Retail Trade Index
Base 2001

Methodological Manual

January 2005.

Index

1. Introduction.

The short-term Retail Trade Indices form part of the action program for the Development of the Statistical System on Retail Trade elaborated by Eurostat, and is governed by that established in Council Regulations (EC) Nº1165/98 dated the 19th of May 1998 on short-term statistics. The Retail Trade Index is moreover one of the Main European Economic Indicators (MEEI), the objective of which is to provide speedy information to the European Central Bank, falling within the so-called EMU Action Plan.

The objective of the Retail Trade Indices is to ascertain the main characteristics of companies dedicated to retail trade in Spain, which allow for the short-term measurement of the evolution of the activity within the sector.

The base year of the index is the year 2001, while previously the base was 1994. Together with the change in the base, modifications were introduced both in the companies studied, given that the sale of pharmaceutical products and medical articles, sales of mobile or non permanent units, and the retail trade of second hand objects were included, as well as in the level of disaggregation of the indices, given that indices by Autonomous Community were elaborated.

The first data published with the new base is January 2002. Where possible a backward link has been established to avoid a rupture in the series.

2. Scope of the survey

The scope of the survey is defined with respect to the population researched, the time, and the space.

2.1   Population scope

The population object of the 2001 Short-term Retail Trade Survey is formed by the companies whose main activity is registered within section G of Division 52 (except 52.7 Repair of personal effects) of the National Classification of Economic Activities (NCEA-93), which includes the following groups:

52. Retail trade, except trade of motor vehicles, motorcycles and mopeds; repair of personal effects and household equipment

It covers:

– The sale (without transformation) of new and used products to the general public for consumption or personal or domestic use in stores, large department stores, stands, postal order warehouses, travelling salespersons, consumption cooperatives, …

– The repair and installation of personal or domestic articles, even in combination with retail sales.

– Retail sales carried out by intermediaries who are classified in the same heading as the sale of the products.

It does not cover:

– The sale of motor vehicles, motorcycles and their components, as well as the sale of fuel for same.

– The sale of cereals, seeds, minerals, crude oil, chemical industrial products, iron and steel and industrial machinery and equipment.

– The sale of food and beverages for consumption in-house and the sale of take-away food.

– The rental of personal and domestic effects to the general public.

52.1. Retail trade in non-specialised establishments

It covers:

– The activities of commercial establishments that, aside from selling *mainly food*, offer another broad range of goods such as clothing, furniture, household appliances, hardware articles, cosmetics,…. Hypermarkets, supermarkets, medium-sized establishments and self-service stores are classified under this heading.

– The activities of all types of frozen foods.

– Non-specialised retail trade, *without prevalence in food*, in establishments that offer a broad range of general goods among which are included clothing, furniture, household appliances, hardware articles, cosmetics, jewellery, toys, sporting articles,… Large department stores and popular stores are classified in this section.

52.2. Retail trade of food, beverages and tobacco in specialised establishments

It covers:

The retail trade in specialised establishments of fruits and vegetables, meat, poultry and game, delicatessen and cold meats, fish and shellfish, bakery, confectionery, pastries, beverages, tobacco products, dairy products, eggs; fruit, vegetable, meat and fish preserves. It also covers the retail trade of establishments called *"ultramarinos"* (grocer's shops).

It does not cover:

The retail trade of bread and bakery products, confectionery and pastry products in the establishments where they are elaborated.

52.3. Retail sale of pharmaceutical preparations, medical articles, beauty and hygiene products

It covers:

The retail trade of pharmaceutical preparations, medicines for veterinary use, medical and orthopaedic articles, herbalist's articles, cosmetics and dressing table articles, such as soaps, perfumes, skin beauty products and sun screen products.

52.4. Other retail sale of new goods in specialized establishments

It covers:

The retail trade of textiles, clothing, footwear and leather articles, furniture, lighting and other household appliances, electrical appliances, radio, television and sound apparatus, hardware articles, paints and glass, do-it-yourself materials, construction materials, paints and varnishes, sanitary fittings, books, newspapers and stationery, optical, photographic and precision materials, clocks and watches, jewellery and silver articles, toys, sporting articles, specialised household goods store, wallpaper and floor coverings, seeds, flowers, plants and pets, fuels (except for automobiles), commercial art galleries,…

It does not cover:

The retail trade of antiques, ancient and second hand books, rental of video tapes. It does not include the retail trade of fuels for automobiles.

52.5. Retail sale of second-hand goods in establishments

It covers:

Antique dealers, the retail trade of second hand books and of other second hand goods such as furniture, clothes, machines, materials,… .

It does not cover:

Auction activities carried out by the courts, the restoration of art works and ancient books, retail trade of second hand motor vehicles, stamps and coins.

52.6. Retail sale not carried out in establishments

It covers:

The retail trade of any type of product by mail order (the goods are sent to the buyer who has previously chosen same from a catalogue, sample or any other type of offer). This also includes retail sale via the television, radio and telephone of any product, retail trade in stands and small street markets, door-to-door sales, retail trade through vending machines and travelling salesmen.

It does not cover:

The retail trade in supply market stands nor the maintenance and repair of vending machines.

2.2   Temporal scope

Invoicing or gross sales indices are elaborated monthly. Employment indices are elaborated on a quarterly basis until December of 2004; after January of 2005 they are published monthly.

2.3   Geographical scope

All statistical units located within Spain are the object of investigation.

3. Statistical unit

Companies that render as their main economic activity any of the activities included within the population scope are used as a statistical unit. The company is also the informant unit, given that because it is perfectly defined and located, and accounting and employment data is available, the response is facilitated and homogeneous information is obtained.

The company is the smallest combination of juridical units that constitutes an organisational unit that produces goods or services, and which has a certain degree of decision-making autonomy, especially relative to the allocation of their current resources. A company may carry out one or more activities in one or various local units.

4. Concepts and definitions

4.1   Company classification variables

Companies may be classified according to three criteria:

a. Main activity according to codes of the National Classification of Economic Activities of (NCEA-93).

b. Size of the company by number of employees.

c. Geographical distribution by Autonomous Community

a) Company activity

The economic activity carried out by a company is defined as the creation of added value by means of the production of goods and services.

Each one of the statistical units studied (companies) frequently carry out various activities that should be classified in separate classes of the National Classification of Economic Activities. In general, activities developed by an economic unit may be of three types: main, secondary and auxiliary activities. The main activity is differentiated from secondary activities in that it generates greater added value; whilst auxiliary activities are those that generate services

that are not sold on the market and that only serve the unit on which they depend (administration departments, transport services or storage).

Due to the difficulties faced by companies when calculating the added value when various activities are carried out, the activity that generates the greatest volume of business is considered the main activity or, failing that, that which occupies the greatest number of persons.

Finally, the information that is requested from the informant units refers not only to the main activity under consideration, but also to all the secondary and auxiliary activities that are carried out.

b) Size of the company

The size of the companies is one of the most important variables when it comes to determining the behaviour of companies. This size may be established in terms of the magnitude of the turnover or the value of the production, or by considering the number of persons on the company payroll. In this statistic the latter option is chosen to determine the size of the companies.

c) Geographical distribution

The sample is representative by Autonomous Community.

4.2   Variables studied

The variables studied may be classified in three groups:

a) Economic variables.

b) Employment variables.

c) Trade specific variables.

a) Economic variables.

This block collects information on company revenues in the reference month.

Turnover

This covers the amounts invoiced by the company during the reference month pertaining to the sale of goods and provision of services that are the object of company traffic, both in the exercising of their main activity, as well as with regards to any other secondary activity carried out by the company.

They are recorded in net terms after deducting sales refunds, as well as volume discounts over sales. Not deducted are cash discounts nor discounts for prompt payment

This covers all amounts invoiced by the unit (company) during the reference period, which includes all commercial sales of goods and services supplied to third parties that are the object of the company's trade.

With the purpose of classifying revenues, the CPI classification groups have been used to classify the goods object of the transactions.

Food, beverages and tobacco: Fruits and vegetables, meat, poultry and game, delicatessen and cold meats, fish and shellfish, bread and bakery products, confectionery and pastries, alcoholic and non-alcoholic beverages, tobacco products, dairy products, eggs, fruit, vegetable, meat and fish preserves.

Non-food products:

Fabrics, clothing and footwear. Personal equipment: Fabrics, wool for knitting, raw material for the manufacture of rugs, carpets or embroidery, sheets, tablecloths, towels, haberdashery articles, clothing, furriery articles, clothing accessories like gloves, ties, hats, umbrellas, walking sticks, ... footwear, leather articles, cosmetics and dressing table articles, etc.

Household equipment: Furniture (except office furniture), lighting, non-electric domestic utensils, cutlery, dinner service, glass wear, pottery and china, curtains and lace curtains, ... wood, cork and wicker articles. Household appliances (including sewing machines), radio and television apparatus and other audiovisual equipment, musical equipment and music scores, hardware articles, lawnmowers, do-it-yourself material and equipment, paints, varnishes and enamel, construction materials such as bricks, wood and bathroom fittings, computers, optical, photographic and precision equipment, etc.

Health: Pharmaceutical preparations, drugs for veterinary use, medical and orthopaedic articles, herbal products, etc.

Leisure: Books, newspapers and stationery, toys and sporting articles, video games, seeds, flowers, plants, fertilisers, pets, food for pets, computer programs. Records, CDs and audio and video tapes (recorded and blank), artificial flowers and plants, etc.

Other goods: Clocks, jewellery and silverware, small household goods, wallpaper and floor coverings (rugs, fitted carpets,), fuels except for automobiles (liquid fuel, liquid gas bottles, coal and wood, for heating and domestic use, ...), commercial art galleries, office material and equipment including furniture, souvenirs, pieces of craftsmanship, religious and imitation jewellery, stamps and coins including second hand articles, gift and smoking articles, communication material (telephones, faxes,...), leather or imitation leather travel articles, etc.

b) Employment variables

1. Occupied personnel

The total number of people who work in the observation unit, also including owners who work in the unit, working partners and unpaid family employment.

2. Unpaid personnel.

Constituted by the persons who direct or actively participate in company work without receiving fixed remuneration or a salary. Included are owners, autonomous partners that are active within the company and family assistance. Not included are partners that solely provide capital, nor family members of the owner who do not actively participate in the company.

3. Paid personnel:

Formed by employees tied to the company by a labour contract and whom are paid fixed or periodic amounts in the form of a wage, salary, commission, efficiency wage or payments in kind. Distinction is made between *fixed personnel* (with an indefinite contract or labour relationship) and *temporary personnel* (with a determined duration contract).

Remunerated owners, students with formal commitments in exchange for remuneration or education, domestic workers, are also considered employees.

c) Trade specific variables

a- Premises

Premises are defined as any structurally separated and independent building that is not dedicated exclusively to family housing and in which economic activities dependent on a company are carried out and in which one or more persons work for the company.

b- Large Department Store

A department store is defined as any establishment that has a sales and exhibition area greater or equal to 2500 square metres. Sales area is defined as any area that is accessible to the public and where sales transactions take place; it includes shop windows, display cabinets, shelves and hallways within the establishment.

c- Specialised trade

It is defined as the trade carried out by companies in which the volume of invoicing of one sole type of product, considering as such those included in one sole class of the NCEA-93, exceeds 50 per cent of the total, and that carried out by companies who commercialise less than five types of products, considering as their main activity that which corresponds to the product with greater revenue volume.

d- Non specialised trade

It is defined as the trade carried out by companies that sell more than five types of products, none of which have invoicing that exceed 50 per cent of the total.

5. Sampling plan and design of the sample.

5.1 Survey framework

The Central Companies Directory (CCD) has been used as the framework for the survey, updated to November 2000, directory which contains information on the main economic activity and on the number of employees in companies, facilitating their stratification by these concepts. Also featured in this directory are data on the identification and localisation of the statistical units, which is necessary for a correct collection of the information.

The data outlined in the CCD is obtained from administrative sources, mainly from the State Tax Agency and Social Security, and it is completed with information proceeding from the INE's statistical operations.

5.2 Design of the sample

Stratified sampling has been used. Retail trade companies (division 52 of the NCEA except for group 527) have been used from the reference population. The companies selected have been classified on the basis of 3 variables: main activity, size and Autonomous Community.

The size of the sample has been calculated to be able to provide indicators on the variables turnover and employment, which are representative of the following populations.

On a national level:

1- 5211 (Retail trade with a predominance of food, beverages and tobacco in non specialised establishments)

2- 5212 (Retail trade of other products in non-specialized establishments)

3- 522 (Retail trade of food, beverages and tobacco in specialised establishments)

4- 523 (Retail trade of pharmaceutical preparations, medical articles, beauty and hygiene products)

5- 5241 + 5242 + 5243 (Retail trade of textiles, clothing and footwear and leather articles)

6- 5244 + 5245 + 5246 (Retail trade of furniture, lighting and other household articles; electrical appliances, radio, TV and sound equipment; hardware, paintings and glass)

7- 5247 + 5248 (Retail trade of books, newspapers and stationery; other retail sale in specialised establishments)

8- 5261 (Mail order retail trade)

9- 525+5262+5263 (Retail trade of second hand goods in establishments; in sales points and markets; other retail trade not carried out in establishments)

On an Autonomous Community level (17 plus Ceuta and Melilla individually)

1- 5211+5212 (Non-specialised trade)

2- Remaining groups

On an Autonomous Community level (17 plus Ceuta and Melilla individually)

1- 5211+522 (Food)

2- Remaining groups

Companies have been classified according to size in four stratum:

1- Less than 3 employees

2- From 3 to 9 employees

3- From 10 to 49 employees

4- 50 or more employees

The last stratum was considered exhaustive. With the rest an annual rotation of 25% was carried out.

5.3 Collection of the information.

The collection of the information is carried out through the INE Provincial Delegations, with the completion by companies of a monthly questionnaire. Mail has been the data collection procedure employed, with telephone and fax support.

The collection of the information at the provincial INE delegations conforms with the following calendar:

- End of the reference month (T): the questionnaires are forwarded to companies.

- T+7: The questionnaires reach the delegation. Recording and filtering processes.

- T+18: The Central Services receive the recorded questionnaires. Filtering and calculation of the indices.

- T+30: Publication of results.

5.4 Rotation of the sampling units.

Within the retail trade sector, every year both new company registrations as well as company delistings take place. Moreover, and although European Regulations establish that base changes must be carried out every 5 years,

with smaller companies it is necessary to rotate within a shorter time frame, to avoid tiredness in the informant units.

In view of the above, annual rotations of approximately 20-25% of the sample are carried out, with the inclusion of all the new companies of the exhaustive stratum, the elimination of all those companies that have been delisted, those companies that cannot be located, were erroneously included, or have merged, and the substitution of small companies for which the compliance of the questionnaires involves a huge effort.

The annual rotations are carried out during the month of January each year. The object of the process is to determine a new selection of sampling units that represents the distribution of retail trade in Spain, and to carry out a re-weighting of said units in such a manner that the sampling data can be transferred into population data.

6 Elaboration of the retail trade index

For the elaboration of Retail Trade Indices the year 2001 will be considered as the base year. During this year the companies that will form part of the sample will be determined and average invoicing necessary both for the calculation of the index and the weightings will be calculated.

6.1 Sales volume index.

The index that will be used is an index linked at Autonomous Community level, and a weighted index at national level. It is a monthly index.

The first index that we will calculate will be January 2002.

The calculation of this first month for each Autonomous Community will be carried out according to the following formula:

$$I^{CA}_{enero2002} = \frac{\sum_{k} F^{CA}_{enero2002k} * w_k}{F^{CA}}$$

Where:

AC: is the Autonomous Community for which we are calculating the index.

k: is the company.

$F^{AC}_{January2002k}$: is the invoicing of company k in January 2002, in Community AC (AC being the code of the autonomous community).

w_k: is the weighting of the company within the Autonomous Community to which it belongs.

F^{AC}: Average invoicing, which is calculated:

$$F^{CA} = \frac{\sum_k \sum_{2001} F^{CA}_{2001,k} * w_k}{12}$$

where: - $F^{AC}_{2001,k}$ is the invoicing from 2001, the base year, for a determined variable in a specific community.

For the remaining months, that is, February 2002 onwards, the index will be calculated:

$$I^{CA}_j = I^{CA}_{j-1} * V^{CA}_{j,j-1}$$

$$V^{CA}_{j,j-1} = \frac{\sum_k F^{CA}_{jk} * w_k}{\sum_k F^{CA}_{j-1,k} * w_k}$$

where:

e- j: is the month for which the index is calculated.

f- F^{AC}_{jk} is the invoicing of companies corresponding to an Autonomous Community in month j

g- $F^{AC}_{j-1,k}$ is the invoicing of companies corresponding to an Autonomous Community in the month j-1.

h- Once calculated the base indices for each Community, the rest will be weighted sums

General Index for an Autonomous Community

$$I^{CA}_{General} = I^{CA}_{Alimentacion} \times Pond^{CA}_{Alimentacion/General} + I^{CA}_{Re\,sto} \times Pond^{CA}_{Re\,sto/General}$$

The general index from an Autonomous Community is the weighted sum of the food indices and the non-food indices of said Autonomous Community.

National Food Index

$$I^{Nal}_{Alimentacion} = \sum_{CA} I^{CA}_{Alimentacion} \times Pond^{Alimentacion}_{CA/Nacional}$$

The national food index is the weighted sum of the food indices of all the Autonomous Communities.

National Index for Non-food Products

$$I^{Nal}_{Re\,sto} = \sum_{CA} I^{CA}_{Re\,sto} \times Pond^{Re\,sto}_{CA/Nacional}$$

The national index for non-food products is the weighted sum of the remaining indices of all the Autonomous Communities.

General National Index

The general national index may be calculated in two different forms, and both must yield the same result. These are:

i- Weighted average of the indices of the Autonomous Communities.

j- Weighted average of the national indices for food and non-food products.

It is expressed as:

1. Weighted average of the indices of the Autonomous Communities.

$$I^{Nal}_{General} = \sum_{CA} I^{CA}_{General} \times Pond^{General}_{CA/Nal}$$

2. Weighted average of the national indices for food and non-food products.

$$I^{Nal}_{General} = I^{Nal}_{Alimentacion} \times Pond^{Nal}_{Alimentacion/General} + I^{Nal}_{Re\,sto} \times Pond^{Nal}_{Re\,sto/General}$$

where:

6.2 <u>Employment index.</u>

Since January of 2005 the employment index is a monthly index.

The employment index is calculated in the same manner as the sales volume index, using a linked index to an Autonomous Community level, that is:

$$I^{ECA}_{j} = I^{ECA}_{j-1} * V^{ECA}_{j,j-1}$$

$$V^{ECA}_{j,j-1} = \frac{\sum_{j} E^{CA}_{jk} * w_k}{\sum_{j} E^{CA}_{j-1,k} * w_k}$$

Once the employment indices of the different Autonomous Communities have been calculated, the national employment index will be calculated as a weighted sum of the former. It is expressed as:

$$I^{ENal}_{j} = \sum_{CA} I^{ECA}_{j} \times Pond^{E}_{CA/Nacional}$$

Up until December of 2004 the employment index was issued on a quarterly basis, solely published in the months of March, June, September and December.

6.3 <u>Department stores index.</u>

The Department Stores Indices are calculated with a restricted group of companies, those which have premises with a sales surface area of more than 2500 square metres, using in the calculation of the index only that invoicing or employment that correspond to said premises, instead of the total invoicing or employment of the company.

The index is calculated in the same manner as the indices for the entire retail sector; we are dealing with a linked index solely calculated on a national level.

7 Corrected indices

7.1 <u>Price effect corrected indices.</u>

The retail trade indices at constant prices show the evolution of sales within the retail sector once eliminated the effects that prices have over said sales. These indices were published for the first time in January of 2004, and deflated indices are published on a national level, for Autonomous Communities and for Department Stores.

The deflators that are used in the different national indices are:

- General Index: General CPI without services or the rental of dwellings.

- Food index: CPI for food, beverages and tobacco

- Non-food products index: General CPI without food, beverages and tobacco, services nor the rental of dwellings

- Personal equipment index: CPI for clothing and footwear

- Household equipment Index: CPI for furniture and household equipment

- Other Goods Index: General CPI without food, beverages and tobacco, services nor the rental of dwellings.

The General Index from each Autonomous Community will be deflated with the general CPI without services or the rental of dwellings corresponding to each one of the communities.

7.2 <u>Calendar effect corrected indices.</u>

The calendar effect determines the differences that arise in a variable due to the different structure of the months (both in the number of days as well as in the composition of the number of working days and public holidays) when the remaining factors that influence said variable are constant.

European regulations on short-term statistics, with the objective of harmonising all the indicators elaborated by the different countries of the European Union, so that their level of comparability is the highest possible, request that indices be provided in net terms, that is, eliminating, amongst others, the calendar effect.

Retail trade indices are affected by a series of calendar factors that differ from one country to another, and even within the same country amongst the different Autonomous Communities. These effects may be classified into three groups:

a) The working days effect

b) The Holy Week effect

c) The leap year effect.

The method used is based on regression models. The TRAMO-SEATS program has been used in line with EUROSTAT recommendations. This computer application includes these three general effects and they have been selected, with some instantiations, for the Retail Trade Index.

a) Working Days Effect.

The correction of the working days effect has been carried out by designing an intervention variable based on the characteristics of retail trade in Spain.

This variable is created parting from the labour calendars published in the Official State Gazette since the year 1995, and is elaborated following the same structure used by the TRAMO-SEATS program for the creation of the Trading Day series. With the objective of including all public holidays, both national as well as those corresponding to the Autonomous Communities, the latter are weighted pursuant to the weight that each Autonomous Community has within the index.

b) Holy Week Effect.

The intervention variable used to elaborate the model for the Holy Week effect has been created with a series that assigns 1 to the months of March and April, depending on whether or not they contain the Holy Week, and 0 to the remaining months.

In the event that Holy Week is divided amongst the months of March and April, the series presents the proportional value of the public holidays present in each month. It has been taken into account that the different Autonomous Communities celebrate either Holy Thursday or Easter Monday, or both, weighting these days according to the weight that each Autonomous Community possesses in the Retail Trade Index.

c) Leap Year Effect.

The intervention variable that elaborates the model for the affects that the Leap Year has on retail trade is a series formed by 0 and 1, the first value is assigned to all the months and the second to the months of February that have 29 days.

The methodology for the analysis of time series recommends a periodic revision of the models, so as to include the most up-to-date information. Thus, this implies that the series corrected for the calendar effects are provisional, with the complete series being reviewed annually.

The indices that are published with the correction for the calendar effect are the General and the General Department Store indices, on a national scale, both at current as well as at constant prices.