism their weight is halved.

7. The other variables common to both papers are: definition of large retail outlets (a) on the basis of their location, (b) on the basis of multiple criteria, and (c) in accordance with capital share criteria; requirement of a second licence for hard discount stores; restrictions on medium-sized outlets regarding installation, expansion, sale and change of ownership; requirement of a market viability plan for obtaining of the specific licence; and moratoria.

8. The aspects considered are: definition of large retail outlets; moratoria; Domestic Trade Advisory Committee involved in the retail trade licence procedure; Sectoral Plans for Retail Installations; and maximum number of Sunday and public holiday openings.

9. Based on data on the existence of moratoria on new retail openings, the number of authorised Sunday and public holiday openings, barriers to entry and the existence of taxes on large retail outlets.

regional legislation may have affected various key variables of retail trade in the Spanish economy.

It should be highlighted that the study focuses on regional regulations, despite the fact that municipal legislation may prove fundamental in some instances, given that moving to the municipal level would increase the number of rules to be considered enormously. Moreover, it takes no account of regulations that are common to all regional governments, since that would not introduce differences when comparing the degree of regulation of retail trade across the regions. The indicators are to be constructed for the period 1997-2007.

Following this introduction, the paper is structured as follows. Section 2 presents the regulatory changes affecting retail trade at both national and regional level. Section 3 explains how the indicators are constructed. Section 4 estimates the effects of regional regulations on commercial density, inflation and employment in the sector. Section 5 draws some brief conclusions. Finally, completing the document are several annexes detailing the methodology used to construct the indicators and the database employed in the estimates.

2 Retail trade regulations in Spain

In Spain, powers over domestic trade are transferred to the regions, meaning that retailing is regulated by the regional governments, although the central government has the power to establish basic general economic rules.¹⁰ Section 2.1 sets out the most significant regulatory changes in national legislation, while Section 2.2 analyses regional legislation. Institutions such as the Competition Court (2003) have pronounced as follows on the wide-ranging legislative activity of the regional governments: “*retail distribution is subject to numerous, detailed and disparate regulations*”.¹¹

The justification for regional regulation of retailing is to be found in the preambles and articles of the different regulations, which highlight the purported benefits of regulating the retail trade (e.g. better town planning, greater consideration of environmental issues). The difficulties involved in measuring these factors place them beyond the scope of this paper.

As is indicated above, exhaustive analysis of retail trade regulations is an arduous and laborious task that is beyond the aim of this paper. Instead, several aspects, which the literature considers to be the most representative, have been selected for analysis: opening hours, seasonal sales, definition of outlets that require a regional government licence, moratoria and specific taxes on large retail outlets. These are also the aspects that will be subsequently considered for construction of the indicators of the level of regulation.

2.1 National regulations

To place the regional regulations in context, it is a good idea to review developments in national legislation, as there is a certain parallel between the two sets of regulations. In fact, some regional governments generally adapt their regulations to national legislation, although there are also cases in which national legislation has been influenced by regional regulations.

In the case of shop opening hours, national legislation has been key. Thus, Royal Decree-Law 2/1985 of 30 April 1985 on economic measures liberalised opening hours completely. Nevertheless, some regional governments with powers over domestic trade matters limited this freedom, resulting in a clash with national legislation. To resolve this problem, the Constitutional Court¹² ruled that the central government could set rules on shop opening hours, which would be binding on the regional governments, provided these were basic general economic rules. In light of this judgement, the government opted to impose minimum shop opening hours, thus tightening up the regulations in force since 1985. In particular, Royal Decree-Law 22/1993 established that, although regional governments had the power to regulate

10. Article 149.1.13 of the Spanish Constitution.

11. According to the European Commission, there are 700 laws and regulations on domestic trade in Spain, whereas according to sector sources, 4,600 retail trade regulations have been introduced since powers over domestic trade were transferred to the regional governments in 1996.

12. Judgement 225/93 of 8 July 1993.

opening hours, there would be a minimum overall total of 72 hours per week, and a limit of eight Sunday and public holiday openings per year.¹³

Royal Decree-Law 6/2000 subsequently eased these restrictions. More specifically, the number of weekly hours was extended to 90 and a schedule was introduced to gradually raise the minimum number of Sunday and public holiday openings, from eight in 2000 to twelve in 2004, at the rate of one extra trading day per year. Further, retail outlets of less than 300 m² that did not belong to a retail group and did not operate under the same name as a retail group were granted total freedom of opening. The transitory nature of the regulations on opening hours was also confirmed, as it was established that opening hours could be liberalised as from 1 January 2005,¹⁴ provided there was agreement between the central and regional governments. In the end, however, Law 1/2004 of 21 December 2004 on opening hours reneged on this liberalisation, returning to a more restrictive regime. The number of Sundays and public holidays on which retailers could open was set at 12, although the regional governments could raise this number or reduce it (in no case to less than eight),¹⁵ and the overall number of hours was reduced to 72 per week.

Lastly, mention should also be made of Retail Trade Law 7/1996 of 15 January 1996 which introduced a series of administrative requirements, including, in particular, the need for large retail outlets (2,500 m² or more) to obtain a second specific licence before opening, in this case a regional licence, in addition to the municipal licence.¹⁶ This was justified by the impact they may have on retailers in adjoining municipalities.¹⁷

2.2 Regional regulations

This section analyses how certain regulatory aspects of retailing have evolved: opening hours, seasonal sales, definition of outlets that require a regional government licence, moratoria and specific taxes on large retail outlets.

In the case of opening hours, national legislation has set the pace for changes at regional level. The regulations finally adopted by the regional governments are very similar to the minimum conditions established in national legislation, especially insofar as overall weekly opening hours are concerned. Indeed, as Table 1 shows, up to end-2004 the maximum number of weekly opening hours¹⁸ was the same, in all regions, as the minimum envisaged in national legislation, with just two exceptions: the Basque Country, which had no regulations on opening hours, and the Balearic

13. However, opening hours remained unrestricted for: sales of cakes and pastries, bread, ready-made dishes, newspapers and magazines, fuel, flowers and plants; convenience stores; and sales points at border posts, in stations, on passenger transport (by road, rail, sea or air) and in tourist areas. Convenience stores are those with less than 500 m² that open for at least 18 hours a day and whose stock comprises, in a similar measure, books, newspapers, magazines, food, CDs, DVDs, videos, toys, gifts, etc.

14. Organic Law 2/1996 established a shorter transitory period for regulation of opening hours (up to 1 January 2001), but regional government opposition to the liberalisation of opening hours led to it being extended.

15. One aspect of the new legislation that must be viewed positively is the fact that the Sunday and public holiday trading days chosen by the regional governments must be attractive from a commercial standpoint.

16. In addition, selling at a loss was banned and payment terms for large retail outlets were limited. This last measure was further strengthened by Law 55/1999 of 29 December 1999 on fiscal, administrative and social measures, and by Law 3/2004 which established measures to combat late payment in commercial transactions.

17. Some regional governments had already introduced this requisite prior to 1996; specifically the Basque Country (1983), Valencia (1986), Catalonia (1987), Galicia and Navarre (1988), Aragon (1989) and the Canary Islands (1994).

18. There are no limits on opening hours for small retailers.

Islands, where it remained at 72 hours. But this changed as from 2005, when new national legislation moved the overall minimum weekly total back to 72 hours. Most regional governments adopted this new minimum as their maximum, but five regions (Castile and Leon, Valencia, Madrid, Navarre and La Rioja) held the maximum number of weekly opening hours at 90 hours and Castile-La Mancha waited until 2006 to cut it back to 72 hours.

There are somewhat greater differences between regions when it comes to numbers of Sunday and public holiday openings. Moreover, in some regions this number may vary between municipalities¹⁹; see Table 2 for a summary of these data.²⁰

Turning to seasonal sales,²¹ State legislation sets two sales periods per year, one starting in early January and the other in the summer holidays, each with a minimum duration of one week and a maximum duration of two months. Retailers are free to determine the duration of their seasonal sales within the limits established in national legislation, but the specific dates for the sales are set by the regional governments. Accordingly, in this respect the differences between regions lie in the duration of the seasonal sales. Here this variable is measured as the number of days of sales permitted each year, including both winter and summer sales.²² As Table 3 shows, the regions split into two main groups: around 155 days' sales (e.g. in Cantabria, Castile-La Mancha, Castile and Leon, Galicia, Madrid and the Basque Country); and around 105 days' sales (in Andalusia, the Balearic Islands, the Canary Islands,²³ Catalonia, Murcia, Navarre, Asturias and La Rioja), with Valencia in an intermediate position with around 115 days' sales. Regional legislation on seasonal sales is relatively stable over time.

How each regional government defines "large retail outlets" is important as they all now require that these outlets apply for a second (regional) licence in addition to the usual municipal one. These definitions vary considerably, both between regions and over time. As Table 4 shows, the regional governments have gradually made their criteria more stringent. Thus, although in 1997 "large retail outlets" were usually defined in terms of floor space (m²), a decade later the criteria had multiplied, save in Cantabria, Galicia and Asturias, with different minimum floor space requirements according to the population of the municipality in which the outlets were to be located.²⁴ In other cases, the criteria are based on the number of employees (and the floor space criteria are subsidiary, i.e. they are only applied when the criteria based on the number of employees are not used), as, for example, in the Balearic Islands

19. Since 1998 in Madrid and Galicia, where municipalities may authorise adding one or two trading days to the total set for the region as a whole, and in 1999 and 2000 in Castile and Leon, where the addition of a local holiday was permitted in certain circumstances.

20. There was no regional legislation on opening hours in the Basque Country before February 2005. In theory this meant there were no limits on opening hours, although in practice no stores opened on Sundays or public holidays. And this remains true today, even though regional legislation envisages that retail outlets with more than 400 m² may open on eight Sundays or public holidays.

21. Under Retail Trade Law 7/1996, seasonal sales are understood to be when goods are on sale, in the same store in which they are usually sold, at a reduced price, excluding defective products or those purchased for sale below the usual price.

22. Calculated excluding Sundays, but not adjusted for public holidays or Sunday openings.

23. The 104 days' sales for the Canary Islands is the average (104.077) and the mode (104) for the region in the period considered. The mode is included for purposes of simplicity, although there are differences of one day, according to the island and the year in question.

24. In this respect, in 2003 the Spanish Competition Court ruled that the criterion linking the definition of "large retail outlets" to population ignores the mobility of shoppers and fails to consider that the catchment area of such outlets generally extends beyond the specific municipality in which they are located.

since 2002. Lastly, other regional governments apply criteria based on the total number of outlets of a specific company, or on the total amount of floor space already open in the region, as, for example, in Asturias.

The minimum floor space required in order for stores to be considered “large retail outlets” has gradually diminished in most regions, signifying that the need for application for a second licence has gradually spread to increasingly smaller outlets. The exceptions, in this case, being Aragon, Cantabria, Valencia, Navarre, Asturias and La Rioja, all of which have maintained the same criteria for the past 11 years, and the Canary Islands and Galicia where the floor space required in order for stores to be considered “large retail outlets” has actually increased.

Specific regional licences may also be required, even if the stores in question are not “large retail outlets”. For example, in the case of hard discount stores (see Table 5), which are defined, with minor variations between regions, according to the minimum number of “own brand” products for sale and a minimum number of stores operating under the same name and a minimum floor space. This second licence is currently required in seven regions (Andalusia, the Canary Islands, Cantabria, Castile and Leon, Extremadura, Madrid and Murcia) and was required in Aragon up to 2005. In Asturias the system is virtually equivalent as, since 2003, a “report” is required from the regional government’s Council for Industry, Tourism and Trade for hard discount stores applying for a municipal licence.

Specific taxes on large retail outlets are the most recent of all the measures analysed. They were introduced in 2001 in Catalonia and Navarre and are currently only in force in four regions²⁵ (Aragon, Catalonia, Navarre and Asturias; see Table 6). The tax base is the number of m² of retail activity. In general, the larger the floor space or the catchment population (Asturias), the higher the tax. But the exemption threshold of the first few thousand square metres means that, in practice, the tax is borne only by “large retail outlets”. As indicated, the amount of tax paid varies according to the number of m²; the lowest rate stands at €12/m² in Navarre.

Many regional governments also have retail moratorium regulations (see Table 7), banning large retail openings in the region for a specific period of time. Several regions have applied moratoria in the past (Andalusia, the Balearic Islands, Cantabria, Castile and Leon, Catalonia, Navarre, the Basque Country, Asturias), while in Aragon the moratorium affected only the Zaragoza area (2001-2005). There are also cases of suspensions and moratoria that extend to smaller stores, such as that on supermarket openings introduced in Catalonia in 2001, and of partial suspensions, as for example in the Canary Islands where the moratorium applies to a specific area that is considered to be “saturated” in terms of retail space. At present moratoria are only in force in the Balearic and the Canary Islands.

25. In all four cases, appeals have been filed against these taxes with the Constitutional Court.

3 Construction of indicators

The next stage was to construct quantitative indicators for each of the aspects discussed in the previous section, and a synthetic indicator grouping them together in one single index, to permit classification of the regional governments according to the level of regulation of the retail trade. The aim of the first such indicators was to provide explanatory quantitative variables that could be used to analyse the effect of specific regulations. The aim of the synthetic indicator was to permit assessment of the impact of the different degree of regulation in each region.

Broadly speaking, the quantitative indicators were constructed such that 10 denotes maximum possible regulation and 0 denotes no regulation,²⁶ taking into account the number of days of the year in which the regulations limited the freedom of decision of retailers or in which they were subject to the corresponding regulations. Annex A.1 describes in detail how the indicators were built.

The aim behind the creation of a synthetic indicator was to summarise all the data collected from the individual indicators in one single index, to highlight the differences in the level of regulation of retail trade by region. Factor analysis (see Annex A.2), which is generally employed by the OECD for its structural indicators, was used for this purpose, applied to the individual indicators.

Charts 1 and 2 present the resultant synthetic indicator.²⁷ As both charts show, the regional governments' administrative requirements, measured by our indicator, are greater, in general, than a decade ago. The differences between the degree of regulation of the regional governments have also increased over time, despite declining slightly since 2005. In fact, the standard deviation, calculated annually on the basis of the level of regulation of the regional governments, rose from around 0.4 at the end of the 1990s to 0.98 in 2005, before falling back to just under 0.8 in 2006 and 2007.

Various alternative estimates of the synthetic indicator were made to test the robustness of the results. In particular, given that the variable relating to the definition of large retail outlets is the only one that does not represent a theoretical situation (the present criteria under national legislation were considered equivalent to the non-existence of restrictions, meaning that this variable could be affected in the future if national legislation were amended), a new version of the indicator was included, rescaling this variable so that zero denotes classification as a large retail outlet as from 5,000 m². The indicator was also recalculated eliminating the seasonal sales variable, since in this case the regulation seems less important than in the other aspects analysed.²⁸ Moreover, two alternative methods were used for factor extraction (the principal factors method and principal component analysis).²⁹ An indicator built as the

26. Except for the variable relating to the definition of "large retail outlets", in which case 0 denotes 2,500 m² which is the threshold set in national legislation.

27. For calculation of the synthetic indicator the Basque Country was excluded (see Annex A.2 for a detailed explanation of this exclusion).

28. As indicated earlier, the duration of the sales is established in national legislation and what varies are the specific dates set by the regional governments within which retailers may choose to organise their sales.

29. For more information on these techniques, see the bibliography.

average of the individual indicators was also included. Lastly, two estimates were calculated including the Basque Country, the first using the same method as employed in the benchmark estimate, and the second calculated as the simple average of all the individual indicators.

The exercise shows that, in terms of degree of regulation, changes in the criteria used for the base study result in only minor changes in the order of ranking of the regional governments in 2007. Thus, broadly speaking, the main groups remain the same, with no significant moves between regions, although the specific values of the different regions do change. The only exception being the Balearic Islands, as this region proves sensitive to the elimination of the seasonal sales variable and to the use of a simple average instead of factor analysis. In both cases, the region's comparative position worsens. Rescaling the variable relating to the definition of large retail outlets does not change the order of ranking, but it does increase the degree of regulation of all the regions. Conversely, the range in which the indicator moves narrows if the seasonal sales variable is eliminated or if the individual indicators are aggregated using a simple average.

These rankings, once established, may then be compared with the findings of the other authors mentioned in Section 1. This should be done for a year that is included in the highest possible number of studies; 2001 seemed a good choice, as the indicators contained in this study and in those of Rodríguez (2001), Institut Cerdà (2004) and Hoffmaister (2006) were all available for 2001. For that year, the regions with the greatest level of regulation were the same in all the studies. However, in the case of the regions with the lowest level of regulation, the degree of coincidence was somewhat lower, especially vis-à-vis Rodríguez's indicator (2001). The other regions post intermediate values that are difficult to compare, due to the differences between the regulatory aspects analysed and between the aggregation techniques used. The findings are similar comparing our indicator for 2007 with the BBVA indicator (2008).

4 Estimation of the effects of retail trade regulations

As advanced in the introduction, several studies have found that retail trade regulations have significant effects on various economic variables in the sector. Here the synthetic indicator constructed in the previous section will be used to estimate the effects of regulation on commercial density, the numbers employed in the sector and inflation. In addition, a number of tests will be conducted with the individual indicators³⁰ to assess the sensitivity of the inflation rate to different types of regulations.

4.1 Model

The estimates are obtained by analysis using panel data techniques, with the following specification:

$$\ln X_{i,t} = a + \sum \alpha_t T_t + \beta_1 IR_{i,t} + \beta_2 \ln Y_{i,t} + \eta_i + v_{i,t}$$

where $X_{i,t}$ is the economic variable of the retail trade of interest in region i and year t ; a is a constant; T_t are artificial variables (one for each year of the sample) which have a value of one in year t and zero in other years; $IR_{i,t}$ is the regulation indicator of region i in year t ; $Y_{i,t}$ are other explanatory variables of region i in year t ; η_i are unobservable explanatory variables of region i ; and $v_{i,t}$ is an error term. The coefficient β_1 , which accompanies the regulation indicator, is the coefficient of interest in this study.

More specifically, the variables which will be considered are commercial density (calculated for different distribution formats), the employment in the sector and the inflation rate of the retail products sold.³¹ The artificial time variables are intended to capture time effects common to all regions, such as, for example, the cyclical position of the economy. Note that if regulation was very similar in all regions, its effect would be indistinguishable from that reflected by the time variables.

In some cases the significant regulation is not that currently in place; rather, that in force some years earlier may be of greater importance. Specifically, this may be the case when opening a new retail outlet, since several years may elapse between the time the decision is taken and the date when it actually opens its doors to the public (this time may be needed to develop the land, obtain all the relevant permits, build the establishment, etc.). In fact, sector experts estimate that, depending on the municipality, it takes from six to 18 months to open a supermarket, the average being around ten months, and up to four years to open a large retail outlet. Similarly, employment, insofar as it depends on the number of outlets, will also be sensitive to the regulation in place in previous years. For these reasons, the foregoing equation has been estimated for various lags of the regulation variable.

³⁰. In neither case, and for reasons described earlier, do these estimates include the Basque Country.

³¹. For more information about the database, see Annex B.

4.2 Estimation and results

In all estimates, allowance was made for unobservable variables by performing fixed-effects estimation and random-effects estimation,³² and the Hausman test was used to choose between one or the other estimation method. Only the option selected is reported here. In any event, the existence of varying effects across regions was previously confirmed by the Breusch-Pagan test.

Estimates were made for different commercial density variables.³³ Tables 8 to 11 give commercial density estimates for the total retail distribution formats, for traditional food stores, for supermarkets and for hypermarkets, respectively.³⁴ Given that the commercial density variables relate to 1 January of each year, while the regulation variable refers to the yearly average, it was considered appropriate to add, as an explanatory variable, the synthetic regulation indicator (denoted “rspv” in the tables) lagged by at least one period. Also tested as possible additional explanatory variables in the estimation were GDP per capita and the unemployment rate, both as proxies for demand, although with different expected signs (positive for GDP per capita and negative for the unemployment rate). Similarly, the average wage in the sector was included as a cost variable.³⁵ In general, commercial density seems to be sensitive to the unemployment rate; however, except for the estimates relating to hypermarkets and for a single specification in the case of supermarkets, GDP per capita and average wage in the sector usually do not differ significantly from zero.

In any event, it should be noted that the results are not always robust to changes in the specifications and must therefore be regarded with due caution. The aforementioned tables seem to show that a lesser degree of regulation, as measured by our synthetic indicator, is associated with lower commercial density in all the distribution formats analysed, except, as was to be expected, for hypermarkets, where less regulation entailed a higher number of hypermarkets per inhabitant. In addition, the coefficient values estimated tended to be higher in the supermarket density regressions than in those for traditional food stores. This suggests a greater impact of regulation on the former.³⁶ In the specific case of hypermarkets, the regulation found to be significant is that in place five years ago.³⁷ Since the equations refer to the density at 1 January, this may indicate that the time needed to open a hypermarket is around 4.5 years. This is similar to the time reported by Bertrand and Kramarz (2002) for France (four years).

The estimates of the inflation rate in the sector are expressed as per-unit in Table 12. In these equations the signs of GDP per capita, average wage growth in the

32. With fixed effects it is assumed that the unobservable variables vary by region. With random effects it is assumed they also have a distribution for each region.

33. Estimates were also made, by type of outlet, for the number of square metres per inhabitant. However, the results were very similar to others reported here and are thus not included in this paper. They are nonetheless available on request from the authors.

34. Both for this variable and for those presented below, only those equations in which the regulation variable differs significantly from zero at the 5% level are given. The degree of robustness of the proposed estimates to alternative estimates is also reported.

35. For the same reason as that stated for the synthetic regulation indicator, all these variables are lagged by one period.

36. The coefficients of the commercial density equations are not strictly comparable with those of other definitions because they relate to different periods. However, the period is the same when broken down by distribution format.

37. Also, more hypermarkets per inhabitant are observed with increasing GDP per capita, whereas the relationship between average wage in the sector and hypermarket commercial density is negative.

sector and unemployment rate of the region are as expected (positive for the first two and negative for the last). Also, lesser regulation is found to be associated with lower inflation.³⁸ The sign and significance of this relationship between degree of regulation and inflation are relatively robust to alternative specifications. However, the coefficients obtained for the regulation variable vary notably depending on the variables included in the estimate.³⁹

The estimates relating to employment in retailing are shown in Table 13. Again, the signs of GDP per capita (positive) and of the average wage in the sector (negative) are as expected. On this occasion, the degree of regulation is found to be negatively related to employment in the sector, in line with most studies on this subject. This relationship is, moreover, fairly robust to the different specifications adopted for the estimated equation. This variable is sensitive to contemporary regulation and to that in place up to two years earlier.

Lastly, an exercise was carried out with the individual indicators in which the inflation rate was regressed in each case. However, it proved impossible to estimate an equation expressing the regulation of the specific tax on large retail outlets, because, in the period in question, this variable is zero in all cases. Nor was it possible to obtain an equation containing the opening hours regulation variable, since, once again, for the estimation period, the indicator is constant and is the same for all regions, so the effect of this variable does not differ from that of the constant. The results of these estimates are not shown in the tables. In any event, only the estimates made with indicators of moratoria and hard discount store licensing show a sufficiently robust significant relationship with the inflation rate. Specifically, for these two variables, a lesser degree of regulation (no regional licence requirement for hard discount stores or shorter retail moratorium periods) is found to be associated with a lower inflation rate.

38. Note that, unlike in the case of commercial density, the inflation rate and all the explanatory variables measure the annual average value.

39. It should be noted that the estimation period also varies depending on the variables used.

5 Conclusions

Several international and national organizations have repeatedly stated that Spanish retail trade is subject to extensive regulation, generating numerous barriers to competition which, in turn, may be causing distortions in the functioning of the sector. To analyse this issue, a set of regional retail trade regulation indicators was first formulated for the period 1997-2007 relating to legislation on total weekly opening hours, Sunday and public holiday trading, seasonal sales, definitions of establishments requiring a regional government licence, the requirement for hard discount stores to have a regional government licence, moratoria in retail trade licence issuance and specific taxes on large retail outlets. The indicator building strategies followed were, first, that of developing regulation indicators for each of the administrative requirements considered, and, second, that of constructing a synthetic indicator of all of them using factor analysis. A word of caution regarding this synthetic indicator is in order for two reasons. First, only a subset of administrative requirements was taken into account and thus many are excluded,⁴⁰ such as, for example, those imposed by local governments. Second, given that the construction of a synthetic indicator requires weights to be set for each of the factors considered, it was decided to set these weights by a purely statistical method. This has the advantage that it is not affected by the researcher's subjective opinion, but it does not take into account possible differences in the potential impact of each of the regulatory aspects on the different economic variables. Subject to these qualifications, it can be concluded that, in general, the regulation currently in place in the retail trade sector is more restrictive than at the beginning of the period under analysis (1997). The inter-regional differences in the degree of regulation are also greater, and there are significant differences in how they have evolved over time.

The synthetic indicator has been used to explain the regional differences observed in commercial density, employment in the sector and the retail inflation rate. Once again, mention should be made of the limitations of the analysis due, *inter alia*, to the scarcity of information in terms both of variables and number of observations. Consequently, this may affect the robustness of the econometric results. Subject to this qualification, the results seem to confirm the findings of other authors for other countries, which associate greater regulation with higher inflation, lower employment in the sector and higher commercial density. In the latter case, except for hypermarkets, for which lesser regulation is associated with a higher number of hypermarkets per inhabitant.

40. Nevertheless, given the objective of this study, the regulation common to all regions was not taken into account because it has no bearing on the differences in regulation between regions.

Annex A: Indicator construction methodology

1 Quantitative indicators for each variable

As a first step towards constructing a synthetic indicator (methodology described below), it is necessary to convert each regulatory aspect of regional regulations into a numerical variable.

In the case of the regulations on overall weekly opening hours, Sundays and public holidays⁴¹ and seasonal sales, this step is immediate. This is because the variable in question consists, in the first case, of the number of hours and, in the other two cases, of the number of days on which outlets are allowed to open or to offer seasonal discounts, respectively, that is, the variables coincide with the tables presented in Section 2.

Constructing a variable with a single value for each year and region for the definition of large retail outlet is much more complex, given that the regions apply numerous and notably different criteria. The purpose of the proposed indicator is to provide a straightforward and uniform measurement which, taking into account all this information, gives an idea of the greater or lesser degree of restriction implied by the need to apply for a second (specific) trading licence.

For this purpose, a variable was constructed which summarises all the available information in a single figure: the average number of m² above which a specific trading licence is required in a region in a given year. This variable is constructed as follows: first, information is gathered on the minimum requirements for a store to be considered a "large retail outlet" for each region and year. Where regions establish criteria based on quantities other than a specific number of m², for example, on numbers employed (as in the Balearic Islands), "subsidiary" criteria are used which are based on m² (or m² per size of municipality). All this information is aggregated in one single figure of m² per year using the "population affected" criterion. More specifically, the percentage of the population in each region (according to the 2001 census) affected by each limit each year is calculated and the population-weighted population criteria are aggregated.⁴² The resultant variable is presented in Table A.1. The lower the m² value, the greater the restrictions on trade, insofar as, on average, according to the population affected, application for a second licence would be required of smaller retail outlets.

The requirement of a regional licence for setting up hard discount stores was handled more simply, using a binary variable which takes the value 1 for the years and regions where it was in force and the value 0 for the years and regions where it was

41. It should be pointed out that when the Sunday and public holiday variable was constructed for the Basque Country, the de facto situation rather than current legislation was taken into account. This is because the large retail outlets have not opened on Sundays and public holidays in this region, despite, on occasions, having stated their intention to do so [see the appearance of the chairman of the Basque Competition Court (2008)].

42. Thus, for example, according to the criteria applied in Aragon, the total of 1,341 m² in Table A.1 is the sum of 600 m² multiplied by 0.425 (the proportion of the population living in 2001 in municipalities with fewer than 20,000 inhabitants), plus 1,000 m² multiplied by 0.064 (the proportion of the population living in municipalities with 20,000 to 499,999 inhabitants), plus 2,000 m² multiplied by 0.511 (the proportion of the population living in municipalities with at least 500,000 inhabitants).

not. In cases in which the requirement was not in force for a full year, the value it takes corresponds to the percentage, expressed in per-unit terms, of the days in the year in which it was in force. The same procedure was used for the specific taxes and moratoria variables. Only moratoria on large retail outlets are included in the latter variable and, therefore, other moratoria which could be defined as "relative" or of another type are not calculated.

Once the quantitative variables for each regulatory aspect considered were available, they were transformed for cross-comparison purposes. To this end, they were expressed on a scale of 0 to 10, 10 being the maximum restriction level and 0 being the minimum restriction level. This scale is arbitrary and was chosen, without affecting the findings of the paper, for its simplicity. Furthermore, the range of 0 to 10 covers the theoretical situation (of the non-existence of restrictions and maximum restrictions, respectively) and, therefore, it does not reflect the extreme values of the sample.⁴³ Consequently, this range is not sensitive to regulatory changes which may occur in the future.

Thus, the indicator of overall weekly opening hours expresses, on a scale of 0 to 10, the proportion of hours that outlets cannot open, considering a total of 144 hours from Monday to Saturday. Equivalently, the Sunday and public holiday indicator represents the percentage, on a scale of 0 to 10, of Sundays and public holidays on which outlets are not permitted to open,⁴⁴ while the seasonal sales indicator reflects the percentage, on a scale of 0 to 10, of days in the year on which there can be no seasonal discounts.

Table A.1 was taken as the starting point to create an indicator, on a scale of 1 to 10, determining how restrictive the definition of "large retail outlet" is. The figures in the table were recalculated, assigning a value of zero to cases in which the criterion for consideration as a "large retail outlet" is 2,500 m², and a value of 10 to a hypothetical situation in which the second licence is a requirement for all outlets, irrespective of size.⁴⁵

The indicators of moratoria,⁴⁶ of the prerequisite of a regional licence to open hard discount stores and of specific taxes were constructed as the proportion of days on which the specific measure had been in force in the year (expressed on a scale of 0 to 10).

These individual quantitative indicators are presented in Tables A.2 to A.8.

43. The only exception is the variable relating to the definition of "large retail outlets", in which case the non-existence of restrictions (value zero) was considered equivalent to the provisions of national legislation, defining large retail outlets as those with at least 2,500 m².

44. The total number of Sundays and public holidays in a year is 66, or 67 in leap years.

45. That is, 10 would be assigned if the individual indicator was 0 m².

46. It should be noted that when the moratoria indicator was calculated, the only moratoria taken into account were those representing a complete ban on openings of large retail outlets, thus excluding the moratoria in Catalonia on supermarkets in 2001 and the partial moratorium in 2006, and the relative moratoria in force in the Canary Islands.

2 Construction of a synthetic indicator

As indicated above, the aim of the synthetic indicator is to summarise all the information included in the individual indicators in a single index, to highlight the differences in the level of regulation of retail trade by region.

Before creating this indicator, the particular case of the Basque Country should be mentioned. In this region, until a short time ago, there was no legislation on overall weekly opening hours or Sunday and public holiday openings. Consequently, if the national regulations were applied, this would be equivalent to assuming that there were no limits on the overall weekly opening hours and Sunday and public holiday openings envisaged in national legislation. However, as mentioned above, in practice, the large retail outlets in this region do not open on non-business days and there is no evidence of actual compliance with overall weekly opening hours. In these circumstances, and considering that the aim was to create a regulation indicator that could be used as an explanatory variable of the changes in the main sector aggregates at regional level, it was decided to exclude the Basque Country⁴⁷ from the synthetic indicator.

Once the individual indicators had been calculated, the synthetic indicator was constructed using the same methodology as that employed by the OECD⁴⁸ for its structural indicators. Specifically, factor analysis, which makes it possible to obtain a weight for each variable and to aggregate them in a single indicator, was applied. These weights are correlated with the higher or lower variability of the different variables, i.e. factor analysis gives more weight to those variables with a higher variability between the different regions and years. The weights constructed in this way have the advantage of responding to the data, rather than to the subjective opinion of the authors about the importance of any particular variable.

Factor analysis summarises the individual indicators in a number of "factors" which reflect their underlying structure. Specifically, this technique is based on the correlations between individual indicators (see Table A.10) and analyses whether the individual indicators follow any pattern of relationships, so that the data can be reordered into a smaller set of factors which summarises the interrelationships observed. Consequently, for it to make sense to use factor analysis, the variables must be correlated, since if there is no or little correlation it is unlikely they will share common factors. To check that this requirement was met, Bartlett's test of sphericity was applied⁴⁹ and was passed satisfactorily. Similarly, Kaiser, Meyer and Olkin's measure of sample suitability is usually used to confirm that factor analysis is appropriate. This measure, which takes into account partial correlation coefficients,

47. If the Basque Country is not excluded, the indicator obtained is quite different, largely because, as it is considered that this region places no limits on overall weekly opening hours, the variance of this variable increases and its weight in the synthetic indicator also rises. The results obtained when the Basque Country is included are presented in Chart A.1 and in Table A.9. and underline that the measure of suitability of the factor analysis deteriorates, meaning that its application seems inappropriate in this case. Nonetheless, if the Basque Country is included, the synthetic indicator of regulation in this region would have a value of 3.87 in 2007.

48. See Nicoletti et al. (2000), Boylaud and Nicoletti (2001), and Conway and Nicoletti (2006).

49. In Bartlett's test of sphericity the null hypothesis is that there is no correlation between the variables.

also supported the use of this technique for the individual indicators in this paper (see Table A.11).⁵⁰

Each factor is defined as a set of coefficients that measure the correlation between the individual indicators and the latent factor. The principal components method was used to extract the factors.⁵¹ Accordingly, the first component is the combination of individual indicators which explains the largest amount of sample variability; the second component explains the next largest proportion of variance and is uncorrelated with the first component; and so on. The factors obtained in this way are rotated⁵² so that each individual indicator has the closest possible correlation to one with one of the factors, and correlations close to zero with the other factors, making it easier to interpret the factors. Table A.11 shows the results obtained.

In order to construct the synthetic indicator, in keeping with standard practice, only those factors which met the three following criteria were selected: they had an associated eigen-value greater than one; individually they explained at least 10% of the data variance; and together, they explained at least 60% of the data variance. Consequently, the first three factors were selected. Both the first and third factors have a clear economic interpretation. Thus, the first factor basically reflects regulations on opening hours (both overall weekly opening hours and Sunday and public holiday openings), while the third factor relates to licensing regulations (definition of large retail outlets, moratoria on trading licences and the requirement of a regional licence for hard discount stores). Lastly, the second factor is closely related to the seasonal sales and the levying of a specific tax on large outlets.

The last stage for construction of the synthetic indicator was to calculate the weights. Once again, following the OECD methodology, each individual indicator was weighted in accordance with the proportion of variance explained by the associated factor, while each factor in turn was previously weighted, taking into account its contribution to explaining the total sample variance. The resultant weights are presented in Table A.11. The overall weekly opening hours and Sunday and public holiday trading variables accounted for a combined weight of 37%, while the variables related to regional licences (the hard discount stores, large retail outlets and retail moratoria variables) accounted for a weight of 35%. The seasonal sales and specific tax variables each had a weight of 14%.

50. It is considered acceptable to apply a factor analysis model to data as from a value of 0.5 for Kaiser, Meyer and Olkin's measure of sample suitability.

51. The advantage of this method is that since it is descriptive, it requires no assumptions about the data generation process.

52. For the rotation the varimax method was used to minimise the number of variables that have a high loading on the same factor.

Annex B: Description of database

It is difficult to compile sector data on a regional level, and, when obtained, in many cases the data relate to a limited time period.

Commercial density was the first dependent variable used. It was constructed taking, as the denominator, the population according to the Regional Accounts of the INE (National Statistics Office) and, as the numerator, the number of retail activities subject to economic activity tax as at 1 January of each year, drawn from La Caixa's Economic Yearbooks. The advantage of this latter statistical source is that it facilitates a breakdown of retail activities by type of outlet. In particular, estimates were made for the aggregate series, traditional food stores (as an exponent of traditional stores), supermarkets and hypermarkets (as a representative of large retail outlets).

Nevertheless, these series present several weaknesses. First, the breakdown by type of outlet is only available as from 2003. Moreover, the supermarket variable does not distinguish between hard discounters and others; this may affect the results, considering that nine regions have legislation that does distinguish between them. Similarly, in some cases the definition of hypermarkets, which includes outlets as from 1,500 m², may not be very appropriate to reflect the impact of regulation on large retail outlets. Indeed, in three regions (Cantabria, Castile and Leon, and Asturias) this series grows when it coincides with moratoria on large retail outlet openings. Accordingly, the findings must be viewed with due caution.

The source for the numbers employed in retailing was the 1997 Retail Trade Survey and, as from 1999, the INE's Annual Trade Survey. There are, therefore, no data for 1998 and the last year for which data are available is 2006.

Regarding the inflation rate, average annual indices of prices of non-energy goods were compiled, aggregating four of the twelve groups that make up the consumer price index: food and non-alcoholic beverages; alcoholic beverages and tobacco; clothing and footwear; and furniture and household equipment. This gives a series that approximates the type of products sold by retailers.⁵³ Although these indices were calculated with base year 1992 (series up to 2001) and base year 2001 (data for 2002 onward), the findings obtained from the more recent data proved less than satisfactory, probably due partly to the fact that with the new base year, the weightings are reviewed annually. Moreover, given the extent of the methodological differences between the two databases, they were not linked.

For the explanatory variables, the following were considered: GDP per capita, drawn from the INE's Regional Accounts; average wage in the sector, calculated as the ratio between wages and numbers employed according to the 1997 Retail Trade Survey and the Annual Trade Survey for 1999 and subsequent years; and the unemployment rate, drawn from the Labour Force Survey for each region, adjusted for the change in the definition of unemployment in 2002 and for the changes in

⁵³. Although excluding some items, such as personal care products (included in "Others") and cameras (included in "Recreation and culture"), and including some services, such as domestic services (included in "Furniture and household equipment").

methodology and in the questionnaire introduced in 2005. Once again, there are no data for average wages for 1998 and 2007.

REFERENCES

- BBVA (2008). *Distribución comercial: ¿equilibrios de intereses?*, Observatorio Sectorial, November.
- BERTRAND, M., and F. KRAMARZ (2002). "Does entry regulation hinder job creation? Evidence from the French retail industry", *The Quarterly Journal of Economics*, No. 117, November, pp. 1369-1413.
- BOYLAUD, O., and G. NICOLETTI (2001). "Regulatory Reform in Retail Distribution", in *Regulatory Reform*, OECD Economic Studies, No. 32.
- BURDA, M., and P. WEIL (2005). *Blue Laws*, October, mimeo.
- CONWAY, P., and G. NICOLETTI (2006). *Product Market Regulation in the Non-manufacturing Sectors of OECD Countries: Measurement and Highlights*, OECD, Economic Department Working Paper No. 530, December.
- COPENHAGEN ECONOMICS (2005). *Economic Assessment of the Barriers to the Internal Market for Services*, January.
- EUROPEAN COMMISSION (2006). *Council Recommendation on the 2007 up-date of the broad guidelines for the economic policies of the Member States and the Community and on the implementation of Member States' employment policies*, COM (2006) 816 final, December.
- HOFFMAISTER, A. W. (2006). *Barriers to Retail Competition and Prices: Evidence from Spain*, IMF, Working Paper WP/06/231.
- IMF (2004). *Spain: 2003 Article IV Consultation, Country Report*, No. 04/89, March.
- (2005). *Spain: 2004 Article IV Consultation, Country Report*, No. 05/56, February.
- (2006). *Spain: 2006 Article IV Consultation, Country Report*, No. 06/211, June.
- INSTITUT CERDÀ (2004). *Impacto de la regulación comercial en la inflación y en el marco de evolución del comercio*, mimeo.
- LA CAIXA (several years). *Anuario Económico de España*.
- MATEA, M. LL., and E. ORTEGA (2006). "Microeconomic policies", in *The Analysis of the Spanish Economy*, Servicio de Estudios, Banco de España.
- MINISTERIO DE INDUSTRIA, TURISMO Y COMERCIO (2006). "La distribución comercial en España en 2006", *Boletín Económico de Información Comercial Española*, No. 2912, 1 to 10 June.
- NICOLETTI, G., S. SCARPETTA and O. BOYLAUD (2000). *Summary Indicators of Product Market Regulation with an Extension to Employment Protection Legislation*, OECD, Economic Department Working Paper No. 226, April.
- OECD (2005). *Economic Surveys of Spain 2005*.
- (2007a). *Economic Surveys of Spain 2007*.
- (2007b). *Economic Policy Reform: Going for Growth*.
- OREA, L. (2008). *The effect of legal barriers to entry in the Spanish retail market: a local market analysis*, Economic Discussion Paper, EDP 01/2008, May, Department of Economics, University of Oviedo (Spain).
- PEÑA, D. (2002). *Análisis de datos multivariantes*, McGraw-Hill.
- PÉREZ, C. (2004). *Técnicas de Análisis Multivariante de Datos. Aplicaciones con SPSS*, Pearson Educación.
- RODRÍGUEZ, D. (2001). *Política comercial: actividad legislativa de las CCAA*, Documento de trabajo No. 8, Serie Políticas Públicas y Equilibrio Territorial en el Estado de las Autonomías, Instituto de Análisis Económico, Barcelona.
- SCHIVARDI, F., and E. VIVIANO (2008). *Entry barriers in retail trade*, CEPR Discussion Papers No. 6637, January.
- SKUTERUD, M. (2005). "The impact of Sunday shopping on employment and hours of work in the retail industry: Evidence from Canada", *European Economic Review*, No. 49, pp. 1953-1978.
- TRIBUNAL DE DEFENSA DE LA COMPETENCIA (TDC) (2003). *Informe sobre las condiciones de competencia en el sector de la distribución comercial*, Documento I 100/02.
- URIEL, E., and J. ALDÁS (2005). *Análisis Multivariante Aplicado*, Thomson.
- VIVIANO, E. (2006). *Entry regulations and labor market outcomes: evidence from the Italian retail trade sector*, Economic Working Papers, No. 594, June, Bank of Italy, Economic Research Department.

OVERALL WEEKLY OPENING HOURS (a)

TABLE 1

REGION	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
Andalusia	72	72	72	72	90	90	90	90	72	72	72
Aragon	72	72	72	72	90	90	90	90	72	72	72
Balearic Islands	72	72	72	72	72	72	72	72	72	72	72
Canary Islands	72	72	72	72	90	90	90	90	72	72	72
Cantabria	72	72	72	72	90	90	90	90	72	72	72
Castile-La Mancha	72	72	72	72	90	90	90	90	90	72	72
Castile and Leon	72	72	72	72	90	90	90	90	90	90	90
Catalonia	72	72	72	72	90	90	90	90	72	72	72
Valencia	72	72	72	72	90	90	90	90	90	90	90
Extremadura	72	72	72	72	90	90	90	90	72	72	72
Galicia	72	72	72	72	90	90	90	90	72	72	72
Madrid	72	72	72	72	90	90	90	90	90	90	90
Murcia	72	72	72	72	90	90	90	90	72	72	72
Navarre	72	72	72	72	90	90	90	90	90	90	90
Basque Country	No regulations								72	72	72
Asturias	72	72	72	72	90	90	90	90	72	72	72
La Rioja	72	72	72	72	90	90	90	90	90	90	90
STATE	72				90				72		

SOURCE: Banco de España.

a. The vertical lines denote a change in national legislation.

SUNDAY AND PUBLIC HOLIDAY OPENINGS (a)

TABLE 2

REGION	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
Andalusia	8	8	8	8	9	10	11	12	8	8	8
Aragon	8	8	8	8	9	10	11	12	8	8	8
Balearic Islands	8	8	8	8	9	10	5	12	8	8	8
Canary Islands	8	8	8	8	9	10	11	12	9	9	9
Cantabria	8	9	10	10	9	10	11	12	8	8	8
Castile-La Mancha	8	8	8	8	9	10	11	12	8	8	8
Castile and Leon	8	8	8 (d)	8 (d)	9	10	11	12	8	8	8
Catalonia	8	8	8	9	9	10	11	12	8	8	8
Valencia	8	7	8	9	9	9	11	11	10	8	8
Extremadura	9	8	8	8	9	10	11	12	8	8	8
Galicia	10	8 (c)	8 (c)	8 (c)	9 (c)	10 (c)	11 (c)	16 (c)	8 (c)	8 (c)	8 (c)
Madrid	13	13 (c)	13 (c)	14 (c)	18 (c)	19 (c)	21 (c)	21 (c)	20 (c)	20 (c)	20 (c)
Murcia	8	8	8	8	9	10	11	12	12	10	10
Navarre	8	8	8	8	9	10	11	12	12	8	8
Basque Country (b)	0	0	0	0	0	0	0	0	0	0	0
Asturias	7 (e)	8	8	8	9	10	11	12	8	8	8
La Rioja	8	8	8	8	9	10	11	12	8	8	8
STATE	8				9				8		

SOURCE: Banco de España.

a. The vertical lines denote a change in national legislation.

b. In theory, retailers are free to choose the Sundays and public holidays they wish to open, subject to the number of days envisaged in national legislation. In practice there are no Sunday and public holiday openings.

c. Plus one or two local holidays in certain municipalities.

d. Plus a local holiday, in certain circumstances.

e. Although the first regulations, for the period 20/05/1997 to 19/05/1998, envisaged eight days, one of these days corresponded to 1998.

REGION	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
Andalusia	105	105	104	104	104	106	105	104	104	104	104
Aragon	143	142	143	142	144	144	113	113	105	105	126
Balearic Islands	106	106	105	106	106	106	106	106	105	105	106
Canary Islands (b)	104	104	104	104	104	104	104	104	104	104	104
Cantabria	158	157	159	156	158	158	132	159	156	156	157
Castile-La Mancha	163	164	164	165	164	163	163	165	164	164	164
Castile and Leon	156	156	156	156	155	157	156	157	156	156	155
Catalonia	104	104	104	104	103	105	104	105	103	102	101
Valencia	106	118	117	117	114	120	112	118	116	115	114
Extremadura	156	105	105	106	106	105	104	105	105	104	99
Galicia	157	157	157	158	156	157	157	158	157	157	156
Madrid	156	156	157	157	158	157	156	158	157	157	158
Murcia	105	105	104	105	106	106	105	106	103	104	105
Navarre	104	104	104	104	105	105	104	105	103	103	103
Basque Country	151	151	151	152	150	151	151	152	151	151	150
Asturias	105	106	105	106	106	106	106	106	105	103	103
La Rioja	104	104	104	104	104	105	104	105	103	104	103

SOURCE: Banco de España.

- a. The number of days on which retailers may choose to hold seasonal sales. Calculated not including Sundays, but not adjusted for public holidays.
- b. There are minor differences - one day more or less - according to the different islands and years.

REGION	1997		1998		1999		2000		2001		2002	
	Floor space	Conditions based on local population	Floor space	Conditions based on local population	Floor space	Conditions based on local population	Floor space	Conditions based on local population	Floor space	Conditions based on local population	Floor space	Conditions based on local population
ANDALUSIA					2500	Not applicable						
ARAGON					600	Under 20000						
					1000	20000 - 499999						
					2000	Over 500000						
BALEARIC ISLANDS (a)			2500	Not applicable			300	Under 20000	250	Under 3000		
							500	20000-200000	400	3001 - 10000		
							700	Over 200000	600	10001 - 20000		
									800	Over 20000		
									1300	Palma		
CANARY ISLANDS (c)						All islands						
					750	Under 20000						
					1000	20000 - 199999						
					1500	Over 200000						
CANTABRIA					2500	Not applicable						
CASTILE-LA MANCHA	2500	Not applicable					2000	Not applicable				
CASTILE & LEON					1000	Up to 10000						
					1500	10001 - 50000						
					2500	Over 50000						
					2500	In provincial capitals						
CATALONIA			1000	Up to 10000					800	Up to 10000		
			1300	10001 - 25000					1300	10001 - 25000		
			2500	Over 25000					2000	25001 - 240000		
									2500	Over 240000		
VALENCIA					600	Under 40000						
					1000	Over 40000						
EXTREMADURA					2500	Not applicable					750	Under 10000
											1500	10000-50000
											2000	Over 50000
GALICIA					500	Under 9000						
					1000	9000 - 50000						
					2000	Over 50000						
MADRID	2500	Not applicable							1500	Under 10000		
									2000	10000-25000		
									2500	Over 25000		
MURCIA	2500	Not applicable							600	Up to 5000		
									900	5001 - 15000		
									1500	15001 - 35000		
									1800	35001 - 75000		
									2500	Over 75000		
NAVARRRE					1500	Under 12000						
					2500	Over 12000						
					2500	Pamplona and surrounding area						
BASQUE COUNTRY (d)			2000	Not applicable					400	5000		
									800	5000 - 10000		
									1000	10000 - 24999		
									2000	Over 25000		
ASTURIAS (e)					2500	Not applicable						
LA RIOJA					1000	Under 10000						
					1500	10001 - 24999						
					2500	Over 25000						

SOURCE: Banco de España.

a. Floor space refers to retail floor space (not floor area).

b. Between 2002 and 2007, the definition of "large retail outlet" was based on the number of employees (principal criterion). The floor space figures in the table are the subsidiary criterion.

c. Differentiation between the different islands was only established following enactment of Law 10/2003 of 3 April 2003.

d. Between 10/11/2000 and 27/03/2001 the limit was set at 400 m², with certain exceptions according to activity and other characteristics.

e. Law 10/2002 of 19 November 2002 also includes, in its definition of large outlets, stores belonging to chains with more than 25 outlets in the region or with total area in the region of 10000 m².

REGION	2003		2004		2005		2006		2007	
	Floor space	Conditions based on local population	Floor space	Conditions based on local population	Floor space	Conditions based on local population	Floor space	Conditions based on local population	Floor space	Conditions based on local population
ANDALUSIA					1000	Under 10000				
					1300	10000 - 25000				
					2500	Over 25000				
ARAGON					600	Under 20000				
					1000	20000 - 499999				
					2000	Over 500000				
BALEARIC ISLANDS (b)					250	Under 3000				
					400	3001 - 10000				
					600	10001 - 20000				
					800	Over 20000				
					1300	Palma				
CANARY ISLANDS (c)					750	Under 20000				
	Gran Canaria & Tenerife				1500	20000 - 200000				
						2000	Over 200000			
El Hierro & La Gomera				500	Not applicable					
Fuerteventura, Lanzarote & La Palma					750	Under 20000				
					1000	Over 20000				
CANTABRIA					2500	Not applicable				
CASTILLA LA MANCHA	2000	Not applicable			750	Up to 10000				
					1000	10001 - 25000				
					2000	Over 25000				
CASTILE & LEON					1000	Up to 10000				
					1500	10001 - 50000				
					2000	Over 50000				
CATALONIA					800	Up to 10000				
					1300	10001 - 25000				
					2000	25001 - 240000				
					2500	Over 240000				
VALENCIA					600	Under 40000				
					1000	Over 40000				
EXTREMADURA					750	Under 10000				
					1500	10000 - 50000				
					2000	Over 50000				
GALICIA	500	Under 9000			2500	Not applicable				
	1000	9000 - 50000								
	2000	Over 50000								
MADRID					1500	Under 10000				
					2000	10000- 25000				
					2500	Over 25000				
MURCIA					600	Up to 5000				
					900	5001 - 15000				
					1500	15001 - 35000				
					1800	35001 - 75000				
					2500	Over 75000				
NAVARRRE					1500	Under 12000				
					2500	Over 12000				
					2500	Pamplona and surrounding area				
BASQUE COUNTRY (d)					400	5000				
					800	5000 - 10000				
					1000	10000 - 24999				
					2000	Over 25000				
ASTURIAS (e)					2500	Not applicable				
LA RIOJA					1000	Under 10000				
					1500	10001 - 24999				
					2500	Over 25000				

SOURCE: Banco de España.

a. Floor space refers to retail floor space (not floor area).

b. Between 2002 and 2007, the definition of "large retail outlet" was based on the number of employees (principal criterion). The floor space figures in the table are the subsidiary criterion.

c. Differentiation between the different islands was only established following enactment of Law 10/2003 of 3 April 2003.

d. Between 10/11/2000 and 27/03/2001 the limit was set at 400 m², with certain exceptions according to activity and other characteristics.

e. Law 10/2002 of 19 November 2002 also includes, in its definition of large outlets, stores belonging to chains with more than 25 outlets in the region or with total area in the region of 10000 m².

DURATION (IN DAYS) OF SPECIFIC TRADING LICENCE (OR EQUIVALENT MEASURE BY REGION)
FOR HARD DISCOUNT STORES

TABLE 5

REGION	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
Andalusia	0	0	0	0	0	4	365	366	365	365	365
Aragon	0	0	0	0	209	365	365	366	252	0	0
Balearic Islands	0	0	0	0	0	0	0	0	0	0	0
Canary Islands	0	0	0	0	0	0	252	366	365	365	365
Cantabria	0	0	0	0	0	299	365	366	365	365	365
Castile-La Mancha	0	0	0	0	0	0	0	0	0	0	0
Castile and Leon	0	0	0	0	0	0	350	366	365	365	365
Catalonia	0	0	0	0	0	0	0	0	0	0	0
Valencia	0	0	0	0	0	0	0	0	0	0	0
Extremadura	0	0	0	0	0	0	0	0	0	44	365
Galicia	0	0	0	0	0	0	0	0	0	0	0
Madrid	0	0	226	366	366	365	365	366	365	365	365
Murcia	0	0	296	366	366	365	365	366	365	365	365
Navarre (a)	0	0	0	0	0	0	0	0	0	0	0
Basque Country	0	0	0	0	0	0	0	0	0	0	0
Asturias (b)	0	0	0	0	0	40	365	366	365	365	365
La Rioja	0	0	0	0	0	0	0	0	0	0	0

SOURCE: Banco de España.

- a. Regional Law 17/2001 of 12 July 2001 establishes a definition of hard discount stores but does not make them subject to granting of a specific regional licence.
b. In this case, Law 10/2002 of 19 November 2002 establishes the need for a prior report which may be considered equivalent to a specific trading licence.

SPECIFIC TAX ON LARGE RETAIL OUTLETS (a)

TABLE 6

REGION	REGULATION	TAX BASE	TAX RATE	APPLICABLE
Aragon	Regional Law 13/2005 of 30 December 2005. Legislative Decree 1/2007 of 18 September 2007	Total floor space of retail outlets (in m2). First 2,000 m2 are exempt.	On first 1,000 m2 (over and above 2,000 m2): €12/m2. On next 2,000 m2: €15/m2. On next 5,000 m2: €17.40/m2. Thereafter: €19/m2.	Since 1/1/2006
Catalonia	Regional Law 16/2000 of 29 December 2000	Total floor space of retail outlets (in m2). First 2,499 m2 are exempt. The greater the surface area, the higher the tax.	€17.429/m2	Since 1/1/2001 (b)
Navarre	Regional Law 23/2001 of 27 November 2001	Total floor space of retail outlets (in m2). Exempt: first 2,499 m2 in Pamplona and municipalities with over 12,000 inhabitants; first 1,499 m2 elsewhere. The greater the surface area, the higher the tax.	€12/m2	Since 8/12/2001
Asturias	Regional Law 15/2002 of 27 December 2002	Car park area of large retail outlets, over and above 1,999 m2 (exemption threshold). Tax base adjusted up according to outlets' catchment area and floor space.	€17/m2	Since 1/1/2003

SOURCE: Banco de España.

- a. The table only includes those regions that levy specific taxes on large retail outlets.
b. Measure suspended for 70 days between 24 April and 3 July 2001 by the Constitutional Court.

MORATORIUM OR SUSPENSION PERIODS, BY YEAR AND REGION (a)

TABLE 7

REGION	SUMMARY	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
Andalusia	01/01/2002-27/06/2003	0	0	0	0	0	365	178	0	0	0	0
Aragon	06/06/2001-10/09/2005 for Zaragoza area	0	0	0	0	209	365	365	366	253	0	0
Balearic Islands	From 22/01/1997 to 22/01/2002 New moratorium as from 21/05/2005	346	365	365	366	365	22	0	0	225	365	365
Canary Islands	"Relative" moratorium since 16/11/1994	365	365	365	366	365	365	365	366	365	365	365
Cantabria	05/07/2001-06/07/2006	0	0	0	0	180	365	365	366	365	187	0
Castile and Leon	13/01/2003-31/12/2005	0	0	0	0	0	0	353	366	365	0	0
Catalonia	Suspension between 27/03/1997 and 27/09/1997. Suspension between 06/01/2001 and 02/08/2001 also affecting supermarkets (outlets with 400- 2,499 m ²). Suspension between 13/01/2005 and 13/01/2006. Partial suspension between 14/01/2006 and 13/07/2006.	185	0	0	0	209	0	0	0	353	194	0
Navarre	Moratoria from 12/04/2003 to 22/04/2004	0	0	0	0	0	0	264	113	0	0	0
Basque Country	01/01/2001-28/03/2001	0	0	0	0	87	0	0	0	0	0	0
Asturias	20/12/2003-20/12/2005	0	0	0	0	0	0	12	366	354	0	0

SOURCE: Banco de España.

a. The table only includes those regions that establish moratoria. The periods are calculated according to the number of days on which the moratoria are in force each year.

	1	2	3	4	5
ESTIMATION METHOD	RANDOM EFFECTS				
unemployment rate (t-1)	-0.0062 (-3.66)	-0.0061 (-2.91)	-0.0077 (-3.15)	-0.0065 (-2.34)	-0.0089 (-2.85)
rspv (t-1)	0.0242 (5.09)				
rspv (t-2)		0.0228 (4.79)			
rspv (t-3)			0.0253 (4.77)		
rspv (t-4)				0.0272 (4.63)	
rspv (t-5)					0.0194 (2.01)
constant	-3.8352 (-103.44)	-3.8261 (-93.16)	-3.8185 (-81.74)	-3.8326 (-77.01)	-3.7715 (-56.20)
Time variables	No	No	No	No	No
Observations	160	144	128	112	96
Groups	16	16	16	16	16
R2 (within)	0.2427	0.2215	0.2504	0.2090	0.1570
Breusch-Pagan test (value P)	0	0	0	0	0
Hausman test (value P)	0.9814	0.9298	0.7090	0.6322	0.2805

SOURCE: Banco de España.

a. Between brackets, Student's t-statistic.

ESTIMATES OF NUMBER OF TRADITIONAL FOODSTORES / POPULATION (a)

TABLE 9

	1	2	3	4
ESTIMATION METHOD		RANDOM EFFECTS		FIXED EFFECTS
unemployment rate (t-1)	-0.0108 (-5.01)	-0.0104 (-4.63)	-0.0106 (-4.60)	
rspv (t-1)	0.0168 (3.70)			
rspv (t-2)		0.0108 (2.27)		
rspv (t-3)			0.0107 (2.07)	
rspv (t-4)				0.0197 (2.93)
constant	-4.8654 (-65.98)	-4.8395 (-68.45)	-4.8358 (-70.54)	-4.9735 (-177.91)
Time variables	No	No	No	No
Observations	80	80	80	80
Groups	16	16	16	16
R2 (within)	0.2818	0.2619	0.2645	0.1297
Breusch-Pagan test (value P)	0	0	0	0
Hausman test (value P)	0.9598	0.9926	0.9948	(b)

SOURCE: Banco de España.

a. Between brackets, Student's t-statistic.

b. The equation does not meet the asymptotic hypotheses for the Hausman test.

ESTIMATES OF NUMBER OF SUPERMARKETS / POPULATION (a)

TABLE 10

	1	2	3	4	5	6	7
ESTIMATION METHOD	FIXED EFFECTS	RANDOM EFFECTS		FIXED EFFECTS	RANDOM EFFECTS	FIXED EFFECTS	RANDOM EFFECTS
GDP per capita (t-1)			0.5532 (5.85)				
unemployment rate (t-1)	-0.0402 (-5.34)			-0.0339 (-3.66)		-0.0384 (-4.61)	
rspv (t-1)	0.0705 (2.05)	0.0443 (2.19)					
rspv (t-2)			0.0493 (3.05)	0.0748 (2.39)	0.0488 (3.06)		
rspv (t-3)						0.0505 (1.97)	
rspv (t-5)							0.0630 (3.95)
constant	-7.3188 (-38.10)	-7.5660 (-61.65)	-13.0467 (-14.49)	-7.3883 (-36.52)	-7.5025 (-62.01)	-7.2276 (-43.91)	-7.6425 (-68.57)
Time variables	No	Yes	No	No	Yes	No	No
Observations	80	80	80	80	80	80	80
Groups	16	16	16	16	16	16	16
R2 (within)	0.4827	0.6916	0.7081	0.6008	0.7348	0.4674	0.1604
Breusch-Pagan test (value P)	0	0	0	0	0	0	0
Hausman test (value P)	(b)	0.9715	(b)	(b)	0.8214	(b)	0.3105
Wald test, time var. (value P)	-	0	-	-	0	-	-

SOURCE: Banco de España.

a. Between brackets, Student's t-statistic.

b. The equation does not meet the asymptotic hypotheses for the Hausman test.

ESTIMATES OF NUMBER OF HYPERMARKETS / POPULATION (a)

TABLE 11

	1
ESTIMATION METHOD	FIXED EFFECTS
GDP per capita (t-1)	2.1871 (5.56)
Average wage (t-1)	-0.6601 (-1.99)
rspv (t-5)	-0.0725 (-2.27)
constant	-31.0725 (-9.54)
Time variables	No
Observations	96
Groups	16
R2 (within)	0.6863
Breusch-Pagan test (value P)	0
Hausman test (value P)	0.0093

SOURCE: Banco de España.

a. Between brackets, Student's t-statistic.

	1	2	3	4	5	6	7
ESTIMATION METHOD	FIXED EFFECTS						RANDOM EFFECTS
GDP per capita	0.3467 (12.31)		0.1527 (13.06)		0.3282 (14.49)	0.3520 (17.18)	
unemployment rate		-0.0032 (-3.75)		-0.0071 (-8.29)	-0.0022 (-2.13)		
average wage (t) - average wage (t-1)	0.0162 (2.22)					0.0128 (2.85)	
rspv (t-1)	0.0077 (2.23)	0.0061 (2.30)					
rspv (t-2)			0.0064 (2.2)	0.0143 (8.34)			
rspv (t-3)					0.0226 (2.79)	0.0259 (3.77)	0.0009 (2.47)
constant	-3.3439 (-12.53)	0.0363 (2.02)	-1.4634 (-13.45)	0.0423 (3.28)	-3.1988 (-13.87)	-3.4617 (-16.66)	0.0182 (9.01)
Time variables	No	No	No	No	No	No	Yes
Observations	32	64	48	48	32	32	80
Groups	16	16	16	16	16	16	16
R2 (within)	0.9428	0.2891	0.9583	0.4242	0.9547	0.9617	0.6129
Breusch-Pagan test (value P)	0.0022	0.0474	0.0454	0.0237	0.0018	0.0022	0
Hausman test (value P)	0.0000	0.0035	0	0.0002	0	(b)	0.9981
Wald test, time var. (value P)	-	-	-	-	-	-	0

SOURCE: Banco de España.

a. Between brackets, Student's t-statistic.

b. The equation does not meet the asymptotic hypotheses for the Hausman test.

ESTIMATES OF NUMBERS EMPLOYED IN RETAILING (a)

TABLE 13

	1	2	3	4	5	6
ESTIMATION METHOD	FIXED EFFECTS	RANDOM EFFECTS	FIXED EFFECTS	RANDOM EFFECTS	FIXED EFFECTS	RANDOM EFFECTS
GDP per capita	0.8015 (8.93)		1.3564 (4.57)		1.3421 (4.56)	
Average wage	-0.2006 (-2.81)	-0.8452 (-3.6)	-0.7221 (-2.68)	-0.8871 (-3.36)	-0.7506 (-2.73)	-0.9305 (-3.44)
rspv	-0.0342 (-2.39)	-0.0287 (-2.43)				
rspv (t-1)			-0.0443 (-2.85)	-0.0316 (-3.14)		
rspv (t-2)					-0.0369 (-3.04)	-0.0292 (-2.74)
constant	3.7947 (5.25)	12.6776 (24.88)	-0.5009 (-0.22)	12.7127 (24.96)	-0.3391 (-0.15)	12.7846 (24.53)
Time variables	No	Yes	No	Yes	No	Yes
Observations	144	144	128	128	128	128
Groups	16	16	16	16	16	16
R2 (within)	0.6461	0.7419	0.5720	0.6642	0.5543	0.6579
Breusch-Pagan test (value P)	0	0	0	0	0	0
Hausman test (value P)	(b)	0.9615	(b)	0.9797	(b)	0.7358
Wald test, time var. (value P)	-	0	-	0	-	0

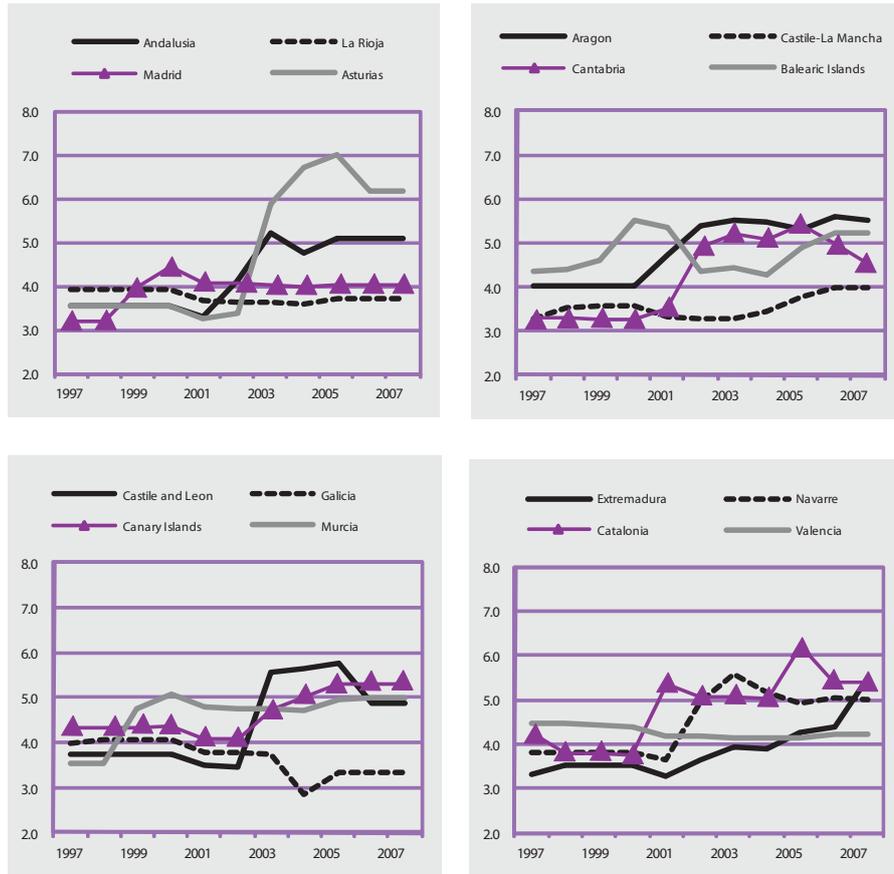
SOURCE: Banco de España.

a. Between brackets, Student's t-statistic.

b. The equation does not meet the asymptotic hypotheses for the Hausman test.

INDICATOR OF RETAIL TRADE RESTRICTION BY REGION (a)

CHART 1

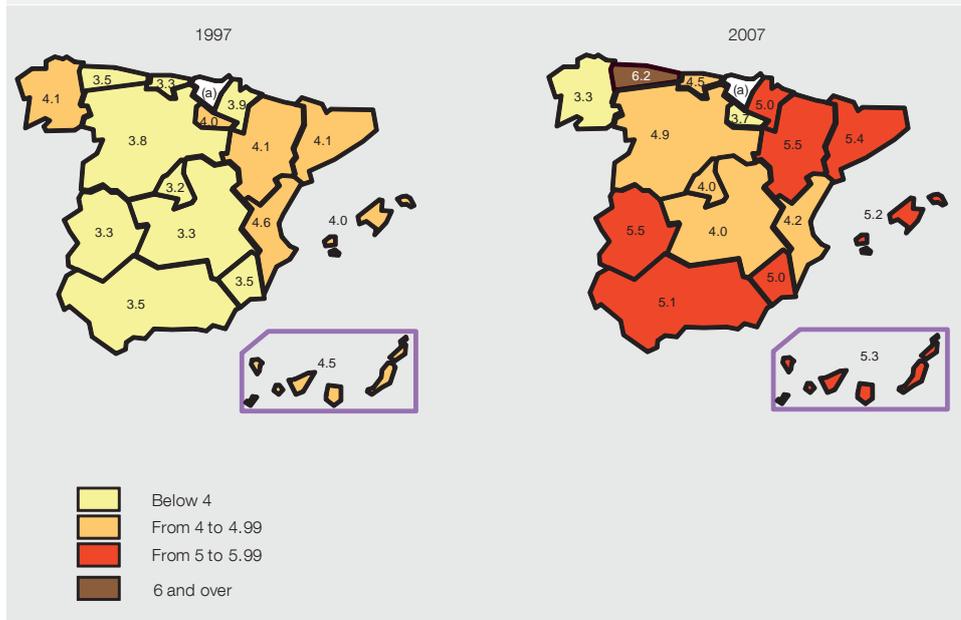


SOURCE: Banco de España.

a. Excluding the Basque Country.

LEVEL OF REGULATION OF RETAIL TRADE BY REGION

CHART 2



SOURCE: Banco de España.

a. Not including the Basque Country.

MINIMUM FLOOR SPACE REQUIRED TO BE DEEMED LARGE RETAIL OUTLET ACCORDING TO POPULATION WEIGHTED BY MUNICIPALITY CRITERION TABLE A.1

REGION	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
Andalusia	2500	2500	2500	2500	2500	2497	1924	1924	1924	1924	1924
Aragon	1341	1341	1341	1341	1341	1341	1341	1341	1341	1341	1341
Balearic Islands	2500	2500	2162	511	752	987	987	987	987	987	987
Canary Islands	1036	1036	1036	1036	1036	1036	1309	1431	1431	1431	1431
Cantabria	2500	2500	2500	2500	2500	2500	2500	2500	2500	2500	2500
Castile-La Mancha	2500	2050	2000	2000	2000	2000	2000	1608	1231	1231	1231
Castile and Leon	1729	1729	1729	1729	1729	1729	1494	1485	1485	1485	1485
Catalonia	2054	2024	2024	2024	1780	1775	1775	1775	1775	1775	1775
Valencia	787	787	787	787	787	787	787	787	787	787	787
Extremadura	2500	2500	2500	2500	2500	1802	1207	1207	1207	1207	1207
Galicia	1199	1199	1199	1199	1199	1199	1199	2500	2500	2500	2500
Madrid	2500	2500	2456	2428	2428	2428	2428	2428	2428	2428	2428
Murcia	2500	2500	2046	1932	1932	1932	1932	1932	1932	1932	1932
Navarre	1977	1977	1977	1977	1977	1977	1977	1977	1977	1977	1977
Basque Country	2000	2000	2000	2000	1548	1544	1544	1544	1544	1544	1544
Asturias	2500	2500	2500	2500	2500	2500	2500	2500	2500	2500	2500
La Rioja	1783	1783	1783	1783	1783	1783	1783	1783	1783	1783	1783

SOURCE: Banco de España.

OVERALL WEEKLY OPENING HOURS INDICATOR (Base 10) TABLE A.2

REGION	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
Andalusia	5.0	5.0	5.0	5.0	3.8	3.8	3.8	3.8	5.0	5.0	5.0
Aragon	5.0	5.0	5.0	5.0	3.8	3.8	3.8	3.8	5.0	5.0	5.0
Balearic Islands	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Canary Islands	5.0	5.0	5.0	5.0	3.8	3.8	3.8	3.8	5.0	5.0	5.0
Cantabria	5.0	5.0	5.0	5.0	3.8	3.8	3.8	3.8	5.0	5.0	5.0
Castile-La Mancha	5.0	5.0	5.0	5.0	3.8	3.8	3.8	3.8	3.8	5.0	5.0
Castile and Leon	5.0	5.0	5.0	5.0	3.8	3.8	3.8	3.8	3.8	3.8	3.8
Catalonia	5.0	5.0	5.0	5.0	3.8	3.8	3.8	3.8	5.0	5.0	5.0
Valencia	5.0	5.0	5.0	5.0	3.8	3.8	3.8	3.8	3.8	3.8	3.8
Extremadura	5.0	5.0	5.0	5.0	3.8	3.8	3.8	3.8	5.0	5.0	5.0
Galicia	5.0	5.0	5.0	5.0	3.8	3.8	3.8	3.8	5.0	5.0	5.0
Madrid	5.0	5.0	5.0	5.0	3.8	3.8	3.8	3.8	3.8	3.8	3.8
Murcia	5.0	5.0	5.0	5.0	3.8	3.8	3.8	3.8	5.0	5.0	5.0
Navarre	5.0	5.0	5.0	5.0	3.8	3.8	3.8	3.8	3.8	3.8	3.8
Basque Country	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.0	5.0	5.0
Asturias	5.0	5.0	5.0	5.0	3.8	3.8	3.8	3.8	5.0	5.0	5.0
La Rioja	5.0	5.0	5.0	5.0	3.8	3.8	3.8	3.8	3.8	3.8	3.8

SOURCE: Banco de España.

SUNDAY AND PUBLIC HOLIDAY OPENINGS INDICATOR
(Base 10)

TABLE A.3

REGION	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
Andalusia	8.8	8.8	8.8	8.8	8.6	8.5	8.3	8.2	8.8	8.8	8.8
Aragon	8.8	8.8	8.8	8.8	8.6	8.5	8.3	8.2	8.8	8.8	8.8
Balearic Islands	8.8	8.8	8.8	8.8	8.6	8.5	9.2	8.2	8.8	8.8	8.8
Canary Islands	8.8	8.8	8.8	8.8	8.6	8.5	8.3	8.2	8.6	8.6	8.6
Cantabria	8.8	8.6	8.5	8.5	8.6	8.5	8.3	8.2	8.8	8.8	8.8
Castile-La Mancha	8.8	8.8	8.8	8.8	8.6	8.5	8.3	8.2	8.8	8.8	8.8
Castile and Leon	8.8	8.8	8.8	8.8	8.6	8.5	8.3	8.2	8.8	8.8	8.8
Catalonia	8.8	8.8	8.8	8.6	8.6	8.5	8.3	8.2	8.8	8.8	8.8
Valencia	8.8	8.9	8.8	8.6	8.6	8.6	8.3	8.3	8.5	8.8	8.8
Extremadura	8.6	8.8	8.8	8.8	8.6	8.5	8.3	8.2	8.8	8.8	8.8
Galicia	8.5	8.8	8.8	8.8	8.6	8.5	8.3	7.6	8.8	8.8	8.8
Madrid	8.0	8.0	8.0	7.9	7.3	7.1	6.8	6.8	7.0	7.0	7.0
Murcia	8.8	8.8	8.8	8.8	8.6	8.5	8.3	8.2	8.2	8.5	8.5
Navarre	8.8	8.8	8.8	8.8	8.6	8.5	8.3	8.2	8.2	8.8	8.8
Basque Country	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Asturias	8.9	8.8	8.8	8.8	8.6	8.5	8.3	8.2	8.8	8.8	8.8
La Rioja	8.8	8.8	8.8	8.8	8.6	8.5	8.3	8.2	8.8	8.8	8.8

SOURCE: Banco de España.

SEASONAL SALES INDICATOR
(Base 10)

TABLE A.4

REGION	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
Andalusia	7.1	7.1	7.2	7.2	7.2	7.1	7.1	7.2	7.2	7.2	7.2
Aragon	6.1	6.1	6.1	6.1	6.1	6.1	6.9	6.9	7.1	7.1	6.5
Balearic Islands	7.1	7.1	7.1	7.1	7.1	7.1	7.1	7.1	7.1	7.1	7.1
Canary Islands	7.2	7.2	7.2	7.2	7.2	7.2	7.2	7.2	7.2	7.2	7.2
Cantabria	5.7	5.7	5.6	5.7	5.7	5.7	6.4	5.7	5.7	5.7	5.7
Castile-La Mancha	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
Castile and Leon	5.7	5.7	5.7	5.7	5.8	5.7	5.7	5.7	5.7	5.7	5.8
Catalonia	7.2	7.2	7.2	7.2	7.2	7.1	7.2	7.1	7.2	7.2	7.2
Valencia	7.1	6.8	6.8	6.8	6.9	6.7	6.9	6.8	6.8	6.8	6.9
Extremadura	5.7	7.1	7.1	7.1	7.1	7.1	7.2	7.1	7.1	7.2	7.3
Galicia	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7
Madrid	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7
Murcia	7.1	7.1	7.2	7.1	7.1	7.1	7.1	7.1	7.2	7.2	7.1
Navarre	7.2	7.2	7.2	7.2	7.1	7.1	7.2	7.1	7.2	7.2	7.2
Basque Country	5.9	5.9	5.9	5.8	5.9	5.9	5.9	5.8	5.9	5.9	5.9
Asturias	7.1	7.1	7.1	7.1	7.1	7.1	7.1	7.1	7.1	7.2	7.2
La Rioja	7.2	7.2	7.2	7.2	7.2	7.1	7.2	7.1	7.2	7.2	7.2

SOURCE: Banco de España.

DEFINITION OF LARGE RETAIL OUTLET INDICATOR
(Base 10)

TABLE A.5

REGION	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
Andalusia	0.0	0.0	0.0	0.0	0.0	0.0	2.3	2.3	2.3	2.3	2.3
Aragon	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6
Balearic Islands	0.0	0.0	1.4	8.0	7.0	6.1	6.1	6.1	6.1	6.1	6.1
Canary Islands	5.9	5.9	5.9	5.9	5.9	5.9	4.8	4.3	4.3	4.3	4.3
Cantabria	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Castile-La Mancha	0.0	1.8	2.0	2.0	2.0	2.0	2.0	3.6	5.1	5.1	5.1
Castile and Leon	3.1	3.1	3.1	3.1	3.1	3.1	4.0	4.1	4.1	4.1	4.1
Catalonia	1.8	1.9	1.9	1.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9
Valencia	6.9	6.9	6.9	6.9	6.9	6.9	6.9	6.9	6.9	6.9	6.9
Extremadura	0.0	0.0	0.0	0.0	0.0	2.8	5.2	5.2	5.2	5.2	5.2
Galicia	5.2	5.2	5.2	5.2	5.2	5.2	5.2	0.0	0.0	0.0	0.0
Madrid	0.0	0.0	0.2	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Murcia	0.0	0.0	1.8	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3
Navarre	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1
Basque Country	2.0	2.0	2.0	2.0	3.8	3.8	3.8	3.8	3.8	3.8	3.8
Asturias	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
La Rioja	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9

SOURCE: Banco de España.

SPECIFIC LICENCE FOR HARD DISCOUNT STORES INDICATOR
(Base 10)

TABLE A.6

REGION	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
Andalusia	0	0	0	0	0	0.1	10	10	10	10	10
Aragon	0	0	0	0	5.7	10	10	10	6.9	0	0
Balearic Islands	0	0	0	0	0	0	0	0	0	0	0
Canary Islands	0	0	0	0	0	0	6.9	10	10	10	10
Cantabria	0	0	0	0	0	8.2	10	10	10	10	10
Castile-La Mancha	0	0	0	0	0	0	0	0	0	0	0
Castile and Leon	0	0	0	0	0	0	9.6	10	10	10	10
Catalonia	0	0	0	0	0	0	0	0	0	0	0
Valencia	0	0	0	0	0	0	0	0	0	0	0
Extremadura	0	0	0	0	0	0	0	0	0	1.2	10
Galicia	0	0	0	0	0	0	0	0	0	0	0
Madrid	0	0	6.2	10	10	10	10	10	10	10	10
Murcia	0	0	8.1	10	10	10	10	10	10	10	10
Navarre	0	0	0	0	0	0	0	0	0	0	0
Basque Country	0	0	0	0	0	0	0	0	0	0	0
Asturias	0	0	0	0	0	1.1	10	10	10	10	10
La Rioja	0	0	0	0	0	0	0	0	0	0	0

SOURCE: Banco de España.

SPECIFIC TAX ON LARGE RETAIL OUTLETS INDICATOR
(Base 10)

TABLE A.7

REGION	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
Andalusia	0	0	0	0	0	0	0	0	0	0	0
Aragon	0	0	0	0	0	0	0	0	0	10	10
Balearic Islands	0	0	0	0	0	0	0	0	0	0	0
Canary Islands	0	0	0	0	0	0	0	0	0	0	0
Cantabria	0	0	0	0	0	0	0	0	0	0	0
Castile-La Mancha	0	0	0	0	0	0	0	0	0	0	0
Castile and Leon	0	0	0	0	0	0	0	0	0	0	0
Catalonia	0	0	0	0	8.1	10	10	10	10	10	10
Valencia	0	0	0	0	0	0	0	0	0	0	0
Extremadura	0	0	0	0	0	0	0	0	0	0	0
Galicia	0	0	0	0	0	0	0	0	0	0	0
Madrid	0	0	0	0	0	0	0	0	0	0	0
Murcia	0	0	0	0	0	0	0	0	0	0	0
Navarre	0	0	0	0	0.7	10	10	10	10	10	10
Basque Country	0	0	0	0	0	0	0	0	0	0	0
Asturias	0	0	0	0	0	0	10	10	10	10	10
La Rioja	0	0	0	0	0	0	0	0	0	0	0

SOURCE: Banco de España.

MORATORIA INDICATOR
(Base 10)

TABLE A.8

REGION	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
Andalusia	0	0	0	0	0	10	4.9	0	0	0	0
Aragon	0	0	0	0	2.9	5.1	5.1	5.1	3.5	0	0
Balearic Islands	9.5	10	10	10	10	0.6	0	0	6.2	10	10
Canary Islands	0	0	0	0	0	0	0	0	0	0	0
Cantabria	0	0	0	0	4.9	10	10	10	10	5.1	0
Castile-La Mancha	0	0	0	0	0	0	0	0	0	0	0
Castile and Leon	0	0	0	0	0	0	9.7	10	10	0	0
Catalonia	5.1	0	0	0	5.7	0	0	0	9.7	0.4	0
Valencia	0	0	0	0	0	0	0	0	0	0	0
Extremadura	0	0	0	0	0	0	0	0	0	0	0
Galicia	0	0	0	0	0	0	0	0	0	0	0
Madrid	0	0	0	0	0	0	0	0	0	0	0
Murcia	0	0	0	0	0	0	0	0	0	0	0
Navarre	0	0	0	0	0	0	7.2	3.1	0	0	0
Basque Country	0	0	0	0	2.4	0	0	0	0	0	0
Asturias	0	0	0	0	0	0	0.3	10	9.7	0	0
La Rioja	0	0	0	0	0	0	0	0	0	0	0

SOURCE: Banco de España.

VARIABLE	FACTOR 1		FACTOR 2		FACTOR 3	
	Loading factor	Weight of variable in factor	Loading factor	Weight of variable in factor	Loading factor	Weight of variable in factor
Overall weekly opening hours	-0.101	0.006	0.070	0.004	0.850	0.603
Seasonal sales	0.213	0.028	0.692	0.366	0.423	0.149
Sunday & public holiday openings	0.703	0.305	0.077	0.004	-0.429	0.154
Specific taxes	-0.073	0.003	0.786	0.472	-0.072	0.004
Hard discount licence	-0.778	0.373	0.030	0.001	-0.032	0.001
Moratoria	-0.364	0.082	0.449	0.154	-0.307	0.079
Definition of large retail outlet	0.572	0.202	0.017	0.000	0.108	0.010
Weight of factor in synthetic indicator		0.393		0.318		0.290
Selection criteria						
Eigen values		1.62		1.31		1.20
Variance explained by each factor		23.1		18.7		17.1
Variance explained by factors				58.9		
Bartlett's test of sphericity (21 degrees of freedom)				102.6		
Kaiser, Meyer and Olkin's measure of sample suitability				0.47		

VARIABLE	WEIGHT OF VARIABLE IN SYNTHETIC INDICATOR
Overall weekly opening hours	0.179
Seasonal sales	0.170
Sunday & public holiday openings	0.166
Specific taxes	0.152
Hard discount licence	0.147
Moratoria	0.104
Definition of large retail outlet	0.082

SOURCE: Banco de España.

a. Factor analysis using the principal components method and rotating the factors using the varimax method. Includes the Basque Country.

CORRELATION BETWEEN VARIABLES (a)

TABLE A.10

	Overall weekly opening hours	Sunday & public holiday openings	Seasonal sales	Specific taxes	Definition of large retail outlet	Hard discount licence	Moratoria
Overall weekly opening hours	1						
Sunday & public holiday openings	0.4919	1					
Seasonal sales	0.0722	0.2823	1				
Specific taxes	-0.1180	0.0095	0.2715	1			
Definition of large retail outlet	-0.0444	0.2252	0.1459	-0.1055	1		
Hard discount licence	-0.1905	-0.4064	-0.0734	-0.0193	-0.1959	1	
Moratoria	-0.0653	0.0280	0.0167	0.0997	-0.0321	0.2051	1

SOURCE: Banco de España.

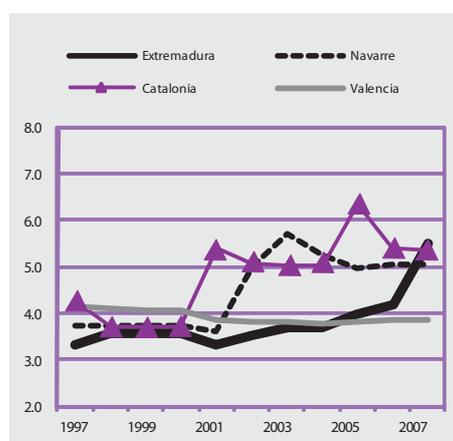
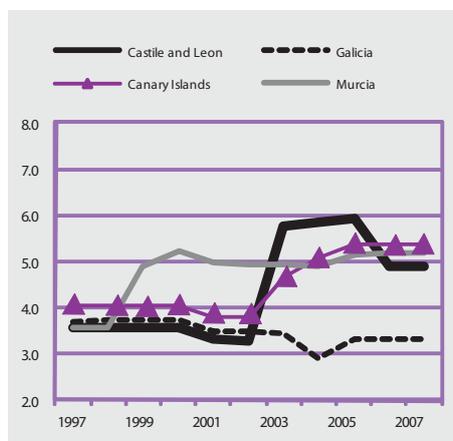
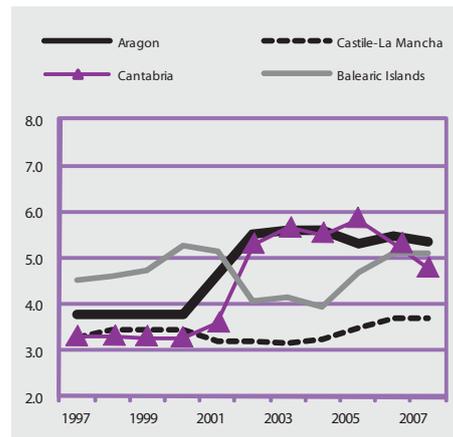
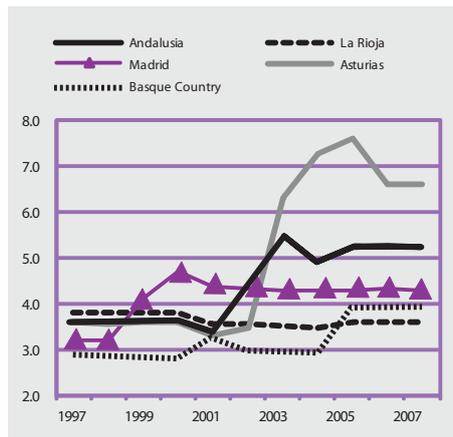
a. Excluding the Basque Country.

VARIABLE	FACTOR 1		FACTOR 2		FACTOR 3	
	Loading factor	Weight of variable in factor	Loading factor	Weight of variable in factor	Loading factor	Weight of variable in factor
Overall weekly opening hours	0.876	0.464	-0.134	0.013	0.133	0.013
Sunday & public holiday openings	0.806	0.393	0.228	0.039	-0.265	0.053
Seasonal sales	0.183	0.020	0.735	0.402	-0.224	0.038
Specific taxes	-0.117	0.008	0.767	0.438	0.119	0.011
Definition of large retail outlet	-0.041	0.001	0.105	0.008	-0.768	0.445
Hard discount licence	-0.432	0.113	-0.003	0.000	0.583	0.257
Moratoria	0.013	0.000	0.365	0.099	0.493	0.184
Weight of factor in synthetic indicator		0.382		0.311		0.307
Selection criteria						
Eigen values		1.65		1.34		1.33
Variance explained by each factor		23.6		19.2		18.9
Variance explained by factors				61.7		
Bartlett's test of sphericity (21 degrees of freedom)				148.2		
Kaiser, Meyer and Olkin's measure of sample suitability				0.51		

VARIABLE	WEIGHT OF VARIABLE IN SYNTHETIC INDICATOR
Overall weekly opening hours	0.186
Sunday & public holiday openings	0.179
Seasonal sales	0.144
Specific taxes	0.143
Definition of large retail outlet	0.140
Hard discount licence	0.122
Moratoria	0.087

SOURCE: Banco de España.

a. Factor analysis using the principal components method and rotating the factors using the varimax method. Excludes the Basque Country.



SOURCE: Banco de España.

a. Including the Basque Country.

BANCO DE ESPAÑA PUBLICATIONS

WORKING PAPERS¹

- 0901 PRAVEEN KUJAL AND JUAN RUIZ: International trade policy towards monopoly and oligopoly.
- 0902 CATIA BATISTA, AITOR LACUESTA AND PEDRO VICENTE: Micro evidence of the brain gain hypothesis: The case of Cape Verde.
- 0903 MARGARITA RUBIO: Fixed and variable-rate mortgages, business cycles and monetary policy.
- 0904 MARIO IZQUIERDO, AITOR LACUESTA AND RAQUEL VEGAS: Assimilation of immigrants in Spain: A longitudinal analysis.
- 0905 ÁNGEL ESTRADA: The mark-ups in the Spanish economy: international comparison and recent evolution.
- 0906 RICARDO GIMENO AND JOSÉ MANUEL MARQUÉS: Extraction of financial market expectations about inflation and interest rates from a liquid market.
- 0907 LAURA HOSPIDO: Job changes and individual-job specific wage dynamics.
- 0908 M.ª DE LOS LLANOS MATEA AND JUAN S. MORA-SANGUINETTI: Developments in retail trade regulation in Spain and their macroeconomic implications. (The original Spanish version has the same number.)
- 0909 JAVIER MENCÍA AND ENRIQUE SENTANA: Multivariate location-scale mixtures of normals and mean-variance-skewness portfolio allocation.
- 0910 ALICIA GARCÍA-HERRERO, SERGIO GAVILÁ AND DANIEL SANTABÁRBARA: What explains the low profitability of Chinese banks?
- 0911 JAVIER MENCÍA: Assessing the risk-return trade-off in loans portfolios.
- 0912 MAXIMO CAMACHO AND GABRIEL PEREZ-QUIROS: Ñ-STING: España Short Term Indicator of Growth.
- 0913 RAQUEL VEGAS, ISABEL ARGIMÓN, MARTA BOTELLA AND CLARA I. GONZÁLEZ: Retirement behaviour and retirement incentives in Spain.
- 0914 FEDERICO CINGANO, MARCO LEONARDI, JULIÁN MESSINA AND GIOVANNI PICA: The effect of employment protection legislation and financial market imperfections on investment: Evidence from a firm-level panel of EU countries.
- 0915 JOSÉ MANUEL CAMPA AND IGNACIO HERNANDO: Cash, access to credit, and value creation in M&As.
- 0916 MARGARITA RUBIO: Housing market heterogeneity in a monetary union.
- 0917 MAXIMO CAMACHO, GABRIEL PEREZ-QUIROS AND HUGO RODRÍGUEZ MENDIZÁBAL: High-growth Recoveries, Inventories and the Great Moderation.
- 0918 KAI CHRISTOFFEL, JAMES COSTAIN, GREGORY DE WALQUE, KEITH KUESTER, TOBIAS LINZERT, STEPHEN MILLARD AND OLIVIER PIERRARD: Wage, inflation and employment dynamics with labour market matching.
- 0919 JESÚS VÁZQUEZ, RAMÓN MARÍA-DOLORES AND JUAN-MIGUEL LONDOÑO: On the informational role of term structure in the U.S. monetary policy rule.
- 0920 PALOMA LÓPEZ-GARCÍA AND SERGIO PUENTE: What makes a high-growth firm? A probit analysis using Spanish firm-level data.
- 0921 FABIO CANOVA, MATTEO CICCARELLI AND EVA ORTEGA: Do institutional changes affect business cycles? Evidence from Europe.
- 0922 GALO NUÑO: Technology, convergence and business cycles.
- 0923 FRANCISCO DE CASTRO AND JOSÉ LUIS FERNÁNDEZ: The relationship between public and private saving in Spain: does Ricardian equivalence hold?
- 0924 GONZALO FERNÁNDEZ-DE-CÓRDOBA, JAVIER J. PÉREZ AND JOSÉ L. TORRES: Public and private sector wages interactions in a general equilibrium model.
- 0925 ÁNGEL ESTRADA AND JOSÉ MANUEL MONTERO: R&D investment and endogenous growth: a SVAR approach.
- 0926 JUANA ALEDO, FERNANDO GARCÍA-MARTÍNEZ AND JUAN M. MARÍN DIAZARAQUE: Firm-specific factors influencing the selection of accounting options provided by the IFRS: Empirical evidence from Spanish market.
- 0927 JAVIER ANDRÉS, SAMUEL HURTADO, EVA ORTEGA AND CARLOS THOMAS: Spain in the euro: a general equilibrium analysis.
- 0928 MAX GILLMAN AND ANTON NAKOV: Monetary effects on nominal oil prices.
- 0929 JAVIER MENCÍA AND ENRIQUE SENTANA: Distributional tests in multivariate dynamic models with Normal and Student t innovations.
- 0930 JOAN PAREDES, PABLO BURRIEL, FRANCISCO DE CASTRO, DANIEL GARROTE, ESTHER GORDO AND JAVIER J. PÉREZ: Fiscal policy shocks in the euro area and the US: an empirical assessment.

1. Previously published Working Papers are listed in the Banco de España publications catalogue.

- 0931 TERESA LEAL, DIEGO J. PEDREGAL AND JAVIER J. PÉREZ: Short-term monitoring of the Spanish Government balance with mixed-frequencies models.
- 0932 ANTON NAKOV AND GALO NUÑO: Oilgopoly: a general equilibrium model of the oil-macroeconomy nexus.
- 0933 TERESA LEAL AND JAVIER J. PÉREZ: Análisis de las desviaciones presupuestarias aplicado al caso del presupuesto del Estado.
- 0934 JAVIER J. PÉREZ AND A. JESÚS SÁNCHEZ: Is there a signalling role for public wages? Evidence for the euro area based on macro data.
- 0935 JOAN PAREDES, DIEGO J. PEDREGAL AND JAVIER J. PÉREZ: A quarterly fiscal database for the euro area based on intra-annual fiscal information.
- 1001 JAVIER ANDRÉS, ÓSCAR ARCE AND CARLOS THOMAS: Banking competition, collateral constraints and optimal monetary policy.
- 1002 CRISTINA BARCELÓ AND ERNESTO VILLANUEVA: The response of household wealth to the risk of losing the job: evidence from differences in firing costs.
- 1003 ALEXANDER KARAVANOV, SONIA RUANO, JESÚS SAURINA AND ROBERT TOWNSEND: No bank, one bank, several banks: does it matter for investment?
- 1004 GABRIEL PEREZ-QUIROS AND HUGO RODRÍGUEZ MENDIZÁBAL: Asymmetric standing facilities: an unexploited monetary policy tool.
- 1005 GABRIEL JIMÉNEZ, JOSE A. LOPEZ AND JESÚS SAURINA: How does competition impact bank risk-taking?
- 1006 GIUSEPPE BERTOLA, AURELIJUS DABUSINSKAS, MARCO HOEBERICHTS, MARIO IZQUIERDO, CLAUDIA KWAPIL, JEREMI MONTORNÉS AND DANIEL RADOWSKI: Price, wage and employment response to shocks: evidence from the WDN Survey.
- 1007 JAVIER MENCÍA: Testing non-linear dependence in the Hedge Fund industry.
- 1008 ALFREDO MARTÍN-OLIVER: From proximity to distant banking: Spanish banks in the EMU.
- 1009 GALO NUÑO: Optimal research and development expenditure: a general equilibrium approach.
- 1010 LUIS J. ÁLVAREZ AND PABLO BURRIEL: Is a Calvo price setting model consistent with micro price data?
- 1011 JENS HAGENDORFF, IGNACIO HERNANDO, MARÍA J. NIETO AND LARRY D. WALL: What do premiums paid for bank M&As reflect? The case of the European Union.
- 1012 DAVID DE ANTONIO LIEDO: General equilibrium restrictions for dynamic factor models.
- 1013 JAMES COSTAIN, JUAN F. JIMENO AND CARLOS THOMAS: Employment fluctuations in a dual labor market.
- 1014 LUIS M. VICEIRA Y RICARDO GIMENO: The euro as a reserve currency for global investors.
- 1015 PALOMA LÓPEZ-GARCÍA AND JOSÉ MANUEL MONTERO: Understanding the Spanish business Innovation gap: The role of spillovers and firms' absorptive capacity.
- 1016 AITOR LACUESTA AND SERGIO PUENTE: El efecto del ciclo económico en las entradas y salidas de inmigrantes en España.