



The economic impact of
modern retail on
choice and
innovation in the
EU food sector

final report



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Final report



European Commission

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Final report

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Abbreviations

| | |
|----------|--|
| CA | Catchment area |
| CAGR | Compound annual growth rate |
| Cx | Concentration of x market players |
| CSA | Consumer shopping area |
| DG COMP | Directorate-General for Competition |
| EAN | European article number (now international article number) |
| ERRT | European Retail Round Table |
| EU | European Union |
| Eurostat | Statistical office of the European Union |
| GDP | Gross domestic product |
| GNPD | Global New Products Database (© Mintel Group Ltd) |
| HHI | Herfindahl–Hirschman Index |
| HICP | Harmonised index of consumer prices |
| HM | Hypermarket |
| HD | Hard discounter |
| INT | Intermediate (Eurostat rural/urban typology) |
| € M | Millions of Euro |
| MS | Member state of the European Union |
| NCA | National competition authorities |
| NFC | Near field communication |
| NUTS | Nomenclature of Territorial Units for Statistics |
| PR | Predominantly rural (Eurostat rural/urban typology) |
| PU | Predominantly urban (Eurostat rural/urban typology) |
| QR | Quick response code |
| R&D | Research & Development |
| SKU | Stock-keeping unit |
| SM | Supermarket |
| SME | Small and Medium Enterprises |
| VAT | Value added tax |

1. Executive summary

EY, together with Arcadia International and Cambridge Econometrics has been awarded a contract by DG COMPETITION of the European Commission as a result of a call for tenders published in the Official Journal on 19 December 2012. DG COMP commissioned a study on the economic impact of modern retail on choice and innovation in the EU food sector. The study has been conducted between May 2013 and September 2014.

The full report is available at the following address:

<http://ec.europa.eu/competition/publications/reports/>

The executive summary is available in French at the following address:

http://ec.europa.eu/competition/publications/reports/retail_study_ex_fr.pdf

1.1. Objectives of the study

The main objectives of the study are the following:

- measure the evolution of choice and innovation over the last decade in the modern retail food sector; and
- identify the main drivers of choice and innovation, measure their evolution over the last decade, and their economic impact on choice and innovation.

1.2. Methodology

A combination of tools and methods has been adopted:

- Literature review;
- Collaborative workshops with experts to define a framework of analysis for choice and innovation;
- Collection of data from a broad range of sources;
- Setting up of an extensive database compiling the sources,
- Statistical analyses describing the evolution of choice, innovation and the potential drivers;
- Econometric analyses aiming to assess the impact of drivers on choice and innovation;
- Six case studies bringing complementary information on product categories and Member States (MS) not covered by the statistical analyses.

The concepts of choice and innovation have been defined and their potential drivers identified

Two types of **choice** are addressed in the study:

- **Food choice** has been defined as the product assortment available on retail shelves, measured by the number of EAN codes¹ in shops, and also by the variety of packaging sizes, the variety of prices, and the variety of alternative suppliers.
- **Shop choice** has been defined as the number of shops to which a consumer has access within a normal distance (consumer shopping area²).

Innovation for this study exclusively refers to product innovation³. Product innovation is measured both in terms of the **number of innovations** introduced on shelves in a given

¹ European Article Numbering bar code. Excluding promotions.

² Consumer shopping areas are local areas that include all the modern retail shops to which a consumer could reasonably travel to do their regular grocery shopping, based on travel distances that are set according to the type of area (rural, intermediate, urban).

period and the associated types of innovation: **new product, range extension, packaging, new formulation, relaunch.**

Consultations with experts and a literature review identified a list of **key potential drivers** of choice and innovation:

- Concentration of modern retailers: national (procurement) level and local level
- Concentration of suppliers: national (procurement) level and local level
- Measure of imbalance in the market between modern retailers and suppliers (the relative concentration of modern retailers and suppliers in the national market)
- Shop type
- Shop size
- New shop opening
- Socio-economic characteristics, including Gross Domestic Product (GDP) per capita, retailers' business expectations, population size and density, unemployment and food consumption
- Private label share (at the local level and at national level)
- Product category turnover, i.e. sales market size in each product category
- Region / Member States characteristics including access to finance, legal environment, pricing regulation, public health regulation and tax regulations.

An extensive database has been set up according to a sampling strategy seeking to maximise geographical scope, product category and time period

The identification of relevant and consistent data sources has been an important step of the study. The choice of data sources was based on their availability, their level of reliability for each indicator and their alignment to the definitions of choice and innovation. The main objective was to maximise the geographical scope, the product category coverage and the time period coverage. An **extensive database** that integrates all gathered data has been developed. The study covers the largest data sample available on choice and innovation at the local level.

³ Other types of innovation are excluded: process innovation (efficiency to drive down costs), technology innovation (e.g. automation in distribution centres or logistics operations) or concept innovation (e.g. new types of shopping experiences).

| Indicators | source | Austria | Belgium | Bulgaria | Cyprus | Czech Republic | Denmark | Estonia | Finland | France | Germany | Greece | Hungary | Ireland | Italy | Latvia | Lithuania | Luxembourg | Malta | Netherlands | Poland | Portugal | Romania | Slovakia | Slovenia | Spain | Sweden | United Kingdom | Number of MS |
|---|------------------------------|---------|---------|----------|--------|----------------|---------|---------|---------|--------|---------|--------|---------|---------|-------|--------|-----------|------------|-------|-------------|--------|----------|---------|----------|----------|-------|--------|----------------|--------------|
| Evolution of choices 2004-2012 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Shop choices (2004-2012) | ©Nielsen trade dimension | | | | | | | | | ● | | | | | ● | | | | | | | ● | | | | | | | 4 |
| Shop choices (2008-2012) | ©Nielsen trade dimension | | ● | | | | | | | ● | | | ● | | | | | | | | | | | | | | ● | | 6 |
| Product variety, price variety, size variety (2004-2012) | ©Nielsen Opus | | ● | | | | | | | ● | | | | | ● | | | | | | | ● | | | | | | | 6 |
| Product variety, price variety, size variety (2008-2012) | ©Nielsen Opus | | ● | | ● | ● | | | | ● | | | ● | | ● | | | | | | | ● | ● | | | | | | 9 |
| Evolution of innovations 2004-2012 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Number of innovations (2004-2012) | ©Nielsen Opus | | ● | | | | | | | ● | | | | | | | | | | | | ● | | | | | | | 6 |
| Number of innovations (2008-2012) | ©Nielsen Opus | | ● | | | ● | ● | | | ● | | | ● | | ● | | | | | | | ● | ● | | | | | | 9 |
| Categories of innovations (2004-2012) | ©Mintel GNDP | | ● | | | | | | | ● | | | | | ● | | | | | | | ● | ● | | | | | | 6 |
| Categories of innovations (2008-2012) | ©Mintel GNDP | | ● | | | ● | ● | | | ● | | | ● | | ● | | | | | | | ● | ● | | | | | | 9 |
| Evolution of concentration | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Retail concentration at national level (Retail group & banner level) - 2004-2012 - C5 / HHI | ©Planet retail | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | 26 |
| Retail concentration at local level - C5 / HHI (2004-2012) | ©Nielsen trade dimension | | | | | | | | | ● | | | | | ● | | | | | | | | ● | | | | | | 4 |
| Retail concentration at local level - C5 / HHI (2008-2012) | ©Nielsen trade dimension | | ● | | | | | | | ● | | | ● | | ● | | | | | | | | ● | | | | | | 6 |
| Supplier concentration at national level - 2004-2012 | ©Euromonitor | | ● | | | ● | ● | | | ● | | | ● | | | | | | | | | ● | ● | | | | | | 14 |
| Supplier concentration at local level - 2004-2012 | ©Nielsen Opus | | ● | | | | | | | ● | | | | | ● | | | | | | | ● | ● | | | | | | 6 |
| Measure of imbalance (national level only) - 2004-2012 | ©Planet retail, ©Euromonitor | ● | | | | ● | ● | | | ● | | | ● | | ● | | | | | | | ● | ● | ● | | | | | 14 |
| Evolution of other a priori drivers | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Macroeconomic data (GDP, population, unemployment, etc.) | Eurostat | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | 27 |
| Shop types at national level - 2004-2012 | ©Planet retail | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | 26 |
| Shop type, shop size - 2004-2012 | ©Nielsen trade dimension | | | | | | | | | ● | | | | | ● | | | | | | | | ● | | | | | | 4 |
| Shop type, shop size - 2008-2012 | ©Nielsen trade dimension | | ● | | | | | | | ● | | | ● | | ● | | | | | | | | ● | | | | | | 6 |
| Private label share (national level) - 2004-2012 | ©Euromonitor | | ● | | | ● | ● | | | ● | | | ● | | ● | | | | | | | ● | ● | | | | | | 14 |
| Private label share (local level) - 2004-2012 | ©Nielsen Opus | | ● | | | | | | | ● | | | | | ● | | | | | | | ● | ● | | | | | | 6 |
| Private label share (local level) - 2008-2012 | ©Nielsen Opus | | ● | | | ● | ● | | | ● | | | ● | | ● | | | | | | | ● | ● | | | | | | 9 |
| Product category turnover at national level - 2004-2012 | ©Euromonitor | | ● | | | ● | ● | | | ● | | | ● | | ● | | | | | | | ● | ● | ● | | | | | 14 |
| Econometric analysis | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Impact of drivers on choice and innovation (2004-2012) | Consortium computation | | | | | | | | | ● | | | | | ● | | | | | | | ● | ● | | | | | | 5 |
| Impact of drivers on choice and innovation (2008-2012) | Consortium computation | | ● | | | | | | | ● | | | ● | | ● | | | | | | | ● | ● | | | | | | 7 |
| Coverage of case studies | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Case studies | Consortium analysis | | ● | | | | | | | ● | ● | | | | | | | | | | ● | | | | | | | ● | 6 |

As shown in the table, a decision was taken to establish **two data sets** (a long period over 2004-2012 and a shorter period over 2008-2012 for which more data is available) so that a wider range of Member States could be included.

Choice and innovation have been quantitatively measured at a local level across **23 product categories and 343 shops in 9 Member States**. This selection of product categories covers a broad spectrum of fresh, ambient, frozen food / non-processed, less-processed and processed food products sold through self-service. The 343 shops sample include the **three shop types** regarded as making up modern retail (hypermarkets >=2 500 m² ; supermarkets – 400 to 2499 m², discount stores characterised by limited assortment, mainly composed of private labels and a low cost market strategy). They are located in **105 consumer shopping areas (CSA)**, which have been selected to be representative of a variety of living area types (rural, intermediate and urban) and economic prosperity levels (low, medium, high GDP per capita) found in the EU 27.

At national level, we have been able to measure the evolution of modern retail and supplier concentration in 14 Member States from 2004 to 2012. At local level, because of limited availability of data, concentration has been measured in a more limited sample of 4 (2004-2012) to 6 MS (2008-2012).

Econometric analysis identifying the correlation between the observed evolution of choice and innovation and their drivers covers the period 2004 to 2012 across 5 key Member States (France, Italy, Poland, Portugal and Spain) and 296 shops. The scope has been enlarged to 7 Member States and 337 shops for the short term period (2008-2012) including Belgium and Hungary.

The data set available for the econometric analysis has certain characteristics that should be noted when considering the results because of the possibility of biases introduced by the nature of the sample:

- the Member States included in the econometric analysis are mainly those with light or moderate modern retail concentration at national level;
- the Member States included in the econometric analysis cover a wide range of situations with regard to supplier concentration and measure of imbalance at national level.

Six case studies bringing additional qualitative information

The case studies complement the descriptive and econometric analysis to bring qualitative and complementary information to six selected product categories: three fresh non-barcoded products (apples in France, tomatoes in Belgium, fresh pork in Germany), and three barcoded products (olive oil in Spain, cheese in the Netherlands and milk in Finland). The objective of the case studies was two-fold: to be able to measure choice and innovation for fresh products that are sold without an EAN code and therefore not included in the econometric analysis, and to capture the specificities regarding choice and innovation for barcoded products that are closer to the agricultural level of the food supply chain.

The report on case studies is available at the following address:

http://ec.europa.eu/competition/publications/reports/retail_study_cases_en.pdf

1.3. Background: a strong development of modern retail across Europe, a new landscape for EU consumers

Over the past decade, the retail landscape has evolved for EU consumers due to a combination of different factors

The period covered by the study is characterized by the 2008 **economic crisis** which has had significant impacts on consumer purchasing power. **Seeking lower prices** has become a key priority for EU consumers. In addition, changes in household composition, the trend towards an ageing population, increased interest in new health issues (food intolerances, allergies, food-related diseases, overweight and obesity) and increased environmental awareness have had an impact on the grocery retail market in Europe, with the growth of specific product categories (fresh products, organic food, gluten-free products, etc.). The desire of more convenient products has become an increasingly important consideration for consumers leading to a number of innovations (ready prepared meals, easy opening cans, etc.). Edible grocery sales have remained stable over the last 8 years.

The period is characterized by a **strong development of modern retail** across the EU: from 2004 to 2012, modern retail's share of total grocery sales increased in 24 Member States. It has been evident in new shop openings and increased floor space. Discount stores have experienced the strongest growth in number of outlets and floorspace over the past decade: they have increased their sales areas by 81% between 2000 and 2011 across the EU, whereas the total sales areas of hypermarkets increased by 46% and that of supermarkets by 26% between 2000 and 2011.

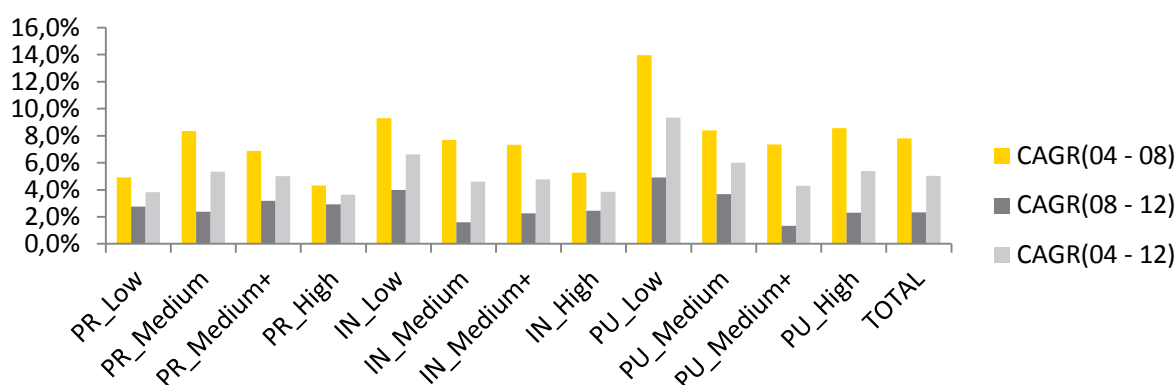
The **largest modern retail groups** have expanded and increased their market share in many Member States. At pan-European level, the top 10 European food retailers accounted for a 26% market share in 2000, compared to 31% in 2011.

Finally, the market share of **private label products** has increased across most product categories in Europe. Key reasons for this likely include a perception among consumers that these products offer good value for money, the opportunity of higher margins for retailers, and a profitable way for manufacturers to make use of spare capacity.

1.4. Evolution of choice: choice offered to consumers has notably increased in a majority of MS

Choice available to consumers in local shops increased in terms of the number of alternative products⁴, the number of different brand suppliers and the number of modern retail shops; the increase was greater during 2004-2008 than 2008-2012

Choice in alternative products, measured at a local level, has increased on average by 5.1% annually from 2004 to 2012 in the shops sampled in the CSAs covered by the study. During the pre-crisis period (2004-2008) the annual growth rate was higher (7.9%) than during the crisis period since 2008 (2.4%).



2004-2012 sample: Evolution of number of EAN codes (local level) by CSA type and GDP range (source: EY analysis based on © Nielsen Opus). CAGR: compound annual growth rate; PR: Predominantly rural; PU: predominantly urban; IN: intermediate; 'low', 'medium' and 'high' refer to the level of GDP per capita.

Choice in alternative products on the shelves of shops increased in all 9 MS of the sample, with the highest growth seen in Poland (+8.3% on average annually), and the lowest in Italy (+3.2%).

Starting from (and remaining at) much lower levels, **discounters registered the strongest growth** in the number of alternative products with +8.0% annually on average compared to +5.2% on average for hypermarkets and +3.6% for supermarkets.

Choice in alternative products at local level increased **across all product categories** over the 2004-2012 period when considering the sample as a whole, but there were significant variations across product categories. Across all CSAs, the product categories where the number of alternative products increased the most were notably ham/delicatessen, cereals, cheese, ready-cooked meals and starters/pizzas, all registering around annual growth of 6% over 2004-2012; on the other hand, butter/margarine and fruit juice registered the lowest annual growth of around 2%.

The variety of product sizes offered on modern retailers' shelves, also increased across all CSAs, Member States, product categories and shop types. As with choice in alternative products, annual growth was notably higher during 2004-2008 (annual growth of between 2.1% in Italy and 8.6% in Spain) than after 2008 (between 1.2% in Italy and 4.1% in Belgium).

Evolutions of choice in product sizes differed considerably across the sampled product categories. Cereals, coffee, edible oil and mineral water experienced the highest growth over the decade, whilst desserts, frozen vegetables, cheese and butter/margarine

⁴ Measured by the EAN codes available on the shelves of retailers' shops.

registered the lowest growth rates. Growth contracted for three product categories (cheese, frozen vegetables, and ham/delicatessen) over the crisis period.

From 2004 to 2012, there was an overall contraction in the **range of prices**⁵ available to consumers within a given product category. It is the only choice measure where a negative overall trend was observed over the decade under study.

The **number of brand suppliers** for which products were offered on shop shelves within a given product category increased on the whole from 2004 to 2012. Like other measures of choice presented above, trends varied across consumer shopping areas, product categories and shop types. Choice in brand suppliers available in modern retailers' shops increased over time in all Member States, ranging from 1.7% annual growth in Italy to 6.4% in Spain over the 2004-2012 period. The trend over the pre-crisis period was more positive (between 2.1% in Belgium and 9.9% in Poland) than that of the crisis period (between -0.8% in France and 6.8% in Belgium).

Notable variation in supplier choice was observed across the analysed product categories. Choice in brand suppliers increased the most from 2004 to 2012 in cereals, ham/delicatessen, chocolate and soft drinks. The product categories experiencing the lowest growth over the same period were butter/margarine, coffee and frozen vegetables. The total number of suppliers declined for two product categories (frozen vegetables, and baby food) over the crisis period.

Variations in supplier choice were observed across the three shop types, with an annual growth of +4.1% for hypermarkets on average between 2004 and 2012, +4% for discounters, + 2.1% for supermarkets.

Choice measured by the **number of shops** that consumers have access to in their consumer shopping areas increased between 2004 and 2012 by 1.6% annually, on average. The annual growth was higher (1.8%) during the 2004-2008 period than after 2008 (1.3%).

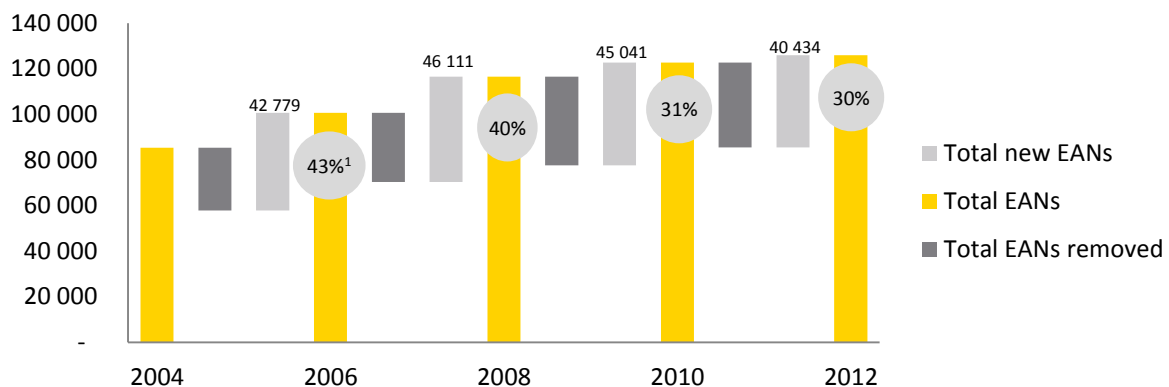
Looking at living area types, during the pre-crisis period, annual growth in the number of shops registered in 'predominantly rural' areas (3.6%) was twice the rate seen in 'intermediate' (1.8%) and 'predominantly urban' areas (1.7%). By comparison, the crisis period saw lower annual growth rates across all types of living areas, and the trend reversed, with 'predominantly urban' (1.6%) seeing higher growth than 'predominantly rural' (1.5%), while 'intermediate' registered the lowest growth rate (0.8%).

⁵ The price data in Nielsen Opus contained many inconsistencies which could only be partially corrected, leading to a less robust analysis on price variety.

1.5. Evolution of innovation: a steady stream of innovation was made available to EU consumers; however the number of innovations declined between 2008 and 2012

Innovations (number of new EANs) continued to be developed and made available to consumers in the EU, but the number of innovations declined after 2008

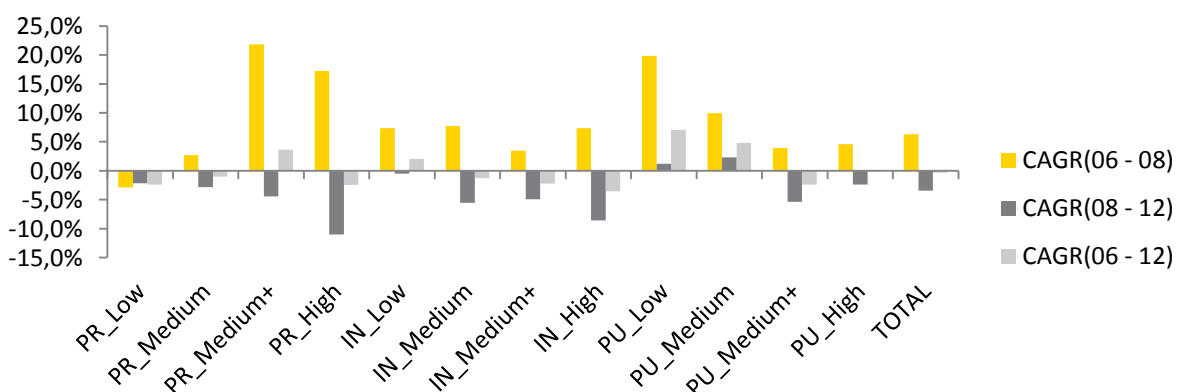
The **number of innovations⁶ increased** pre-crisis between 2006 and 2008 (+3.8% annually) but this trend was reversed during the crisis period with falls registered between 2008 and 2010 (-1.2%), as well as 2010 and 2012 (-5.3%). The share of innovations in the total number of products decreased steadily from 43% in 2006 to 30% on average in 2012.



¹Share of new EAN codes in the total number of EAN codes available on the shelves of modern retailers in 2006

2004-2012 sample: Evolution of the number of EAN codes (local level) – across 23 product categories in 302 shops sampled in 91 CSAs in 6 MS (source: EY analysis based on © Nielsen Opus - Be, Fr, It, Pl, Pt, Sp).

The experience with regard to the number of new EAN products made available in shops varied across different types of CSA. The strongest growth in the pre-crisis period was in more prosperous rural areas and less prosperous urban areas; during the crisis, the number of innovations only increased in less prosperous urban areas.



2004-2012 sample: total number new EAN codes by CSA type and GDP range (local level) (source: EY analysis based on © Nielsen Opus)

When aggregating data from the sampled shops by Member States, the number of innovations increased over the period only in Poland, Spain, and to a lesser extent in

⁶ Measured by analysis of the EAN codes available on the shelves of retailers' shops.

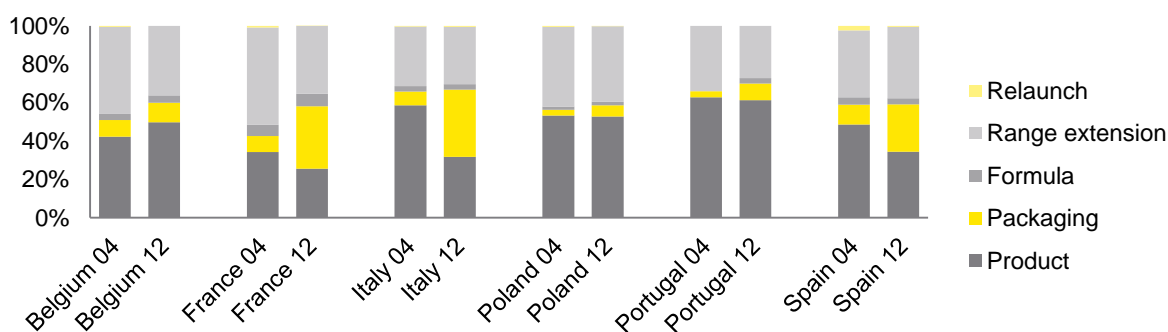
Belgium; it contracted (particularly since 2008) in Italy and France, and to a lesser extent in Portugal. Only in Spanish CSAs was positive growth in innovations registered both pre-crisis and during the crisis period.

Trends in innovations varied greatly across the sampled **product categories**. Across the sampled shops as a whole, only three product categories (baby food, cereals, starters/pizzas) registered notable positive annual growth over 2006-2012, another three (chocolate, soft drinks, yoghurt) remained stable, and the remainder registered negative annual growth over this period. The categories where the growth in new products contracted the most were mineral water (-6.8%), canned vegetables (-4.9%) and fresh pre-packaged bread (-4.3%).

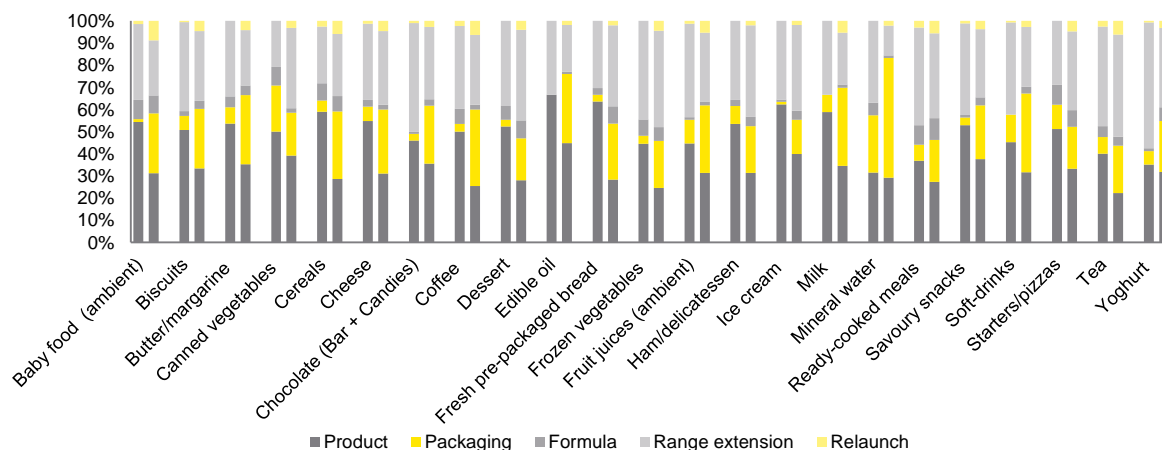
The fastest growth in the pre-crisis period was observed in **discount stores and hypermarkets**, whilst the trend for innovations in **supermarkets** was stable. After 2008, the trend remained positive but slowed down in discount stores while the number of innovations declined in both hypermarkets and supermarkets.

Types of innovation have changed from 2006 to 2012; innovations focused on new packaging have become considerably more common over time in most Member States in the analysed sample

Trends in the types of innovative products on offer at local level varied across the Member States. In France, Spain and Italy, and to a lesser extent in Portugal and Poland, there has been a trend towards more new packaging innovations as a proportion of total innovations at the expense of new products and range extension products. On average across all MS in the sample, new packaging innovations represented approximately 30% of total innovations in 2012 compared to approximately 6% in 2004. By contrast, the shares of new varieties and range extensions have decreased from 40% in 2004 to 30% in 2012.



2004-2012 sample: Proportion of innovations by MS (local level) (source: EY analysis based on © Mintel GNPD and © Nielsen Opus)



2004-2012 sample: Proportion of innovations by product categories (local level) (source: EY analysis based on © Mintel GNPD and © Nielsen Opus)

The trend towards an increasing proportion of packaging innovations was observed across the three product categories with the highest growth in new products over the last decade: cereals, baby food and starters/pizzas.

For both canned vegetables and fresh pre-packaged bread there was a decline in the proportion of new products. In the case of canned vegetables, new products have been replaced by range extensions, while for pre-packaged bread both range extensions and packaging innovations became more important. In the case of mineral water, the proportion of new products did not change, but here range extensions have been replaced by packaging innovations.

1.6. Evolution of concentration: concentration of retailers and suppliers showed different trends depending on the MS, the product category and the level of analysis (local or national)

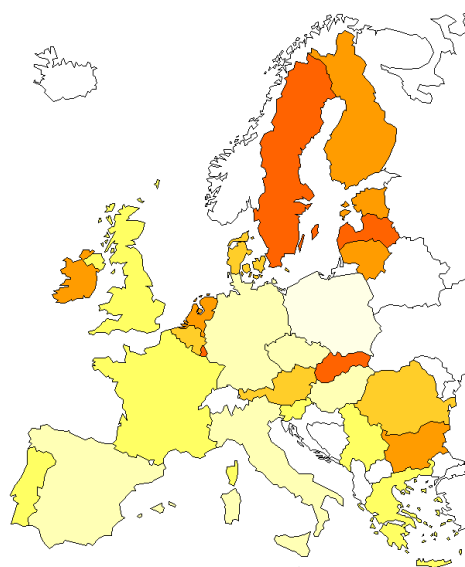
Trends in modern retailers' concentration varied in different Member States

In the edible grocery market as a whole including modern retail stores as well as smaller independent and traditional stores, a clear trend towards greater retailers' concentration has been observed during the period in 22 of 26 MS, pulled by the development of modern retail.

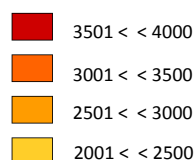
The picture is more mixed when the focus is on modern retail, where there were two opposite trends in the concentration of modern retailers among the MS over 2004-2012. Although the largest modern retail groups have increased their market shares at the pan-European level, the growth of modern retailers who had a small market share in 2004 or were not even present (like discounters in some MS) led to a decrease in modern retailers' concentration at national level over 2004-2012 in 16 of 26 MS⁷. But in the 10 other MS modern retailers' concentration increased.

In the 14 MS sample, representing 85% of the EU population, concentration of modern retailers increased in 7 MS (Czech Republic, Germany, Finland, Portugal, Poland, Spain and United-Kingdom) and decreased in the other 7 MS (Belgium, Denmark, France, Hungary, Italy, Netherlands, Romania).

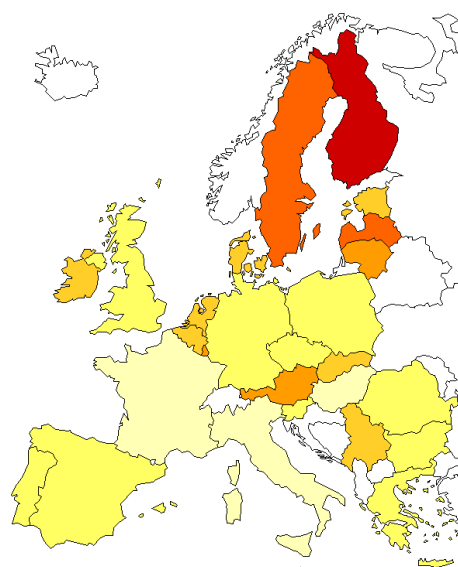
HHI modern retail 2004



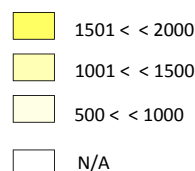
Édit avec Phlcarto - <http://perso.club-internet.fr/phlgeo> [discrétisation 1,2,3] ECUdate



HHI modern retail 2012



Édit avec Phlcarto - <http://perso.club-internet.fr/phlgeo> [discrétisation 1,2,3] ECUdate



2004-2012 HHI Modern Retail across EU MS sample at a national level

⁷ Data is not available for Malta, and Croatia was not in the EU in 2012. Modern retailers' concentration is based on the Herfindahl-Hirschman Index (HHI), calculated as the sum of the squares of the food market shares of each modern retail group and expressed as a value between 0 and 10,000.

At local level in terms of share of floorspace, retail concentration decreased by -1.1% annually on average over the 2004-2012 period. The decrease was the same for the pre-crisis and crisis periods. As mentioned above in shop choice evolution, this is mainly due to the increase in number of outlets.

Concentration of brand suppliers tended to increase at national level from 2004 to 2012 across most MS and product categories, while assortment concentration decreased at local level, particularly between 2004 and 2008

At national level, supplier concentration increased for 20 of the 23 product categories and 13 of the 14 sampled Member States. Concentration increased more on average during the pre-crisis period (when 22 of 23 product categories became more concentrated) than after 2008 (when 17 of 23 product categories became more concentrated).

The product categories with the highest average concentration levels between 2004 and 2012 were frozen ready cooked meals, baby food, cereals and coffee. The categories with the lowest average concentration levels were ham/delicatessen, cheese and fresh pre-packed bread.

At local CSA level, the trend in assortment concentration⁸ changed over the period 2004-2012. During the 2004-2008 period, assortment concentration decreased in all 6 MS⁹ in the sample by -1.3% annually on average and for most product categories (15 out of 23). After 2008, the decrease in assortment concentration slowed down reaching -0.4% annually on average; concentration increased in two MS (France and Portugal, averaged across product categories) and 10 product categories (average across MS).

A wide range of situations in measure of imbalance between modern retailers and suppliers has been observed depending on the MS and the product category.

The balance of the relationship between suppliers and modern retailers was measured at the procurement level, i.e. at national level, considering that negotiations mainly take place at national level. Analyses of situations by product category and Member States attest that they are equal numbers of situations in favour of retailers as they are situations in favour of suppliers.

At national level, modern retail groups are concentrated to a greater extent than brand suppliers in 6 out of 14 MS for the majority of product categories (for example: in Finland, retailers are more concentrated than suppliers for 21 out of 23 product categories). In the other 8 MS, suppliers are more concentrated than modern retailers for the majority of analysed product categories (for example in Hungary: suppliers are more concentrated than modern retailers in 17 product categories out of 23). For 12 product categories, modern retailers are more concentrated than suppliers in a majority of the 14 analysed MS, whereas suppliers are more concentrated than modern retailers in a majority of MS for 11 product categories. For instance, baby food and cereals suppliers are more concentrated than modern retailers in most MS in the sample, whereas the opposite is the case for cheese, ham or bread.

⁸ Assortment concentration is a measure of supplier concentration at local level reflecting the share of EANs in a specific product category that each brand supplier has on the shelves of retailers' shops. It is affected by retailers' assortment decisions to stock certain products.

⁹ Belgium, France, Italy, Poland, Portugal, Spain

1.7. Conclusions regarding factors driving choice

In addition to the shop types and shop size which have an obvious impact on choice, economic prosperity and product category turnover have been favourable factors for choice

The main drivers were found to be the GDP per capita of the region in which the shop is located, national turnover in the product category, certain shop characteristics (format, floorspace) and the presence of a new shop opening in the local area: these all had positive impacts on choice.

The level of prosperity in the region in which shops are located, measured by GDP per capita, had a strong positive impact on most choice indicators except product price variety¹⁰. The reduction in choice growth between 2008 and 2012 is in part associated with the decline in GDP per capita across Member States. Prosperous areas may encourage retailers to extend product choice to secure higher spend by customers.

Product category turnover at national level was found to show a strong positive relationship with all measures of choice (product variety, product size variety and product supplier variety in particular), except product price variety. Obviously, product categories with high sales turnover are also those where there is a greater commercial potential, and therefore where suppliers focus on product development and retailers have high expectations on turnover, ultimately accounting for a wide variety of products on offer.

Evidence was found, as expected, that hypermarkets offered the most choice and discounters the least, and that, for any given format, larger shops offered more choice.

The impacts of the drivers that measure indicators that relate directly to retailers and suppliers were mostly small.

There is no evidence that the concentration of modern retailers has been an economic driver of choice

Econometric analyses found very little evidence of a relationship between modern **retailer concentration** (at either local or national level) and the level of choice made available to consumers, but the countries in the sample did not include those with the highest levels of national modern retailer concentration.

Some case studies suggested that the structure of modern retail can have a positive effect on choice. For instance, in the case of tomatoes in Belgium, the high concentration of modern retail has not prevented intense competition amongst modern retailers to select, source and propose the most attractive range of products. For olive oil in Spain, modern retailers have used increased choice to attract and retain customers.

Competition in the form of a new shop opening in the local area improves the choice offered in existing shops

Evidence was found that shops that experienced the **opening of a new shop** within a distance close enough for the new shop to be regarded as a competitor tended to offer somewhat more choice.

There is no evidence that the concentration of suppliers has been an economic driver of choice

The impact of **supplier concentration** on choice was found to be negligible.

¹⁰ The price data in Nielsen Opus contained many inconsistencies which have been partially corrected.

The impact of the measure of imbalance between modern retailers and suppliers was generally found to be consistent with those found separately for retail concentration and supplier concentration

Consistent with the separate findings for retailer concentration and supplier concentration, there was very little evidence that the **measure of imbalance** between modern retailers and suppliers had an impact on choice.

The impact of private labels on the evolution of choice was found to be positive but small

We did not find evidence generally that a larger share of **private labels** (at national or local level) curbed choice. If anything, at least up to a moderate level, it is associated with slightly more choice, except in the case of the range of product prices where a larger share of private labels in a given product category and shop was associated with slightly less choice. However, beyond a certain level (which varies depending on the product category) it appears that a higher share of private labels is associated with less product variety.

Summary of econometric results for key drivers: choice

| Driver | Low Dim. | Product variety | | | Product size variety | | | Product supplier variety | | | Product price variety | | | |
|---|----------|-----------------|---------|----------|----------------------|---------|----------|--------------------------|---------|----------|-----------------------|---------|----------|----|
| | | Sign | Signif. | Import. | Sign | Signif. | Import. | Sign | Signif. | Import. | Sign | Signif. | Import. | |
| <i>Modern retail concentration</i> | | | | | | | | | | | | | | |
| Procurement (national) level | ⏏ | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | ▼ | ✓✓ | ●● |
| Local level | | .. | .. | .. | ▼ | ✓ | .. | .. | .. | .. | .. | .. | .. | .. |
| Supplier concentration at procurement (national) level | | .. | .. | .. | ▲ | ✓✓ | .. | .. | .. | .. | .. | .. | .. | .. |
| Imbalance between modern retailers and suppliers at procurement level | | .. | .. | .. | ? | ✓✓ | .. | .. | .. | .. | .. | ? | ✓✓ | ● |
| <i>Private labels</i> | | | | | | | | | | | | | | |
| National level | | .. | .. | .. | .. | .. | .. | ▲ | ✓✓ | .. | ▲ | ✓✓ | .. | .. |
| Local level | | ▲ | ✓✓ | .. | ▲ | ✓✓ | .. | ▲ | ✓✓ | .. | ▼ | ✓✓ | .. | .. |
| Product category turnover (sales) at procurement (national) level | | ▲ | ✓✓ | ●● | ▲ | ✓✓ | ●● | ▲ | ✓✓ | ●● | ▼ | ✓✓ | .. | .. |
| New shop opening in the local area | | ▲ | ✓✓ | ● | ▲ | ✓✓ | ● | ▲ | ✓✓ | .. | ▲ | ✓✓ | .. | .. |
| <i>General economic drivers</i> | | | | | | | | | | | | | | |
| Unemployment | | ▲ | ✓✓ | .. | ▲ | ✓✓ | .. | ▲ | ✓✓ | .. | ▼ | ✓✓ | ● | .. |
| GDP per capita | | ▲ | ✓✓ | ●● | ▲ | ✓✓ | ●● | ▲ | ✓✓ | ●● | ? | ✓✓ | .. | .. |
| Population | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | ▲ | ✓✓ | .. | .. |
| Population density | | ▼ | ✓✓ | ● | ▼ | ✓✓ | ● | ▼ | ✓✓ | ● | ▼ | ✓✓ | .. | .. |
| Shop type | | ▲ | ✓✓ | not app. | ▲ | ✓✓ | not app. | ▲ | ✓✓ | not app. | ? | ✓✓ | not app. | .. |
| Shop floor space | | ▲ | ✓✓ | ●● | ▲ | ✓✓ | ●● | ▲ | ✓✓ | ●● | ▲ | ✓ | .. | .. |

The 'Low Dim column shows :

⏏ where the indicator varies only over time and countries, so that there are few observations from which to draw conclusions.

The 'Sign' column shows

▲ positive impact (when the driver increases in value)

▼ negative impact (when the driver increases in value)

? where the sign varies according to whether the parameter is estimated over the long or short data sets

If an estimate was found to be statistically significant at 5% level or lower, the 'Signif.' column shows:

✓ significant at 5% level

✓✓ significant at 1% level

For statistically significant drivers, the 'Economic importance' (Import.) column shows the scale of impact of the driver on the dependent variable when the driver is increased by one standard deviation above its mean value (both based on the sample used for econometric estimation). The symbols used are:

● an impact of more than 5%

●● an impact of more than 10%

Where a driver is not statistically significant or economically important according to these thresholds, this is denoted by the symbol '..'

1.8. Conclusions regarding factors driving innovation

The main drivers were found to be level of employment of the region in which the shop is located, measure of retailers' business expectations, the national turnover in the product category, certain shop characteristics (format, floorspace) and the presence of a new shop opening in the local area: these all had positive impacts on innovation. Concentration of modern retailers and suppliers also had either positive or negative impacts on innovation.

As for choice, shop type and shop size had an obvious impact on innovation

Evidence was found, as expected, that hypermarkets offered the largest number of innovations and discounters the least, and that, for any given format, larger shops offered a larger number of innovative products. The impact of being a discounter, relative to being a hypermarket, was greater for innovation than for choice, suggesting that the (narrower) range offered by discounters tended to focus on less innovative products.

Some general economic drivers have had strong impact on innovation

The rate of unemployment in the region was found to have a generally important negative impact on innovation. The risk associated with difficult economic times or areas of higher unemployment may discourage suppliers from developing innovations and retailers from offering new innovative products at these times and in these locations.

A measure of retailers' business expectations was found to have a large positive impact for some measures of innovation, suggesting that a positive macro business environment encourages both suppliers to develop product innovations, and retailers to list them. However, it should be noted that this measure has relatively few observations because it varies only across time and Member States.

Product category turnover at national level was found to show a positive relationship with some types of innovation. Product categories with high sales turnover are also those where suppliers are more likely to develop innovations. The relationship may be negative in the short period due to the effect of the crisis, whereby suppliers may invest less in research and development or limit their marketing expenditures despite product categories continuing to grow in size.

Some evidence was found that greater concentration among modern retailers at a local level was associated with less innovation

At local level, the estimated impact of modern **retail concentration** on most innovation measures was negative but only statistically significant for some indicators or time periods; the only clear negative impact that was found was for new packaging, suggesting a tendency for a higher number of innovations to be found when concentration is low.

At national level, modern retail concentration seems to have had various impacts on innovation. However, there are only a very small number of observations for national modern retail concentration because it varies only across time and Member States. Also, the Member States in the sample did not include those with the highest level of national modern retailer concentration.

Competition in the form of a new shop opening in the local area stimulates some improvement in the innovation offered in existing shops

The presence of a **new shop opening** in the local area was associated with more new product innovations available to consumers in existing shops.

Greater concentration among suppliers at procurement level was associated with less innovation

For some of the indicators of innovation, a negative impact was found for **supplier concentration**, consistent with the principle that pressure to innovate is stronger when competition is stronger (concentration is lower).

The impact of the measure of imbalance between modern retailers and suppliers was generally found to be consistent with those found separately for retail concentration and supplier concentration

A larger **imbalance** away from suppliers and towards modern retailers was generally found to be associated with more innovation, reflecting in particular the finding that greater supplier concentration was associated with less innovation. But the Member States in the sample did not include those with the highest level of national retailer concentration.

There was little evidence of an impact of private labels on the evolution of innovation

We did not find evidence generally that a larger share of **private labels** (at national or local level) curbed innovation: the impacts were generally found to be negligible in size even when statistically significant. However, beyond a certain level (which varies depending on the product category) it appears that a higher share of private labels is associated with fewer innovative products being offered.

The economic importance of the drivers was generally larger for innovation than for choice, although results were not consistent across different innovation measures

In particular, a different result was often found for the number of new packaging innovations compared with the other measures. Results also varied substantially between the long and short data sets, suggesting that behaviour changed during the recession due to other factors apart from those captured by the drivers included in the model applied in this study.

Other drivers identified from the case studies

Evidence from the case studies suggested that, for fresh non-barcoded products, the key driver of positive innovation evolution over the past decade was the **organisation of the supply chain**. For tomatoes in Belgium, seed houses have initiated new product development, thanks to increased research and development effort; whilst for apples in France, Club Organisations have been the key factor in creating the conditions for introducing new breeds.

Summary of econometric results for key drivers: innovation

| Driver | Low Dim. | Opus innovations | | | New products | | | New packaging | | | New formulations | | | New range extensions | | |
|--|----------|------------------|---------|----------|--------------|---------|----------|---------------|---------|----------|------------------|---------|----------|----------------------|---------|----------|
| | | Sign | Signif. | Import. | Sign | Signif. | Import. | Sign | Signif. | Import. | Sign | Signif. | Import. | Sign | Signif. | Import. |
| <i>Modern retail concentration</i> | | | | | | | | | | | | | | | | |
| Procurement (national) level | Ⓜ | ▲ | ✓✓ | ●● | ▲ | ✓✓ | ●● | ▼ | ✓✓ | ●● | ? | ✓ | ●● | ▲ | ✓✓ | ●● |
| Local level | | .. | .. | .. | .. | .. | .. | ▼ | ✓✓ | ●● | .. | .. | .. | .. | .. | .. |
| Supplier concentration at procurement level | | ▼ | ✓✓ | ● | .. | .. | .. | ? | ✓✓ | ●● | ▼ | ✓✓ | ●● | ▼ | ✓✓ | ●● |
| Imbalance between modern retailers and suppliers at procurement (national) level | | ▲ | ✓✓ | ●● | ▲ | ✓✓ | ●● | ? | ✓✓ | ●● | ▲ | ✓✓ | ●● | ▲ | ✓✓ | ●● |
| <i>Private labels</i> | | | | | | | | | | | | | | | | |
| National level | | ? | ✓✓ | ●● | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| Local level | | ▲ | ✓✓ | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | ▼ | ✓ | .. |
| Product category turnover (sales) at procurement (national) level | | .. | .. | .. | ? | ✓✓ | ●● | ▲ | ✓✓ | ●● | ? | ✓✓ | ●● | ▲ | ✓✓ | ●● |
| New shop opening in the local area | | .. | .. | .. | ▲ | ✓✓ | ●● | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| <i>General economic drivers</i> | | | | | | | | | | | | | | | | |
| Unemployment | | ▼ | ✓✓ | ●● | ▼ | ✓✓ | ●● | ▲ | ✓✓ | ●● | .. | .. | .. | ▼ | ✓✓ | ●● |
| Retailer business expectations | Ⓜ | ▲ | ✓✓ | ●● | ? | ✓✓ | ●● | ▲ | ✓✓ | ●● | ▲ | ✓✓ | ● | ▲ | ✓✓ | ●● |
| Population | | .. | .. | .. | .. | .. | .. | .. | .. | .. | ▲ | ✓ | ● | .. | .. | .. |
| Population density | | .. | .. | .. | .. | .. | .. | ▼ | ✓✓ | ●● | ▼ | ✓✓ | ●● | .. | .. | .. |
| Shop type | | ▲ | ✓✓ | not app. | ▲ | ✓✓ | not app. | ▲ | ✓✓ | not app. | ▲ | ✓✓ | not app. | ▲ | ✓✓ | not app. |
| Shop floor space | | ▲ | ✓✓ | ●● | ▲ | ✓✓ | ●● | ▲ | ✓✓ | ●● | ▲ | ✓ | ●● | ▲ | ✓✓ | ●● |

The 'Low Dim column shows

Ⓜ where the indicator varies only over time and countries, so that there are few observations from which to draw conclusions.

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? where the sign varies according to whether the parameter is estimated over the long or short data sets

If an estimate was found to be statistically significant at 5% level or lower, the 'Signif.' column shows:

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✓✓ significant at 1% level

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● an impact of more than 5%

●● an impact of more than 10%

Where a driver is not statistically significant or economically important according to these thresholds, this is denoted by the symbol '..'.

2. Reminder of objectives

This chapter presents a reminder of the motivations and objectives of the present study and the work that has been undertaken.

2.1. Objectives of the study

In late 2012, the European Commission announced that, following calls by stakeholders, it would commission a study to assess the impact of recent developments in the European food retail sector on consumer welfare. A call for tenders was published in the Official Journal on 19 December 2012.

This study intends to look at the economic impact of changes in the food modern retail sector on consumer welfare. In particular, it aims to identify the impact of retail concentration and supplier concentration at the procurement market on choice and innovation and provide robust empirical evidence on this impact. The study goes beyond retailer and supplier concentration to assess other factors, such as shop type and size, and socio-demographic characteristics, to account for structural differences that may influence choice and innovation. On the other hand, the study does not focus on the developments impacting food manufacturers, for instance, volatility of food commodity prices, energy costs, food safety regulations, globalisation, tax issues.

In more specific objective, the study aims to:

- Provide detailed results, key facts and in-depth analysis on the evolution of choice and innovation over the last decade in the EU food retail sector and analyse the trends;
- Identify and qualify the main drivers of choice and innovation and measure their evolution over the last decade;
- Verify whether retailer and supplier concentration at both procurement market and local levels, and the ratio between these two concentration measures are important factors impacting choice and innovation;
- Qualify other factors such as shop type, shop size, private labels success, and socio-demographic characteristics; and measure their impact on choice and innovation.

The following tasks have been performed to address these objectives:

- Definition of choice and innovation and identification of the a priori drivers through workshops and expert views;
- Descriptive analyses of the evolution of choice and innovation, and the a priori drivers;
- Econometric analyses to identify the correlation between the observed evolution and their drivers;
- Six case studies in order to complement and complete any quantitative data gaps and serve as illustrative examples in support of statistical and econometric analysis.

The results of the case studies are available at the following address: http://ec.europa.eu/competition/publications/reports/retail_study_cases_en.pdf

2.2. Motivations behind study

The impact of modern retail developments on the EU food supply chain has been a controversial subject over the past several years.

- On one hand, modern retail is acknowledged as being a very competitive sector, with a positive impact on consumer prices, given that, arguably, competition between retailers limits food price increases¹¹.
- On the other hand, claims have been made for action from different actors (including, consumer and manufacturer organisations) stating that choice and innovation are being jeopardised by retailers' practices, and the growth of private labels may increase the power of retailers vis-à-vis their suppliers and lead to a deterioration of choice and innovation, therefore impacting consumer welfare. However, these claims have not been sufficiently substantiated.¹²

Turbulence in commodities markets beginning in 2007 and subsequent consumer price trends revealed by EU market monitoring reports¹³ on the food supply chain has brought the retail sector under intense scrutiny over the past few years.¹⁴ However, it is worth noting that the issue of the increasing concentration of the retail sector has long been on Europe's political agenda¹⁵. Recently, a number of consumers and supplier organisations as well as competition authorities¹⁶ have argued that increasing buyer power in retail is giving rise to practices which may have detrimental effects on the welfare of both consumers and, on the procurement side, producers and suppliers.

The European retail industry has questioned this scrutiny, citing the lack of empirical evidence to support these claims and has tended to point out that trading relations are very complex and the arguments concerning abuses of buyer power simplistic and unsubstantiated¹⁷. Opponents have also pointed out that while producers and suppliers may be facing challenging prospects, these problems are more directly linked with the need to restructure the sector than buyer power abuses.¹⁸

11 Commission Staff Working Document (2009), "Competition in the food supply chain"

12 See, e.g. DG ENTR (2011), "The impact of private labels on the competitiveness of the European food supply chain". EuroCommerce, "Own brands: Increasing consumer choice and driving innovation", December 2010. ERRT, "Retail and innovation", ERRT contribution to the 2nd European Commission Workshop on the Retail Action Plan.

13 For more details see, Commission communication on a better functioning food supply chain in Europe (COM(2009) 59)

14 See, inter alia, Resolution of the European Parliament of 26 March 2009 on 'food prices in Europe'; Commission communication on "A better functioning food supply chain in Europe" (COM(2009) 591); EP, Report on a more efficient and fairer retail market (2010/2109(INI)); EP, Report on fair revenues for farmers: A better functioning food supply chain in Europe (A7-0225/2010); High Level Forum for a Better Functioning Food Supply Chain, draft report, October 2012; Commission Communication on "Setting up a European Retail Action Plan" (COM(2013) 36 final); Green Paper on Unfair Trading Practices in the Business-to-Business food and non-food supply chain in Europe, (COM(2013) 37 final)

15 See e.g., "Buyer Power and its Impact on Competition in the Food Retail Distribution Sector of the European Union". EC, 1999

16 See e.g., Press release "Copa Cogeca welcomes European Commission plan to improve functioning of food supply chain, but argues more action is vital". Available at: <http://pr.euractiv.com/pressrelease/copa-cogeca-welcomes-commission-plans-improve-functioning-food-supply-chain-arguesmor?page=44>; Press Release "FCA study shows that daily consumer goods trade uses its buying power in several ways that are questionable for competition". Available at: <http://www.kilpailuvirasto.fi/cgi-bin/english.cgi?luku=news-archive&sivu=news/n-2012-01-10>

17 EuroCommerce Position Paper on the "Green Paper on Unfair Trading Practices in the Business-to-Business food and non-food supply chain in Europe". April 2013.

18 Press Release "EP vote on Bové report misrepresents the realities of food supply chain". Available at: <http://pr.euractiv.com/pr/ep-vote-bov-report-misrepresents-realities-food-supply-chain-90100>

Whilst quantitative evidence to date is insufficient to robustly support these claims, a number of stakeholders across Europe have argued that buying power of retailers and/or suppliers has a negative effect on choice and innovation for consumers and, in the long term, the competitiveness of the European food supply chain itself. According to these arguments, the asymmetrical bargaining power has a negative effect on incentives to invest and/or innovate at different levels of the food supply chain for smaller actors.

Drawing the link between the effects of buyer power abuses on suppliers and long term impacts on consumer welfare, a 2012 report by Consumers International, a world confederation of consumer groups, claimed that *the abuse of buyer power is widely and routinely practised against suppliers and that, if not immediately, certainly over time, such abuse will inevitably damage consumers too*. The report claims that the downward pressure on supply prices threatens their viability and, in the long term, threatens choice, innovation and quality for consumers¹⁹.

A 2012 report from the Spanish NCA also draws this link, saying that while strong bargaining power has an immediate positive effect on consumer prices, in the long term, *the greater bargaining power [of retailers] may reduce the capacity and incentives for suppliers to invest and innovate. If suppliers expect they will not be able to capture an adequate portion of the overall profits, they will have less incentive to spend on capacity and innovation*²⁰. Similarly, a report by the Finnish NCA also states that one consequence of the further consolidation of the grocery retail sector may be *the narrowing of consumer choice and...drying up of innovation*²¹.

Nevertheless, the anecdotal empirical evidence that does exist cannot currently support these claims. For instance, a 2011 report by the Swedish NCA which examined the effects of the exercise of buyer power by retailers in the value chain concluded that *there was no empirical evidence as to whether it had an impact on innovation and on the range of products offered by food producers*²².

2.3. Structure of the final report

This report provides detailed answers to the study questions as developed in the analytical framework as follows:

Descriptive statistics:

- How has choice in the EU food sector evolved over time and across MS?
- How has innovation in the EU food sector evolved over time and across MS?
- How have the a priori drivers of retailer and supplier concentration evolved over time and across MS?
- How have the other a priori drivers of choice and innovation evolved over time and across MS?
- To what extent are the drivers of choice and innovation associated with each other over time and across MS?

Econometric analysis:

19 "The relationship between supermarkets and suppliers: What are the implications for consumers?". Consumer International, 2012

20 "Report on the relations between manufacturers and retailers in the food sector". Comision Nacional de la Competencia, 2012.

21 'Study on trade in Groceries: How does buyer power affect the relations between trade and industry'. Finnish NCA, 2012.

22 Konkurrensverket, Mat och marknad — från bonde till bord, April 2011

- How have the a priori drivers of retailer and supplier concentration impacted upon choice and innovation?
- How have the other a priori drivers of choice and innovation impacted upon choice and innovation?

Prior to responding to each of the study questions addressed in the descriptive statistics and econometric analysis sections, the report provides a background literature study into the modern retail sector in Europe and the evolution of the main characteristics over the last decades. This chapter serves as an introduction to the subsequent findings. In addition, a chapter on methodology is provided, with the objective of providing methodological and scope aspects of the study.

2.4. Limitations of this report

It is important to outline a number of general limitations, which need to be taken into consideration.

- **Sources:** this study draws on data and calculations generated from a wide range of statistical databases. For each measure the most reliable data source has been sought. The quality of the statistical databases however has not been verified.
- **Data availability:** the approach used was to identify and select CSAs strongly influenced by the availability of modern retail shop assortment data through ©Nielsen Opus. Given that the approach only considers shops that have been audited twice per year (in summer and winter) from 2004 to 2012, the shops in the sample tend to be located in areas of strong competition. The assortment of a given shop is audited by Nielsen at the request of a competitor.
- **Scope:** the time scope and geographical scope addressed in this report is highly dependent on data availability. Analyses address the largest possible scope of MS and longest time period to the best possible extent. However, some measures cover only a narrow scope due to data limitations, e.g. choice in shops has been measured on 4 MS between 2004 and 2012, because of the limited availability of © Nielsen Trade Dimensions data on the long time period. In addition, in terms of product scope, fresh products are not covered in the descriptive statistics and econometric analysis as they are not barcoded products that enable choice and innovation to be measured. As a result, a selection of fresh products has been addressed in the case studies.
- **Comparability:** this study has sought to maximise the sample size for each variable and driver being measured. As a result, the scope of Member States can differ according to the specific measure in question. Caution should therefore be made when comparing results across different measures. Furthermore, some results presented at MS level reflect results across the selected CSAs within that MS – as a result the findings do not represent all situations in the sample MS.
- **Innovation:** the definition of innovation from an operational perspective for this study is the introduction of a new EAN code. The Consortium team has not sought to qualify what should and should not be considered a genuine innovation. Therefore, the number of innovations in this study is synonymous with the number of new EANs that appear in the assortments across the

sample (with the exception of EANs identified as promotions, which have been excluded), whilst the different categories of innovation have been identified through applying data from © Mintel GNPD. Two different sources have been used for innovation, and therefore the absolute numbers according to each source cannot be reconciled.

- Price data: We have found some © Nielsen Opus product price data to be inconsistent in terms of units and currency across shops and time periods. Where possible incorrect data has been removed from calculations, however given the volume of data, the removal of all inconsistent prices cannot be ensured.

2.5. Different tasks of the study

2.5.1. Task 1

Task 1 was completed through the submission of the first progress report in July 2013. Over the first months of the study, the key study concepts were refined and operationalized through internal discussions, workshops, and the organisation of an online focus group with external individual experts, which enabled the consortium to identify relevant literature to be used, to develop and validate definitions of the key concepts of choice and innovation, as well as address their operationalization and measurement. A list of a priori drivers was established, which has set the foundation for the descriptive statistics, and have been applied therefore to the econometric analyses.

In addition, the key questions the study poses were reviewed, broken down into constituent sub-questions and a data source mapping was conducted to ensure the coherence of the study's approach, the robustness of the data collection strategy and the efficient articulation of the various data collection tools, namely the quantitative and qualitative analyses. The development of this analytical framework has served as a guide throughout the different stages of the study.

Furthermore, the approach was refined for the following methodological aspects, in order to best align the types of data available with the representation of a variety of different living and retail situations in Europe:

- Sampling approach and validation of the selection of MS, regions and CSA;
- Precise definition of Catchment Areas (CA) and CSA
- Selection of product categories;
- Selection of timeframe;
- Identification of additional data providers and final selection, study of data limitations and preparation for data purchase.

Finally, in light of data limitations, the gaps identified and the comprehensive analytical framework constructed, the case study approach has been refined to take these data needs into account.

2.5.2. Task 2

Following the acceptance of the Task 1 First Progress Report, the Consortium proceeded with the purchase of the agreed data sources. During August to September 2013, significant work was undertaken acquiring the various data sources, reviewing their quality, consolidating them into a database by MS, and running queries to enable descriptive statistics to be produced. The process of integrating different sources presented many challenges due to the differing nature of each data source and the high complexity and extensive quantity of the data.

During this process of data consolidation and treatment, it became apparent that the data provided for the analyses at shop level and CSA level was incomplete in terms of time periods covered across all selected MS. As a result, database construction could not commence, as having the full set of data per MS (all time periods and all shops) is an important prerequisite. In light of the data gaps, the scope of the study was completely revised, in terms of MS, geographical regions, and time scope. In parallel, a number of methodological points were revisited following preliminary analyses undertaken – concerning specifically drive time rules for CSAs and CAs. A revised scope of MS, mixed periods of analysis, CSAs and shops was validated with DG COMP on 29 October 2013, which is detailed in the following section of this report addressing scope and methodology revisions.

The complete second progress report was submitted to DG Competition on 28 March 2014. This report provided descriptive statistics on the evolution trends of choice, innovation and their a priori drivers over the 2004 to 2012 period.

2.5.3. Task 3

Following completion of the construction of the data set for all indicators in early 2014, the Consortium proceeded with the econometric analysis compiled in an Interim Report. The Consortium held an internal workshop to compare conclusions from the descriptive analysis (Task 2) and the preliminary conclusions from the econometric analysis in March 2014, and a workshop with DG Competition was held in April 2014. Comments from these workshops were incorporated in subsequent rounds of econometric analysis.

2.5.4. Task 4

The Consortium proceeded to the completion of 6 case studies. The objective of the six case studies was primarily to complement the main findings of the econometric analysis with qualitative inputs. They covered key fresh products (both EAN and non-EAN) in specific markets and certain areas that cannot be addressed due to data limitations, but which are considered essential in order to have a more representative picture of the impact of modern retail on choice and innovation. They enabled the consortium to observe through concrete examples the reality of the trends analysed from the econometric analyses, and to understand how and why the drivers impact choice and innovation.

2.5.5. Tasks 5&6

Task 5 and 6 consisted of the drafting of conclusions by the Consortium and the presentations that will take place with the DG COMP Food task force. A conference in October 2014 prepared by the Consortium and DG COMP aims to present the final results of the study to major European stakeholders.

3. Background of the study

This section presents an overview of important characteristics of the modern retail food sector in Europe, and an overview of the key macro trends impacting the evolution of this sector. The objective of this section is to provide contextual background to the motivations of the study.

3.1. Europe retail sector in brief

According to the latest figures, the overall retail sector represents 4.3% of the Gross Value Added in the EU economy²³, over 8% of employment²⁴ and 3.7 million SMEs²⁵. This sector interacts with both an upstream procurement market and a downstream consumer market. In the upstream market, retailers provide producers and suppliers with critical access to millions of final consumers through their distribution channels, as well as a number of different parallel services, such as logistics and product merchandising depending on the sector. In the downstream market, retailers offer customers access to an assortment of products, as well as information on those products through advertising or staff. It is important to take into consideration the two different dimensions of the retail sector, in order to properly situate it in the broader supply chain and fully understand the role it plays in the European economy.

Furthermore, retailers are key players in the functioning of the Internal Market, allowing consumers to access goods from many different MS. Thus, the functioning of the food supply chain has important ramifications on consumers (given that approximately 13 % of their household expenditure is spent on food²⁶), as well as the functioning of a number of other essential economic sectors, such as agriculture, the food processing industry and retailers. Taken as a whole, the food supply chain generates value added of €715 billion per year, almost 6% of the EU GDP.²⁷

3.1.1. Definition of modern grocery retail

The scope of the present study concerns specifically modern grocery retailing, covering hypermarkets, supermarkets and discount stores. Modern grocery retail sales account for 54% (in 2012, same in 2004) of the total edible grocery sales in the EU²⁸. Edible grocery sales represent 42% (in 2012, 43% in 2004) of total EU retail sales²⁹.

The distinction between 'modern retail' and what is sometimes referred to as 'traditional retail' can be difficult to define. As mentioned in the tender specifications for this study, the 'modern retail' concept refers to distribution channels that emerged over the past 30 to 40 years. Traditional retail can be characterised largely as small,

23 http://ec.europa.eu/internal_market/retail/

24 Commission staff working document on "Retail services in the Internal Market" (SEC(2010) 807) - Eurostat, National Accounts Statistics, 2007 (share of NACE G52 of total Gross Value Added at basic prices) and for the EU27. Employment data are from EU KLEMS, 2007, and for the EU 25.

25 European Commission retail market monitoring report "Towards more efficient and fairer retail services in the internal market for 2020" (COM(2010)355 final)

26 Eurostat, (TSDPC520), Average final consumption expenditure of households for food and non-alcoholic beverages across EU 27 (% of the total expenditure)

27 High Level Forum for a Better Functioning Food Supply Chain. Draft report, October 2012

28 EY analysis based on © Planet Retail

29 EY analysis based on © Planet Retail

independent and often family-owned businesses with non-organised distribution channels. From the 1950s onwards, this structure has gradually given way to larger and more diverse store formats offering a wider assortment of goods, sometimes highly integrated into a sophisticated supply chain, with ownership concentrated in a small number of national or international retail groups.

It is challenging to put forth a single definition for modern retail, as retail is very culture-specific, and its development has been highly influenced by contextual elements unique to each market, as diverse as local legislation, consumer behaviour, geographic characteristics and the structure of pre-modern channels of distribution. A number of different characteristics often associated with modern retail include:

- Group of shops with the same banner integrated in a network
- Shop size and format (hypermarkets ($\geq 2\,500\text{m}^2$), supermarkets (400 - $2\,499\text{m}^2$), discounters (all sizes))
- Assortment of goods offered (the number of Stock-keeping units - SKUs, different product categories)
- Self-service formats
- Technology and equipment
- General business practices (logistic, marketing...)

To illustrate the heterogeneous definitions modern retail can represent, one can consider the development of various retail formats often associated with modern retail. The lifecycles of these formats can vary drastically from one market to another. Thus, whilst the development of hypermarkets may be indicative of modernity in certain markets, notably the emerging markets, in others, the rising share of discounter stores is a much more apt indicator for tracing the evolution of retail over the past decades.

The definition of modern retail adopted by this study takes into account size (sales area) and shop type, and thus indirectly assortment and different organisational models. Thus, modern grocery retail is defined in this study as including hypermarkets ($\geq 2\,500\text{m}^2$), supermarkets (400 - $2\,499\text{m}^2$) and discount shops (all sales area sizes).

Consequently, this definition disregards independent and traditional shops, as well as "new modern retail", including e-commerce, drive-through markets, frozen food shops, organic food shops, fresh product shops, and very small supermarkets ($<400\text{m}^2$) such as convenience stores. The "new modern retail" formats only represents a small share of edible grocery sales – in 2012, grocery e-commerce represents 1.2%, frozen food stores 0.7%, health food stores 0.1% and convenience stores 4.5% (slightly up from 3.6% in 2004) - for a combined total of 6.5%.³⁰ Therefore the exclusion of these formats from the study will have limited impact on the trends observed in the grocery retail sector in the EU over the last 10 years.

Finally, it is important to mention that whilst one of the important distinguishing trends of modern retail has been the diversification of the assortment offered, both in the edible and non-edible offering, the scope of this study will specifically look at the edible assortment and thus disregard other durable and non-durable goods commonly sold in modern food formats, as well as other service markets, such as banking and mobile phones, in which large retailers have increasingly begun to enter.

30 EY analysis based on © Planet Retail

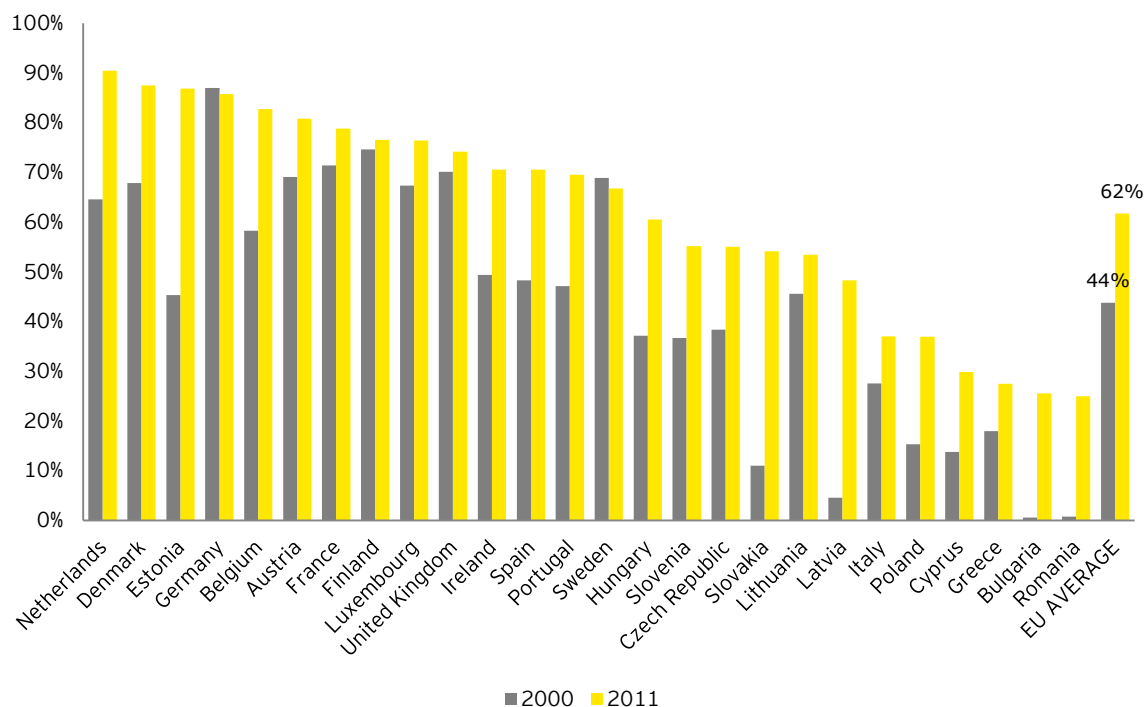
3.1.2. Prevalence of modern grocery retail in the EU

Modern retail, as defined by the current study, constitutes a large portion of the grocery retail market in most of the EU 27 markets (greater than 70% in 12 MS, and greater than 50% in 19 MS). Conversely, traditional retail still makes up a majority of the edible grocery market in many newer MS, with Romania and Bulgaria topping the list of traditional edible grocery retail market share (20% to 30% of modern retail in 2011).

However, these less mature markets are also the most dynamic in terms of the growth of modern retail and the productivity gains being achieved. Whilst the share of modern retail in the edible grocery market increased by only 5.7% points in France and 0.7% points in Germany from 2004 to 2012, this growth reached 20.9% in Romania and 18.9% in Poland over the same period³¹.

Figure 1 illustrates the share of modern retail grocery sales as a proportion of the total edible grocery market in 2000 and 2011.

Figure 1: Evolution of the market share of modern retail compared to total edible grocery market (2000 - 2011)



Source: EY analysis based on © Planet Retail, 2011

This figure presents an opportunity to draw the reader’s attention to a number of caveats arising from the definition of modern retail adopted for this study. Firstly, the full extent of modern retail is slightly understated using the definition that has been adopted, because it does not include convenience stores, which account for 4.5% of the edible grocery market in the EU, and up to 10% in the UK and in Ireland³². Secondly, in some countries (such as Italy) the grocery retail market is highly fragmented and regionalised with a predominance of traditional stores (including fruit

31 Estimates based on © Planet Retail

32 Estimates based on © Planet Retail

and vegetable market, non-branded neighbourhood stores, butchers and bakers)³³. For this reason, the share of formats defined as modern retail is lower in these countries.

These specific situations however have not had a significant impact on the study, as modern retail is predominant in the majority of the MS that form the study sample (6 of the 9 MS have a modern retail share of greater than 60%). The remaining 3 MS enable the study to address a variety of retail situations that reflect the situation in Europe as a whole.

3.2. Recent evolutions in the grocery retail sector in the EU

A number of key trends can be identified in the development of the retail sector in the EU over the past two decades. The descriptions hereunder focus specifically on how these trends have impacted the grocery retail sector.

These trends, covered in the following sections, include:

- Increase in number of shops and commercial sales areas;
- Changes in retail structuration;
- Development of private labels;
- Expansion of retail groups as they look for new sources of growth;
- Development of technologies in parallel with structured back-office organisations.

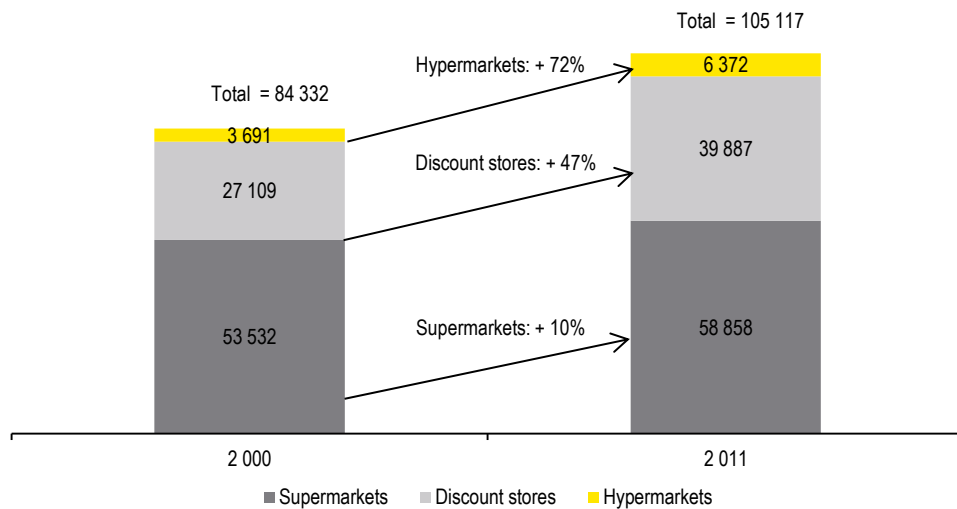
3.2.1. Increase in number of shops and commercial sales areas

Many modern retailers have increased their number of shops and commercial sales areas, as illustrated in Figure 3, changing the commercial landscape for a majority of consumers in the EU:

- Hypermarkets ($\geq 2,500$ m²) sales areas have increased by more than 46% between 2000 and 2011 in EU, with 2,681 additional outlets (523 of which opened in the UK).
- Supermarkets (400 to 2,499 m²) are the leading food shop type in Europe with 44 177 m² of food sales area in 2011. Between 2000 and 2011, the total sales area increased by close to 26%, with 5,326 additional outlets
- Discounters have increased their sales areas by 81% between 2000 and 2011 across the 27 MS, with 12,778 additional outlets.

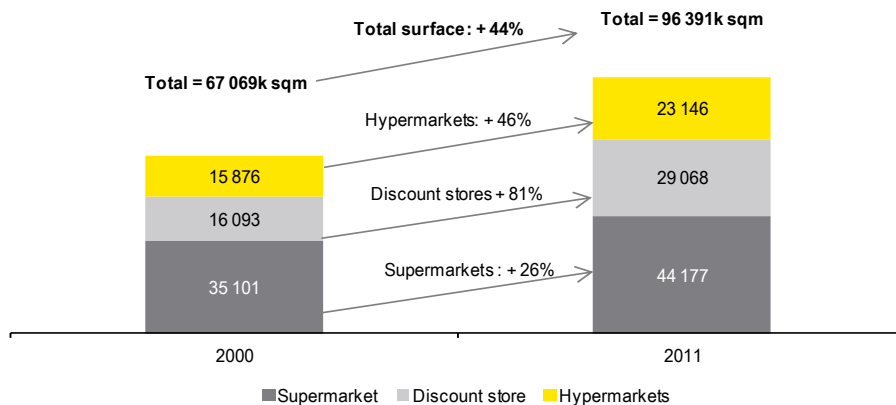
³³ Estimates based on © Planet Retail

Figure 2 : Evolution of the European food retail (in number of outlets) by type of shop (2000-2011)



Source: EY analysis based on © Planet Retail

Figure 3: Evolution of the European food retail sales area (in thousands of m²) by type of shop (2000-2011)



Source: EY analysis based on © Planet Retail

The evolution of shop types potentially has had a major impact on choice of food products for consumers, as different shop types have different assortments:

- Hypermarkets typically have the broadest assortment (20,000 Stock-Keeping Units (SKU) is a common figure for food products) among all food shops because of their superior shelf-space.
- Supermarkets typically sell 5,000 to 10,000 different food SKUs.
- Discounters have the narrowest assortment, typically between 1,000 and 2,000 SKUs.

The assortment offered by grocery retailers is highly related to the shop format they are operating. In the first self-service supermarkets of Europe, it was the breadth of food products offered that was one of the major symbols of the advent of modern retail. Hypermarkets have sufficient sales area to offer a large choice of non-food products, in an effort to diversify revenue streams and stock shelves with high margin non-grocery items to offset low-margin staples. Some hypermarket and superstore

formats provide additional services from restaurants and cafés to beauty salons (Tesco) and banking (Asda, Sainsbury).

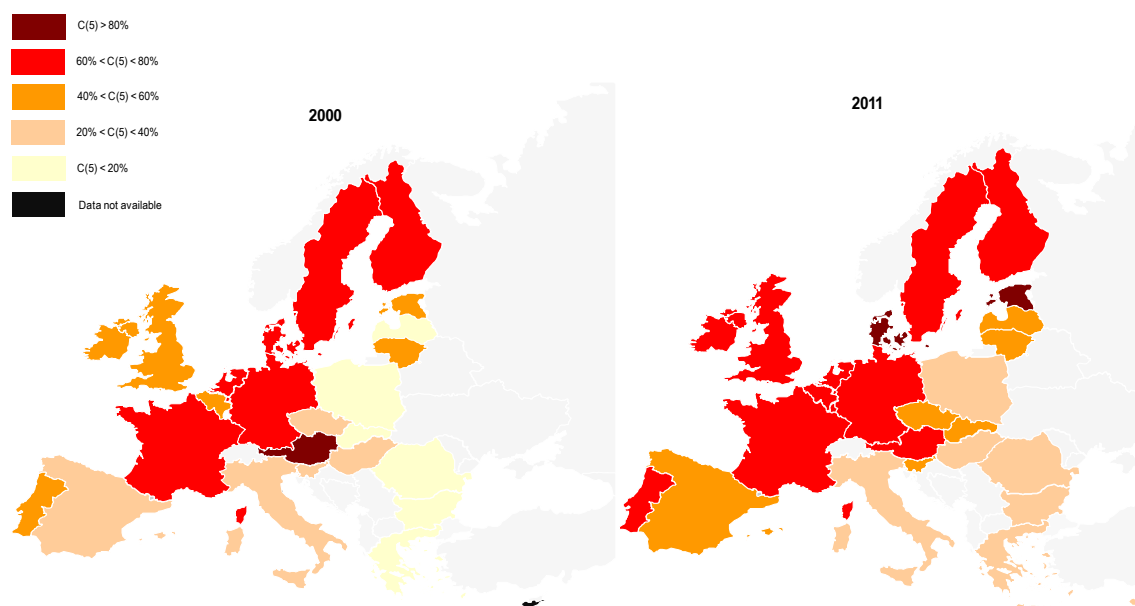
Discount stores have experienced the highest growth in terms of outlets over the past decade. Whilst this format has proven successful throughout Europe, it is in Germany, where discounters captured more than 33% of the edible grocery market share in 2012, that the format has most profoundly changed the landscape of grocery retail. The basic concept behind the discounter format is to provide consumers with highly competitive prices, but a limited assortment. The limited assortment as well as the polyvalent function of staff, has led to considerable economies, allowing the format to remain competitive.

3.2.2. Overall concentration of the total edible grocery market.

As a whole, the concentration of the total edible grocery market has increased over the period of observation, mainly due to the growth of modern retailers.

The evolution of market shares for the top retailers has differed across the various MS over time; however the overall trend is towards increasing concentration at national level. For instance the figure below shows that the top 5 retailer market share at national level (not necessarily the same 5 in each MS) exceeds 60% in 13 MS, representing 52.8% of the EU population in 2011, in comparison with 8 MS in 2000, representing 38.4% of the population.

Figure 4: Evolution of the combined market shares of the top 5 retailers C(5) per MS (2000 - 2011)



Source: Planet Retail

3.2.3. Structuration of modern retailers

Three major trends have been observed at EU level across MS in retailers' structuration:

- Increasing share for modern retailers in terms of the total edible grocery market

- Increasing market shares for 10 top retailers through either organic growth or acquisitions
- Organisation of retailers in buying groups and alliances

Each of these characteristics will be presented in the analysis below.

Increasing share of modern retail

Modern retailers have expanded and increased their influence in most EU MS, but the situation remains heterogeneous across the different MS, as illustrated in Figure 1. In comparison to other sectors, retail concentration in the market for total edible grocery (including all types of shops) is relatively low (though also increasing). The market share of modern retail (limited to hypermarkets, supermarkets and discount stores) has generally increased in mature MS, but also in MS where modern retail has developed more recently. Modern retail share has increased in 24 MS, whilst only slightly decreased in 2 MS (Germany and Sweden), over the period 2000 to 2011. Malta has been excluded from the analysis due to a lack of available comparable data.

Member States can generally be grouped into three categories:

- 1) MS where modern retail had already developed before 2000 (at least 65% of total food market) and has maintained this high modern retail market share – this includes for instance Germany, Finland, UK, Sweden, France, Luxembourg or Austria.
- 2) MS where modern retail has developed particularly since 2000 and is significantly higher in 2011 than 2000 (at least 20 percentage points) – this includes for instance the Netherlands, Estonia, Belgium, Ireland, Spain, Portugal, Hungary or Slovakia
- 3) MS where modern retail has developed significantly but remains relatively low compared to other MS (less than 50% of total food market in 2011) – this includes Latvia, Poland, Cyprus, Bulgaria or Romania.

It is interesting to note that some MS with the lowest modern retail share in 2011 (e.g. Romania, Bulgaria, Latvia and Slovakia) have experienced the greatest growth over the following decade, whilst other MS with a similarly low share in 2000 (such as Italy and Greece) have not witnessed the same extent of growth over the last decade.

Increasing market shares for top 10 European retailers

At the pan-European level, the top 10 European retailers accounted for 26% market share in 2000, compared to 30.7% in 2011, representing an increase of +4.7 points (see

Table 1 below). It is interesting to note that, whilst some retailers increased their market shares and others lost market share during this period, the top 10 European retailers have remained the same.

Table 1: Market share (in edible grocery sales) of the top 10 retailers in EU (2000 - 2011)

| Top 10 in 2000 | | | Top 10 in 2011 | | |
|-------------------|-----------------------------------|-------------------|----------------|-----------------------------------|-------------------|
| Company | Edible grocery banner sales (€ M) | % EU market share | Company | Edible grocery banner sales (€ M) | % EU market share |
| Carrefour | 44 441 | 5.2% | Schwarz Group | 50 059 | 4.7% |
| ITM (Intermarché) | 27 308 | 3.2% | Carrefour | 49 267 | 4.5% |
| Rewe Group | 23 355 | 2.6% | Tesco | 40 310 | 3.8% |
| Tesco | 23 034 | 2.7% | Edeka | 37 031 | 3.4% |

| Top 10 in 2000 | | | Top 10 in 2011 | | |
|----------------|-----------------------------------|-------------------|-------------------|-----------------------------------|-------------------|
| Company | Edible grocery banner sales (€ M) | % EU market share | Company | Edible grocery banner sales (€ M) | % EU market share |
| Edeka | 21 654 | 2.5% | Aldi | 33 529 | 3.1% |
| Aldi | 21 268 | 2.5% | Rewe Group | 32 324 | 3.0% |
| Ahold | 15 811 | 1.9% | Auchan | 23 378 | 2.2% |
| Schwarz Group | 15 471 | 1.8% | ITM (Intermarché) | 22 668 | 2.1% |
| Auchan | 15 234 | 1.8% | Leclerc | 22 509 | 2.1% |
| Leclerc | 14 311 | 1.7% | Ahold | 19 851 | 1.9% |
| TOTAL | 221 889 | 26.0% | TOTAL | 330 926 | 30.7% |

Source: EY analysis based on © Planet Retail

The two past decades have been marked by a number of important joint-ventures, mergers and acquisitions in the retail sector, either to penetrate new markets, or consolidate positions on domestic markets, particularly in the face of increased international competition. As an example, in 1999, Carrefour's merger with Promodes created Europe's largest and the world's second largest retailer to Wal-Mart. Other notable mergers at this time involved Rewe/Meinl in Austria in 1999 and Makro/Metro in 1998. However not all merger bids have been successful. In 1996 the European Commission prohibited the proposed merger between Kesko and Tuko in Finland which would have created a company with a national market share of 60%. This said, merger and acquisition plans are tending to be increasingly scrutinised by national and European competition authorities.

Organisation in buying groups and alliances

Increasing concentration can also be seen at the procurement level, through the development of buying groups. Buying groups are essentially a type of retail purchasing alliance, at a regional, national or international level. In essence, a buying group is an organization created by several shops or retailers with the aim of improving their purchasing conditions as well as enhancing their market competitiveness compared to other types of retail players.³⁴

Buying groups, or procurement organisations, have existed since the 1930s but they have developed particularly since the 1980s-1990s, a period which has witnessed the rise of cross-border alliances. The aim of cross-border groups is particularly to strengthen the retailers' bargaining power through higher volumes to reduce purchasing costs, for the procurement of large international brands or for private labels.

Several types of buying groups have emerged, which differ by their scope and organisation:

- Regional buying groups: group several shops operating in the same geographical area
- National buying groups operating at national level for one or several banners or retail groups
- International buying groups operating for one single retail group across several geographies or several retail groups operating in different countries.

³⁴ Bălan, Carmen, The Alliances of European Retailers and their effects in the field of marketing and supply chain, The Romanian Economic Journal, 2007

All these types of buying groups aim to strengthen the retailers' bargaining power through higher volumes to reduce purchasing costs, for the procurement of manufacturer brands or for private labels.

Specifically relating to private labels, as an example, in 2010 French retailer Auchan and Metro Cash and Carry formed a purchasing collaboration to expand their respective private label businesses. Under the agreement, Auchan granted Metro Cash and Carry (wholesale arm of Germany's Metro Group) access to its private label supplier network in order for Metro to gain better buying prices.³⁵

Retailers have also created international alliances to respond to the increased internationalisation of suppliers. The main international buying groups in Europe are presented in the Table 2 below.

Table 2: Selection of main international buying groups in EU

| Buying Group | Countries of operation in Europe | Selected Members |
|---------------|----------------------------------|--|
| AMS | 22 | Ahold, Booker, Dansk Supermarked, Delhaize, Esselunga, Hagar, Jeromimo Martins, Kesko, Migros, Morrisons, Systeme U, Uniarme |
| EMD | 20 | Axel Johnson, Casino, Mercator, Musgrave Group, Norgesgruppen |
| Core | 18 | Colruyt, Conad, Coop, Rewe Group |
| Agenor/Alidis | 8 | Edeka, Eroski, ITM |
| Bloc | 4 | Cactus, Louis Delhaize,... |

Source: EY analysis based on © Planet Retail

Retailers face challenges today in forming/joining buying groups for several reasons:

- Commercial sensitivity surrounding purchasing decisions and sharing of information (purchasing conditions are confidential and sharing of information is limited by law). As an example, Coopernic recently dissolved in 2013 and was replaced by a new group called "Core", which excluded the founding member of Coopernic Leclerc, due to "insurmountable differences concerning the future form and strategic focus of the group"³⁶ according to a Rewe official. The new alliance "Core" therefore comprises Colruyt, Conad, Coop and Rewe Group.
- Buying groups impose a certain degree of centralization, and not all retailers have the same approach in this area (independents are often resistant to centralization) and even the largest groups are favouring flexible local arrangements, with the exception of hard discounters which seem to be more centralized.

3.2.4. Steady development of private labels

Private labels, sometimes referred to as retail 'own-brands', are goods for which retailers directly contract manufacturers to produce and then sell under their own brands. These products are typically sold as lower cost alternatives to major national and international brands, although retailers also develop upscale private label products.

³⁵ <http://www.lsa-conso.fr/auchan-developpe-des-mdd-pour-metro,116793>

³⁶ © Planet Retail, "COOPERNIC members exclude LECLERC from new alliance", 9 September 2013

Globally, penetration of private labels is high in Europe, where they can exceed 40% market share in countries such as Switzerland and the UK, compared with an average in the US of 18% market share in 2011³⁷. Offering lower prices is potentially a key reason why the market share of private label has increased in grocery sales over the years – with price being a primary concern of European consumers. Finally, the market share of **private label products** has increased across most product categories in Europe. Key reasons for this likely include a perception among consumers that these products offer good value for money, the opportunity of higher margins for retailers, and a profitable way for manufacturers to make use of spare capacity.

Private labels are increasingly being seen by retailers as important tools for building client loyalty and strengthening banner image. Thus, beyond generic and 'mimic' private labels, which are designed to provide low-cost alternatives or directly compete with manufacturer's brands, retailers have increasingly developed high quality private labels brands that compete side by side with manufacturer's brands or specifically positioned product ranges, such as organic.

3.2.5. Geographic expansion as a new path of growth

Grocery retail groups in Europe have become increasingly international over the past two decades. Whilst this may be taken as a given today, it is a fairly recent phenomenon for the retail sector. Compared with other industries, retail is still fairly anchored in domestic markets. Even among the most internationalised grocery retailers, very few have succeeded in surpassing the 50% mark for turnover in foreign countries.³⁸

This internationalisation can be attributed to several factors. As retail markets in more developed MS are seeing their growth rates stabilise, retailers have increasingly begun to expand outside of their home markets and export their business models to markets that possibly offer higher sales growth potentials. In addition, the enlargement of the EU and the Single Market has facilitated this expansion in opening up new markets to Western European retailers. These new markets tend to offer stronger economic growth and historically lower levels of competition. In particular, newer MS from Central and Eastern Europe have been popular targets for expansion for Western European groups over the past decade³⁹. As a result, whilst modern retail has increased rapidly in these countries, very few of the top grocery retailers in these countries are locally based⁴⁰.

However, there are examples of restrictions put in place to limit the influence of foreign retailers. In Hungary in January 2012, a decision was made to ban for the three subsequent years the construction of retail outlets of greater than 300m². In addition, new hypermarkets exceeding 10,000 m² require planning permission from local magistrates. The aim of the policy is to support the development of the small-

37 Private labels 2013 : The Global Grocery Trends to Watch. © Planet Retail

38 Sandberg, Erik, "The retail industry in Western Europe - Trends, facts and logistics challenges". 2010, Department of Management and Engineering, Linköping University

39 International expansion has been particularly pronounced among French (Carrefour, Auchan) and German (Aldi) retailers, both MS boasting grocery retailers among the top ten worldwide. On the other hand, retail groups in newer MS have not enjoyed the same level of expansion.

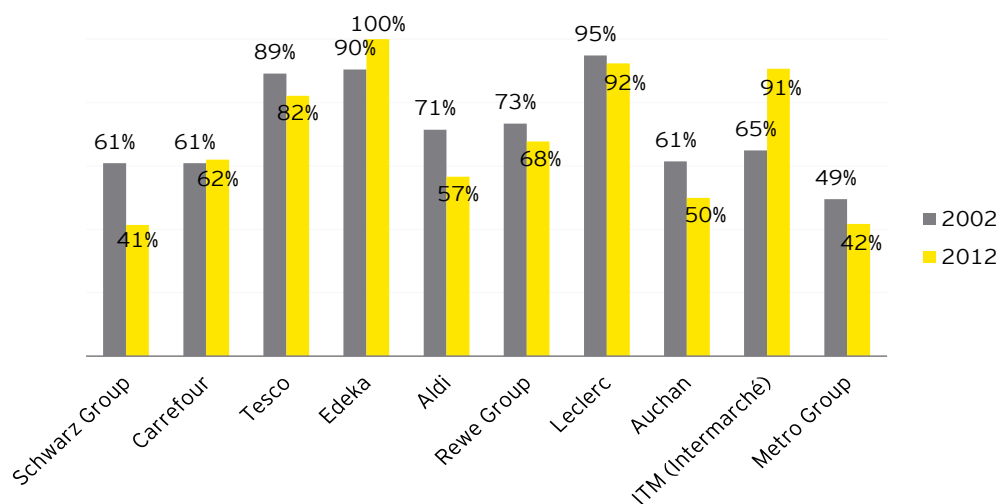
40 Notable exceptions include the Maxima group, a highly successful Lithuanian based retailer that is one of the biggest and most successful in the Baltic market, with a 35% share of the edible grocery market in its home market (© Planet Retail)

scale retail sector; however it has had significant impacts on the expansion plans of Schwarz Group, Tesco and Aldi.

Nevertheless, this geographical expansion has been accomplished through a number of different models:

- The acquisition of local retailers (e.g. Jeronimo Martins acquisition of Biedronka in Poland in 1997)
- Joint ventures with local retailers or investors (e.g. Ahold has been present in Portugal via its joint venture with local retailer Jeronimo Martins since 1992)
- The setting-up of own subsidiaries (e.g. Casino in Brazil, Colombia and Thailand)
- Franchising (e.g. Carrefour Poland continuing to expand smaller shop formats via franchises)

Figure 5: Domestic share of EU grocery sales for top ten retail groups



Source: EY analysis based on © Planet Retail

For most European retailers, domestic markets remain their main market. However, as illustrated in Figure 5, one can observe the general decrease in the importance of home markets for top European retailers in terms of the domestic share of European grocery banner sales, due to international expansion, with the notable exception of ITM and Edeka, which, following strategic reorientations, have made the decision to focus on consolidating their respective home markets. Furthermore, some retail groups have focused their growth strategies on non-European markets. Whilst less mature markets in the EU offer the advantages of geographical and relative cultural proximity, the developing world can offer even more growth opportunities for European retailers. For example, whilst the figure above shows Carrefour's domestic sales have remained stable over the last decade as a proportion of European grocery sales (62%), the graph does not show that in terms of international sales, domestic sales only represent 43% in 2012 compared to 51% in 2002. Similarly, for Tesco, which has pursued only relatively modest expansion in Europe, the UK market still represented only 51% of total grocery banner sales in 2012. It is important to mention that, compared to global manufacturers, retailers benefit less from synergies through international expansion. Each country uses specific logistics, purchasing organisations, back-offices.

3.2.6. Development of technology in retail

Sophisticated technology now pervades modern retail and has played an important role in the rationalisation of the sector and the efficiency gains achieved. Some technological advances are readily apparent to consumers in shops, such as self-service checkouts, price-check scanning machines, and electronic shelf labels that allow store managers to respond instantaneously to fluctuations in prices. Furthermore, the recent development of NFC (near field communication) wireless technology has the opportunity to impact modern retailers, since shoppers can scan items into their basket and then checkout by simply tapping their NFC phone to a reader attached to the retailer's cash register.

Other technological advances are apparent outside the shop, such as retail grocery price comparison websites (e.g. www.mysupermarket.co.uk), and the emergence of digital walls in subway stations where groceries each have a QR code that the shopper can scan with a smartphone camera, adds to its shopping list, pay using the phone and have the groceries delivered.

Finally, whilst it does not fall within the scope of this study, e-commerce has also developed significantly in the grocery retail sector over the past decade. This sector has caught on with consumers and developed in a number of markets, most notably the UK, France and Spain.⁴¹ E-commerce food sales are still marginal across Europe, however, in developed markets such as the UK, online grocery sales currently account for nearly 3% of total food sales.⁴² A new e-commerce concept, the "Drive", has been developed over the last few years in some MS, especially in France. It enables consumers to order their food products on a website and then pick them up in store or in alternative locations.

3.3. Macro evolutions impacting the grocery retail sector in the EU

This section highlights a number of key macro developments over the last decade which have potentially impacted the grocery retail sector and specifically modern retail.

3.3.1. Evolution of broader retail market and consumption due to stunted purchasing power

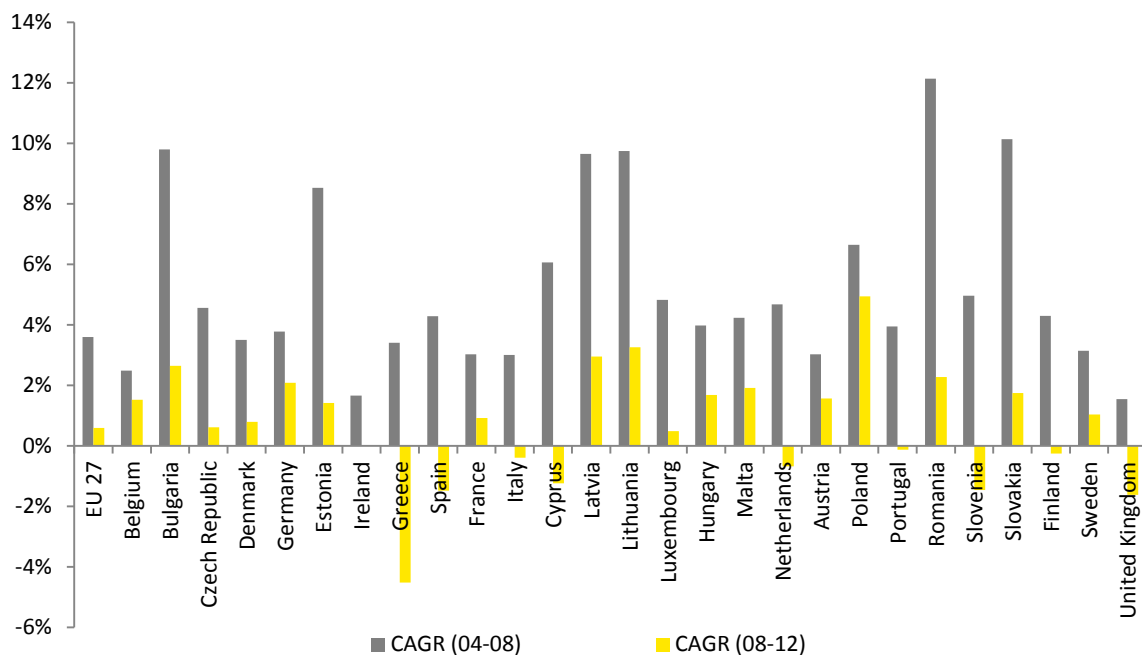
Declining GDP per capita since 2008

Since 2008, the economic crisis in Europe has arguably had a number of impacts on purchasing power and therefore food consumption trends and modern retail market development. Figure 6 below demonstrates the relatively lower growth of GDP per capita since 2008, compared to the 2004-2008 period, resulting from the economic crisis. Growth has slowed in 2008-2012 compared to 2004-2008 for all MS, and negative growth was registered in the 2008-2012 period by 9 MS.

41 'The future of online grocery in Europe'. McKinsey, 2012.

42 © Planet Retail

Figure 6: Compound annual growth rate of GDP per capita in EU 27

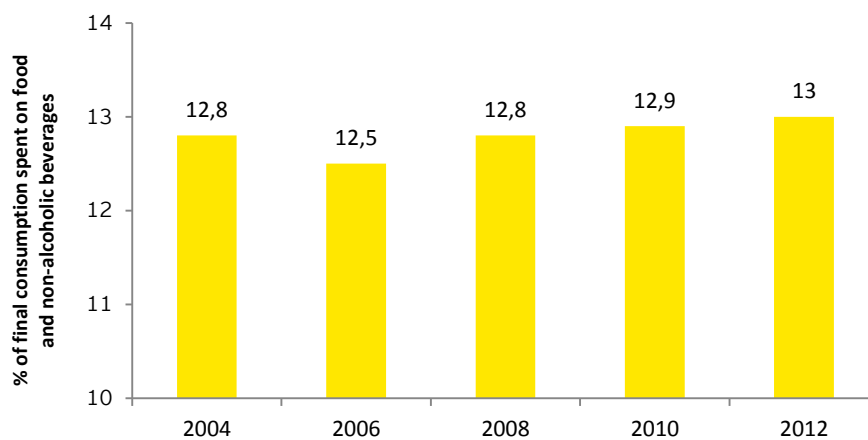


Source: EY analysis based on Eurostat, [nama_gdp_c]

Consumers are spending on average 13% of total expenditure on food and non-alcoholic beverage

The proportion of household expenditure spent on food has been impacted by the state of the economy. As demonstrated in Figure 7, after decreasing from 2004 to 2006, the average share of household expenditure on food and non-alcoholic beverages across the EU 27 is on a gradual upward trend since 2006. This means that consumers are spending more of their income on food and beverage. It may explain the recent focus of consumers on value-for-money products, in order to save money on what may be considered staple purchases.

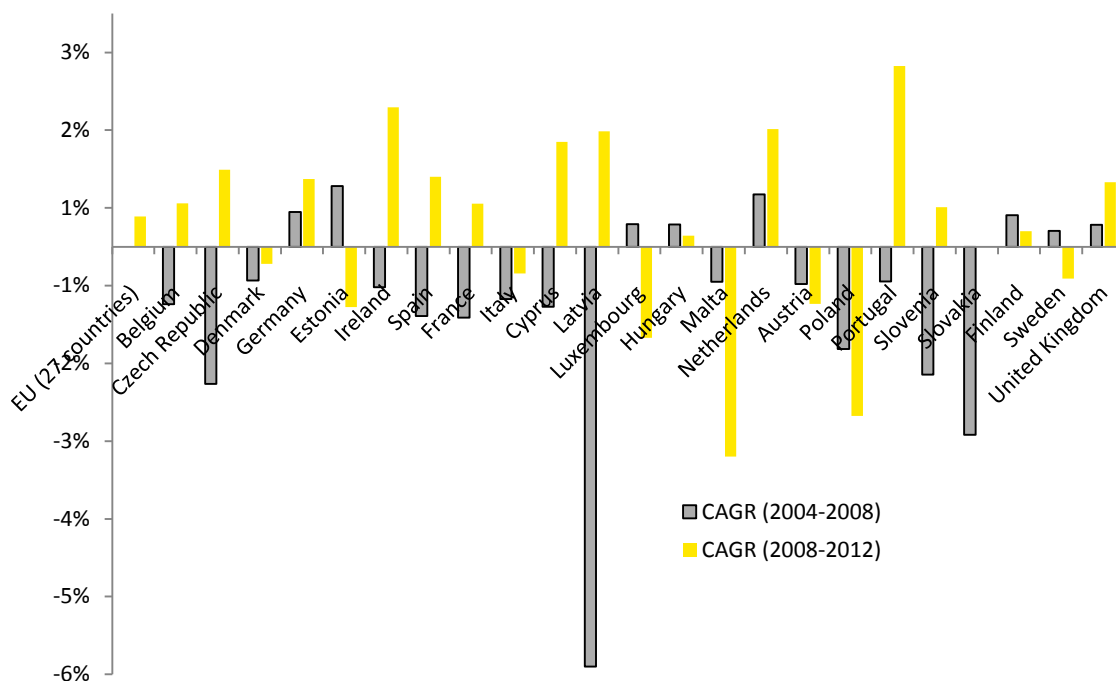
Figure 7: Average final consumption expenditure of households for food and non-alcoholic beverages across EU 27 (% of the total expenditure)



Source: EY analysis based on Eurostat, (TSDPC520)

As can be seen from Figure 8, the situations have been quite heterogeneous across MS over this period⁴³. Whilst growth since 2008 has been positive in 15 MS (notably in Portugal, Ireland, Latvia and Cyprus), consumers are spending a smaller proportion on food over recent years in 8 MS (notably Malta, Poland and Luxembourg).

Figure 8: Compound annual growth in the share of final consumption expenditure of households of food and non-alcoholic beverages per MS (% CAGR)

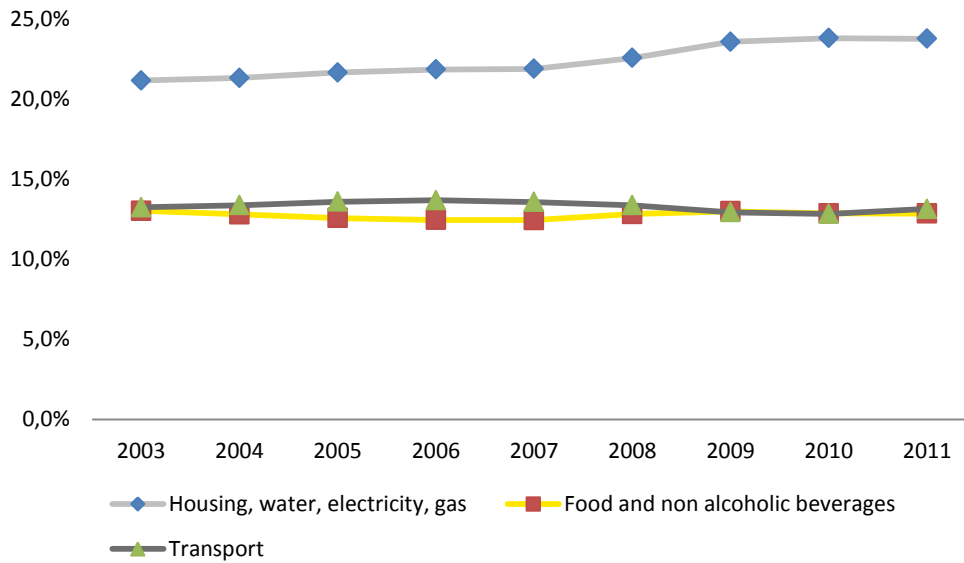


Source: EY analysis based on Eurostat, (nama_co3_c)

This said, the main household expenditure item remains housing, water, electricity and gas which has increased steadily over the last decade (from 21.2% in 2003 to 23.8% in 2011), as shown in Figure 9. This increase places further pressure on the available budget for groceries.

43 Bulgaria, Greece, Lithuania and Romania not represented on graph due to incomplete data

Figure 9 : Proportion of key household expenditures compared to the total household expenditure for EU-27 (2003-2011)

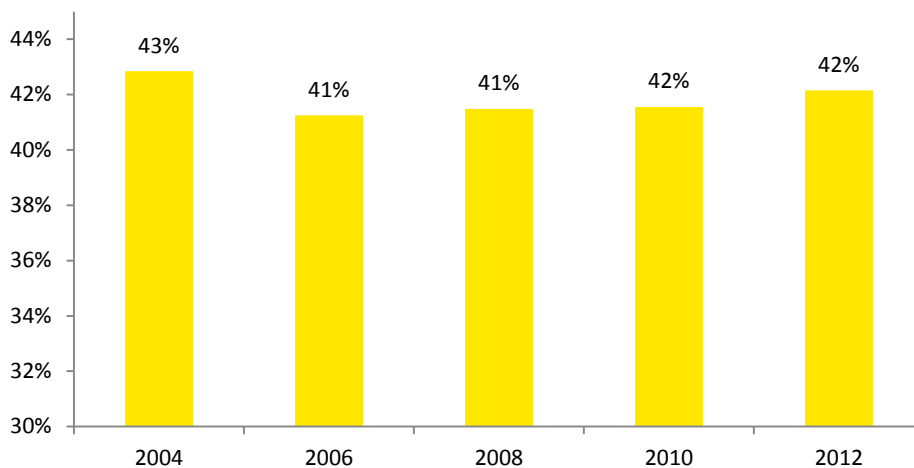


Source: EY analysis based on Eurostat, [nama_co3_c]

Stable edible grocery share of broader retail market

In the EU, grocery sales account for a large proportion of retail sales, as shown in Figure 10; however this proportion has remained rather stable over the past decade, experiencing a slight reduction between 2006 and 2010.

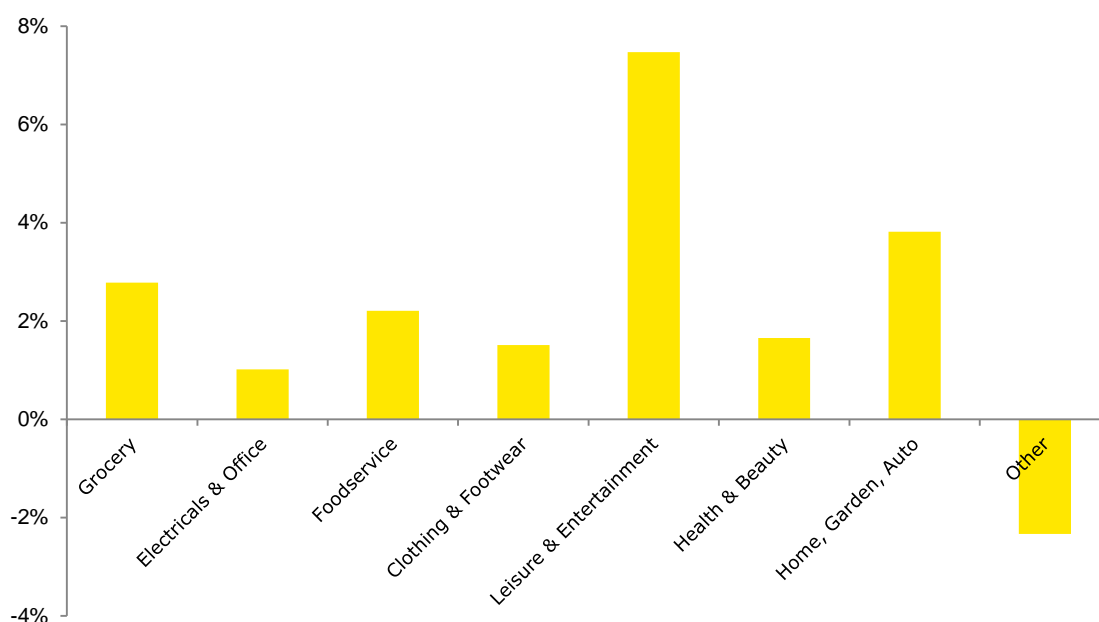
Figure 10: Edible grocery proportion (in %) of total retail sales in EU 27 between 2004 and 2012



Source: EY analysis based on © Planet Retail

The growth of edible grocery retail sales is relatively stable compared to other retail sectors over the last 8 years (see Figure 11). Markets that have grown significantly over recent years include Leisure & Entertainment and Home, Garden and Automotive.

Figure 11: Compound annual growth rate in EU retail markets (2006 to 2012)



Source: EY analysis based on © Planet Retail

3.3.2. Socio-economic evolutions in the EU impacting food consumption patterns

Three particular characteristics have potentially had an impact on evolutions in the grocery retail sector:

- Unemployment rates have risen
- Consumers are increasingly seeking low prices
- Household composition evolution impacts consumption habits
- New consumer needs have appeared

Each of these characteristics will be addressed in the section below.

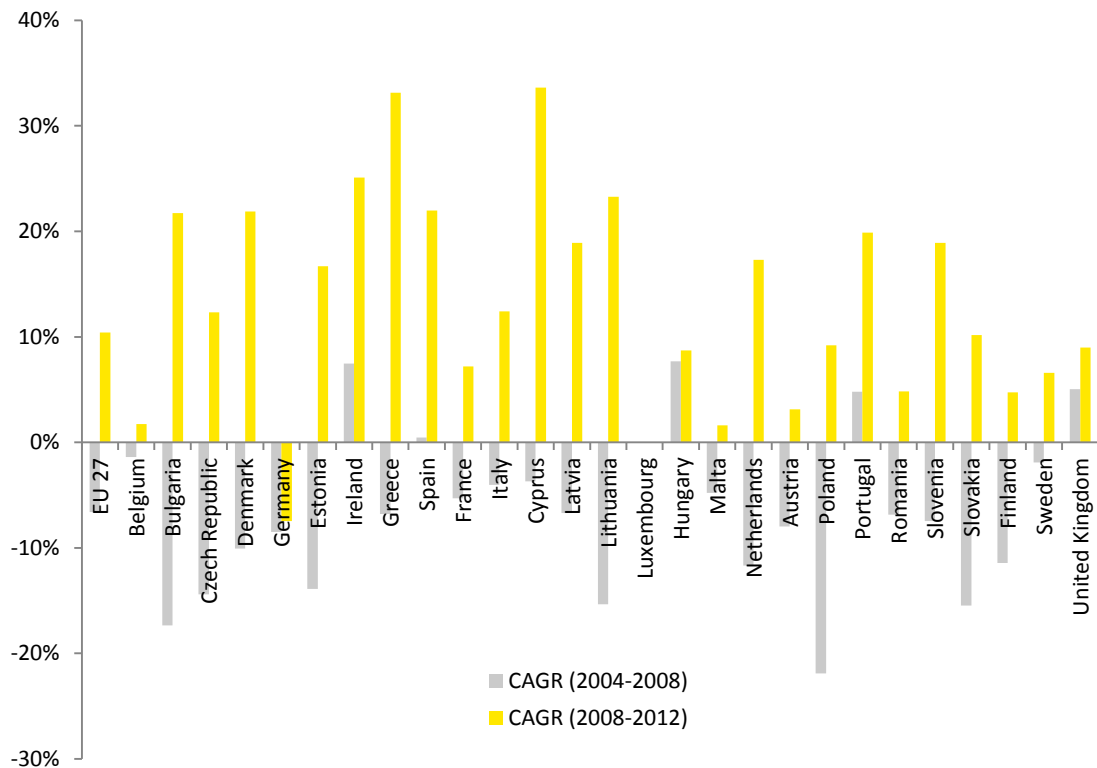
Unemployment rates have risen since 2008

Since the economic crisis that began in 2008, the unemployment rates in nearly all MS have risen. Figure 12 below shows the compound annual growth rate of the unemployment rate over the pre-crisis (2004-2008) and crisis (2008-2012) periods.

The unemployment rate has increased between 2008 and 2012 in 25 MS (to the greatest extent in Greece and Cyprus), and has only decreased in Germany, whilst in Luxembourg it has remained stable.

This compares with the pre-crisis (2004-2008) period, where unemployment only increased in 5 MS (Ireland, Spain, Hungary, Portugal and the UK), and was either stable or decreased in all other MS.

Figure 12: Compound annual growth in unemployment rate (in %) across EU 27 between 2004 and 2012



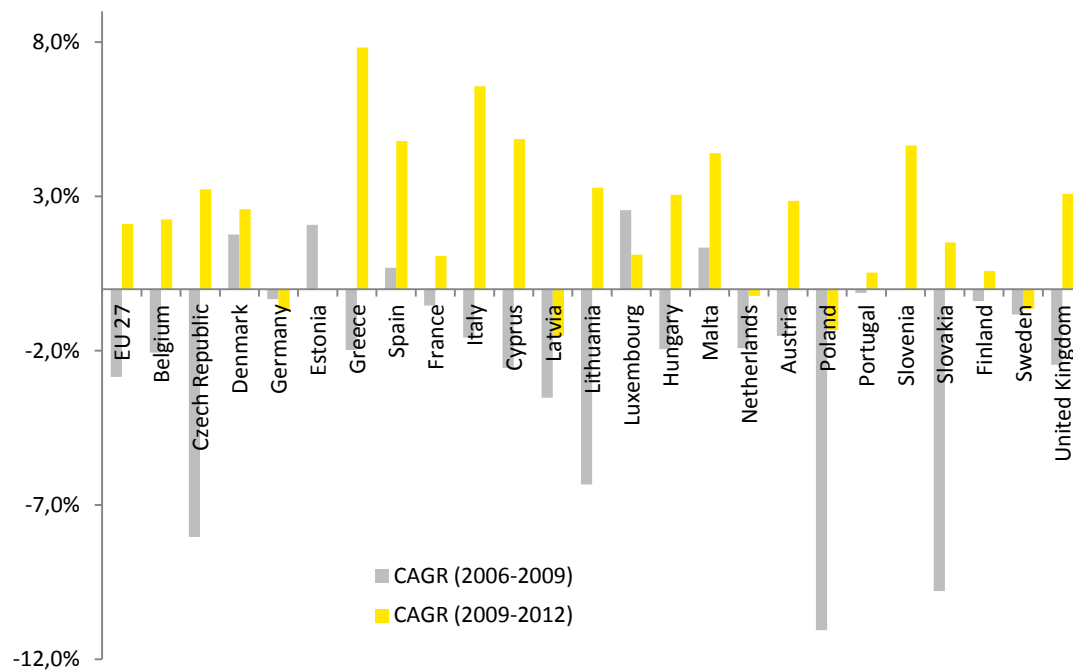
Source: EY analysis based on Eurostat, [lfst_r_lfu3rt]

A greater proportion of the population is at risk of poverty and is seeking lower prices as a priority for consumers

The purchasing power of many EU consumers is under pressure due to slow economic growth and fiscal tightening. Figure 13 shows the growth in the percentage of the population at risk of poverty both during the pre-crisis and crisis periods⁴⁴. Whilst growth in this indicator was negative in 18 MS between 2006 and 2009 (positive only in 5 MS), from 2009 to 2012 the trend was reversed, with 19 MS registered increased growth and only 5 MS with negative growth.

44 2006-2009 chosen as pre-crisis and 2009-2012 as crisis periods due to lack of data from 2004.

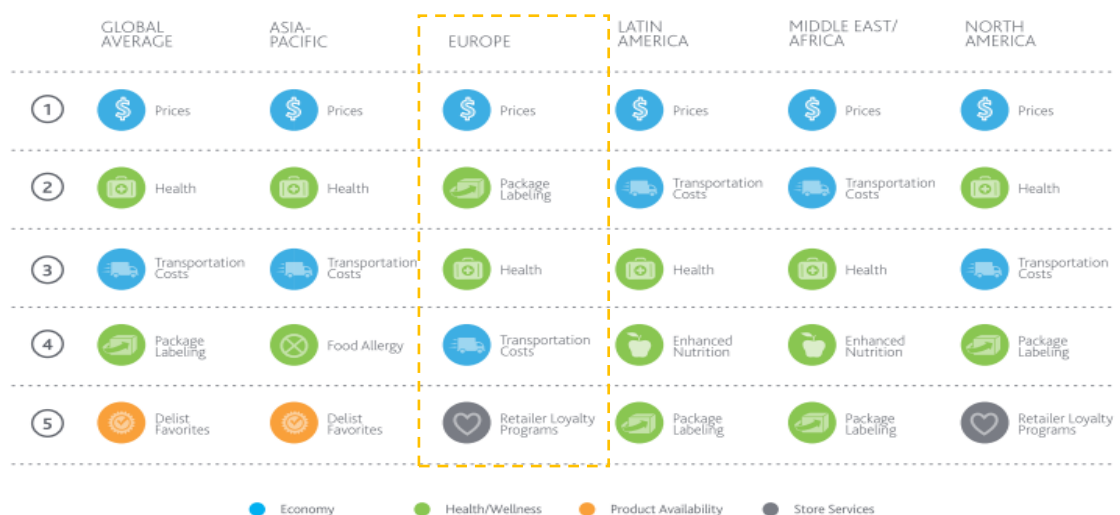
Figure 13: Compound annual growth in percentage of population at risk of poverty after social transfers (2004-2012)



Source: EY analysis based on Eurostat, [ilc_peps01]

As a consequence, price has become the number one criterion in shop selection for consumers across all kinds of goods, including food (See Figure 14).

Figure 14 : Top 5 major impact factors on grocery purchase choice in 2011⁴⁵



Source: Nielsen Global Survey of Grocery Purchase Impact, Q1 2012

⁴⁵ Package labelling entails the information contained on the label as well as its presentation (user friendly,...)

The Nielsen Global Survey shows that the increasing cost of food is affecting 81% of respondents in Europe, with more than half of respondents indicating that rising food prices are having a major impact on choice of grocery purchases.

As a result, many consumers have changed their shopping behaviours, such as showing preferences for products in multi-packs, family sized/economical size packs, and lower cost private label products.

Household composition impacting consumption habits

The last decade has seen a change in the household's composition. In 2011, the most common household type in the EU 27 was the single person living alone (31.4%).⁴⁶ This increase in single households or households with tight incomes has seen a trend towards smaller portion sizes and packaging (single servings) to meet consumer needs. For example, Auchan in France offers beef steak in small 80g packs to respond to the needs of single household consumers.⁴⁷

Moreover, there is an increasing trend towards an ageing population, due particularly to the retirement of baby boomers, a birth rate decrease and an increase in life expectancy, which has potentially impacted consumption habits. In 2012, 17.8% of the EU population was in the 65+ category, up from 15.6% in 2000⁴⁸.

Finally, an increase in the participation rate of women in the workforce (from 54.3% in 2001 to 58.5% in 2011)⁴⁹, may account for changes in grocery retail, in terms of store formats to address time-constrained consumers, and products requiring less preparation and cooking time, such as ready-prepared meals or quick meal solutions.

New consumer preferences impacting grocery choice

A number of new consumer preferences have gained influence over the recent decade, and have had an impact on the grocery retail market in Europe, including:

- Health consciousness changing food trends
- The development of ethnic food to reflect changing demographics and needs
- Increase in environmental awareness
- Focus on convenience for time-constrained consumers

Over recent years interest in issues connected to health has grown among consumers, impacting choice and final food consumption. There is a better awareness of food intolerances, allergies, food-related diseases, overweight and obesity, resulting in a more educated and aware consumer, as well as the growth of specific product categories such as gluten-free food (double-digit growth in Europe). As an example, in 2013 Ahold-affiliated Swedish grocer ICA launched a line of gluten-free food products under the new private label ICA Glutenfri.⁵⁰ In France, the government launched a law in March 2007 that ensures that food and drink manufacturers include health

46 Eurostat, European social statistics, 2013 edition, ISSN 1977-7930

47 © Planet Retail, Euro crisis transforms shopping behaviour, 2012

48 Eurostat, European social statistics, 2013 edition, ISSN 1977-7930

49 Eurostat, 2012

50 © Planet Retail

messages when promoting their products on all broadcast and print advertising. The aim is to encourage consumers to eat a more balanced diet. Both suppliers and retailers have to include one of four health messages in their advertisements. If companies do not mention a health messages they can be fined up to 1.5% of their advertising budget.

With the globalization trend, food products from all corners of the world have become more widely available. In 2010 UK grocery retailer Tesco introduced seven new ethnic food ranges due to popular demand for world foods. Over the previous 12 months, Tesco had doubled its world food ranges to include 3,000 products, and claimed the sector had grown by 35% from 2009 to 2010.⁵¹

Moreover, environmental awareness has become an increasing concern, due to the consequences of environmental degradation and pollution, and this has had an impact on consumer choices. There has been a strong development in the offering of bio products. Indeed the recent development of the organic food sector is due to the environmental friendly farming systems required to benefit from the "organic" label. Leclerc launched in 2011 an eco-friendly Conso Responsable label. The label now covers more than 450 food and non-food SKUs, including entry price, private labels and national brands. Items under the label are considered more environmentally friendly in terms of ingredients, manufacture, packaging, transportation and biodegradability.⁵² Furthermore, in 2013 Carrefour relaunched its organic product range in France.

Finally, consumer interest in convenience aspects has become more important in recent decades. Convenience refers to optimizing time and energy spent through the private household's meal production chain, i.e., during shopping, storage, preparation, eating and disposal. This focus has driven the development of a number of retail innovations over the last years, including the drive format, self-service check-outs, ready prepared meals and prepared cuts of meat, such as for giros or goulash.

51 © Planet Retail

52 © Planet Retail

4. Scope, measures and methodology

This section presents the final scope of data, indicators and measures for the study as well as specific approaches applied. Its objective is to provide an introduction to the subsequent section on descriptive statistics.

4.1. Selection of MS

The selection of MS was designed to be representative of a broad variety of situations in the EU 27, taking into account different levels of retail concentration, private label share, and in an attempt to cover a broad EU population. The scope of MS selected covers 9 MS: the representativeness of the sample is presented in Table 3 below.

The selection of MS covered in the study varies according to the scope of analysis (local level or procurement (national) level), and the different variables and drivers being measured, in an effort to maximise the size and representativeness of the sample of MS for each measure.

The table below synthetises the geographic coverage for each of the drivers, choice and innovation components.

The conomic impact of modern retail on choice and innovation in the EU food sector

| Indicators | source | Austria | Belgium | Bulgaria | Cyprus | Czech Republic | Denmark | Estonia | Finland | France | Germany | Greece | Hungary | Ireland | Italy | Latvia | Lithuania | Luxembourg | Malta | Netherlands | Poland | Portugal | Romania | Slovakia | Slovenia | Spain | Sweden | United Kingdom | Number of MS |
|---|------------------------------|---------------------------------------|---------|----------|--------|----------------|---------|---------|---------|--------|---------|--------|---------|---------|-------|--------|-----------|------------|-------|-------------|--------|----------|---------|----------|----------|-------|--------|----------------|--------------|
| | | Evolution of choices 2004-2012 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Shop choices (2004-2012) | @Nielsen trade dimension | | | | | | | | | ● | | | | | ● | | | | | | | ● | | | | ● | | | 4 |
| Shop choices (2008-2012) | @Nielsen trade dimension | | ● | | | | | | | ● | | | ● | | ● | | | | | | | | ● | | | | ● | | 6 |
| Product variety, price variety, size variety (2004-2012) | @Nielsen Opus | | ● | | | | | | | ● | | | | | ● | | | | | | | ● | ● | | | | ● | | 6 |
| Product variety, price variety, size variety (2008-2012) | @Nielsen Opus | | ● | | | ● | ● | | | ● | | | ● | | ● | | | | | | | ● | ● | | | | ● | | 9 |
| Evolution of innovations 2004-2012 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Number of innovations (2004-2012) | @Nielsen Opus | | ● | | | | | | | ● | | | | | ● | | | | | | | ● | ● | | | | ● | | 6 |
| Number of innovations (2008-2012) | @Nielsen Opus | | ● | | | ● | ● | | | ● | | | ● | | ● | | | | | | | ● | ● | | | | ● | | 9 |
| Categories of innovations (2004-2012) | @Mintel GNDP | | ● | | | | | | | ● | | | | | ● | | | | | | | ● | ● | | | | ● | | 6 |
| Categories of innovations (2008-2012) | @Mintel GNDP | | ● | | | ● | ● | | | ● | | | ● | | ● | | | | | | | ● | ● | | | | ● | | 9 |
| Evolution of concentration | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Retail concentration at national level (Retail group & banner level) - 2004-2012 - C5 / HHI | @Planet retail | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | 26 |
| Retail concentration at local level - C5 / HHI (2004-2012) | @Nielsen trade dimension | | | | | | | | | ● | | | | | ● | | | | | | | ● | | | | | ● | | 4 |
| Retail concentration at local level - C5 / HHI (2008-2012) | @Nielsen trade dimension | | ● | | | | | | | ● | | | ● | | ● | | | | | | | ● | ● | | | | ● | | 6 |
| Supplier concentration at national level - 2004-2012 | @Euromonitor | | ● | | | ● | ● | | ● | ● | ● | ● | ● | ● | ● | | | | | | ● | ● | ● | ● | | | ● | ● | 14 |
| Supplier concentration at local level - 2004-2012 | @Nielsen Opus | | ● | | | | | | | ● | | | | | ● | | | | | | ● | ● | | | | | ● | | 6 |
| Measure of imbalance (national level only) - 2004-2012 | @Planet retail, @Euromonitor | | ● | | | ● | ● | | ● | ● | ● | ● | ● | ● | ● | | | | | | ● | ● | ● | ● | | | ● | ● | 14 |
| Evolution of other a priori drivers | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Macroeconomic data (GDP, population, unemployment, etc.) | Eurostat | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | 27 |
| Shop types at national level - 2004-2012 | @Planet retail | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | 26 |
| Shop type, shop size - 2004-2012 | @Nielsen trade dimension | | | | | | | | | ● | | | | | ● | | | | | | | ● | | | | | ● | | 4 |
| Shop type, shop size - 2008-2012 | @Nielsen trade dimension | | ● | | | | | | | ● | | | ● | | ● | | | | | | | ● | ● | | | | ● | | 6 |
| Private label share (national level) - 2004-2012 | @Euromonitor | | ● | | | ● | ● | | ● | ● | ● | ● | ● | ● | ● | | | | | | ● | ● | ● | ● | | | ● | ● | 14 |
| Private label share (local level) - 2004-2012 | @Nielsen Opus | | ● | | | | | | | ● | | | | | ● | | | | | | | ● | ● | | | | ● | | 6 |
| Private label share (local level) - 2008-2012 | @Nielsen Opus | | ● | | | ● | ● | | | ● | | | ● | | ● | | | | | | | ● | ● | | | | ● | | 9 |
| Product category turnover at national level - 2004-2012 | @Euromonitor | | ● | | | ● | ● | | ● | ● | ● | ● | ● | ● | ● | | | | | | ● | ● | ● | ● | | | ● | ● | 14 |
| Econometric analysis | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Impact of drivers on choice and innovation (2004-2012) | Consortium computation | | | | | | | | | ● | | | | | ● | | | | | | | ● | ● | | | | ● | | 5 |
| Impact of drivers on choice and innovation (2008-2012) | Consortium computation | | ● | | | | | | | ● | | | ● | | ● | | | | | | | ● | ● | | | | ● | | 7 |
| Coverage of case studies | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Case studies | Consortium analysis | | ● | | | | | | ● | ● | ● | | | | | | | | | | ● | | | | | ● | | | 6 |

4.1.1. Local consumer shopping area level

Local CSA level refers to analysis undertaken and measures at the level of a shop in defined CSAs. This analysis is intended to enable analysis of certain phenomena at the region level and uncover local differences in trends. The final list of MS for which choice, innovation and their drivers will be analysed at the local CSA level is presented in Table 3 below, which illustrates the variety of situations covered across these selected 9 MS in terms of modern retail share, evolution of retail concentration, market share per shop type, population size, economic prosperity and private label share.

Table 3: Variety of situations in 9 MS vs. EU 27

| Member State | Modern retail market share & Evolution of C(5) retail concentration (edible grocery):2000 vs 2011 | Type of shop market share of the food market in 2011 | Population size & economic prosperity in 2011 | Share of private label in 2009 |
|---|--|--|---|---|
| B (Belgium) | 83% food market C(5) 2000 : 51% C(5) 2011 : 76% | 11% HM 55% SM 17% HD | Population : 11 million GDP/capita : 33.7 k€/year | 27% |
| CZ (Czech Republic) | 55% food market C(5) 2000 : 27% C(5) 2011 : 48% | 29% HM 14% SM 12% HD | Population : 10.5 million GDP/capita : 14.7 k€/year | 24% |
| DK (Denmark) | 87% food market C(5) 2000 : 61% C(5) 2011 : 83% | 7% HM 49% SM 31% HD | Population : 5.6 million GDP/capita : 43.0 k€/year | 22% |
| FR (France) | 79% food market C(5) 2000 : 59% C(5) 2011 : 66% | 39% HM 31% SM 8% HD | Population : 65.1 million GDP/capita : 31.6 k€/year | 28% |
| H (Hungary) | 60% food market C(5) 2000 : 29% C(5) 2011 : 36% | 25% HM 23% SM 12% HD | Population: 10.0 million GDP/capita : 10.1 k€/year | 20% |
| IT (Italy) | 37% food market C(5) 2000 : 20% C(5) 2011 : 24% | 12% HM 20% SM 5% HD | Population: 60.7 million GDP/capita: 26.1 k€/year | 15% |
| PL (Poland) | 37% food market C(5) 2000 : 7% C(5) 2011 : 26% | 13% HM 9% SM 14% HD | Population: 38.5 million GDP/capita : 9.7 k€/year | 14% |
| PT (Portugal) | 70% food market C(5) 2000 : 42% C(5) 2011 : 60% | 19% HM 39% SM 11% HD | Population: 10.6 million GDP/capita : 16.1 k€/year | 25% |
| E (Spain) | 71% food market C(5) 2000 : 34% C(5) 2011 : 47% | 20% HM 41% SM 9% HD | Population: 46.2 million GDP/capita : 23.1 k€/year | 31% |
| TOTAL IN SCOPE – analysis at shop level | Modern retail share: Min: 37% (Italy, Poland) Max : 87% (Denmark) Top 5 concentration Min : 24 % (Italy) Max: 83% (Denmark) | Total outlets 6% HM 60% SM 35% HD Total outlets 51 810 (49% of EU27) | Population: 258.2 million (51% of EU27) GDP/capita : Min : 9 697€/year (Poland) Max : 43 024 €/year (Denmark) Med : 23 125 €/year | Share of private labels Min : 14% Max : 31% |
| TOTAL EU 27 | Modern retail share : Min: 5% Max : 90% Top 5 concentration Min : 21% Max: 87% | Total outlets 6 372 HM (6%) 58 858 SM (56%) 39 887 HD (38%) Total outlets 105 117 | Population : 500.5 million GDP/capita : Min:5 255 €/year (Bulgaria) Max : 83 311 €/year (Luxembourg) Med : 24 537 €/year | Share of private labels Min : 12% Max : 43% |

Sources: EY analysis based on © Planet Retail, Eurostat, and © Nielsen

The scope of this study covers MS representing a broad diversity across time and space in the modern retail EU food sector, satisfying the following criteria:

- Coverage of 51% of the EU 27 population (72% when including case studies)
- Diversity in population size (from 5.6 million to 65.1 million)
- Diversity in GDP per capita (from 9 697€/year to 43 024 €/year)
- Differentiation in the market share of modern retail (3 MS above 75%, 4 MS between 55% and 75% and 2 MS between 35% and 40%)
- Types and size of shops, size of MS, private label market share (14%-31%);
- Variety in concentration of top 5 retailers (24% to 83%)
- A variety of banners in local CSAs, represented in Table 5.

Table 4: Banner coverage in shop sample across MS

| Member State | Banners in the sample | Retail group | Shop type in sample ⁵³ |
|----------------|-----------------------|---|---|
| Belgium | Aldi | Aldi | Hard discounter |
| | Champion | Carrefour | Supermarket |
| | Colruyt | Colruyt | Supermarket |
| | Cora | Louis Delhaize | Hypermarket |
| | Lidl | Schwarz Group | Hard discounter |
| Czech Republic | Kaufland | Schwarz Group | Hypermarket |
| | Tesco | Tesco | Hypermarket |
| Denmark | Fotex | Dansk Supermarked | Supermarket |
| | Netto | Dansk Supermarked | Hard discounter |
| | Rema1000 | Reitan | Hard discounter |
| | SuperBrugsen | Coop Danmark (FDB) | Supermarket |
| France | Aldi | Aldi | Hard discounter |
| | Auchan | Auchan | Hypermarket |
| | Carrefour | Carrefour | Hypermarket |
| | Carrefour Market | Carrefour | Supermarket |
| | Casino | Casino | Hypermarket |
| | Cora | Louis Delhaize | Hypermarket |
| | Dia | Dia | Hard discounter |
| | Géant | Casino | Hypermarket |
| | Hyper U | Système U | Hypermarket |
| | ITM Hyper | ITM (Intermarché) | Hypermarket |
| | ITM Super | ITM (Intermarché) | Supermarkets (<2500m ²), hypermarkets >2500m ²) |
| | Leader Price | Casino | Hard discounter |
| | Leclerc | Leclerc | Hypermarket |
| | Lidl | Schwarz Group | Hard discounter |
| | Netto | ITM (Intermarché) | Hard discounter |
| Simply Market | Auchan | Supermarkets (<2500m ²), hypermarkets >2500m ²) | |
| Super U | Système U | Supermarkets (<2500m ²), hypermarkets >2500m ²) | |
| Hungary | Auchan | Auchan | Supermarket |
| | CBA | CBA | Supermarket |
| | Interspar | SPAR (Austria) | Supermarket |
| | Lidl | Schwarz Group | Hard discounter |
| | Penny | Rewe Group | Hard discounter |
| | Tesco | Tesco | Supermarket |
| Italy | Auchan | Auchan | Hypermarket |
| | Bennet | Bennet | Hypermarket |

⁵³ In the study the distinction between hypermarkets and supermarkets is based on the sales areas definitions - supermarkets from 400 m² to 2499 m², and hypermarkets 2500 m² and greater. Planet Retail categorisation has been used to distinguish discount stores from supermarkets, with the defining criteria being the assortment / SKUs stocked.

| Member State | Banners in the sample | Retail group | Shop type in sample ⁵³ |
|--------------|-----------------------|----------------------|--|
| | Carrefour | Carrefour | Hypermarket |
| | Carrefour Market | Carrefour | Supermarket |
| | Conad | Conad | Supermarket |
| | Coop | Coop Italia | Supermarket |
| | DOK | Carrefour | Supermarket |
| | Leclerc | Leclerc | Hypermarket |
| | EMI | Selex Commerciale | Supermarket |
| | Esselunga | Esselunga | Supermarkets (<2500m ²), hypermarkets >2500m ²) |
| | Eurospin | Eurospin | Hard discounter |
| | Famila | Selex Commerciale | Supermarkets (<2500m ²), hypermarkets >2500m ²) |
| | Galassia | Galassia | Hypermarket |
| | Il Gigante | Il Gigante | Hypermarket |
| | Iper | Finiper | Hypermarket |
| | Iperal | Agora' network SCARL | Hypermarket |
| | Ipercoop | Coop Italia | Hypermarket |
| | Ipersimply | Auchan | Hypermarket |
| | Iperspar | Despar servizi | Hypermarket |
| | Lidl | Schwarz Group | Hard discounter |
| | Maxisconto | | Supermarket |
| | Pam | PAM | Supermarket |
| | Panorama | PAM | Hypermarket |
| | Penny | Rewe Group | Hard discounter |
| Superspar | | Supermarket | |
| U2 | Finiper | Supermarket | |
| Poland | Biedronka | Jerónimo Martins | Hard discounter |
| | Carrefour | Carrefour | Hypermarket |
| | Carrefour Express | Carrefour | Supermarket |
| | Kaufland | Schwarz Group | Supermarkets (<2500m ²), hypermarkets >2500m ²) |
| | Leclerc | Leclerc | Hypermarket |
| | Lidl | Schwarz Group | Hard discounter |
| | Netto | Dansk Supermarked | Hard discounter |
| | Real | Metro Group | Hypermarket |
| | Simply Market | Auchan | Supermarket |
| Tesco | Tesco | Hypermarket | |
| Portugal | Continente | Sonae | Supermarkets (<2500m ²), hypermarkets >2500m ²) |
| | Continente Modelo | Sonae | Supermarket |
| | Jumbo | Auchan | Supermarkets (<2500m ²), hypermarkets >2500m ²) |
| | Leclerc | Leclerc | Supermarkets (<2500m ²), hypermarkets >2500m ²) |
| | Lidl | Schwarz Group | Hard discounter |
| | Mini Preco | Carrefour | Hard discounter |
| | Pingo Doce | Jerónimo Martins | Hypermarket |
| | Ahorramas | ahorramas | Supermarket |
| Spain | Alcampo | Auchan | Hypermarket |
| | Caprabo | Caprabo | Supermarket |
| | Carrefour | Carrefour | Supermarkets (<1500m ²), hypermarkets >1500m ²) |
| | Carrefour Planet | Carrefour | Hypermarket |
| | Dani | | Supermarket |
| | Dia | Carrefour | Hard discounter |
| | Eroski | Eroski | Supermarket |
| | Leclerc | Leclerc | Hypermarket |
| | Lidl | Schwarz Group | Hard discounter |
| | Maxi Dia | Carrefour | Hard discounter |
| Mercadona | Mercadona | Supermarket | |

Source: EY analysis based on ©Nielsen Opus and © Planet Retail

In addition, the largest retail players in the EU 27 are present in the selected MS, with the exception of EDEKA that operates only in Germany, as shown in Table 5.

Table 5: Coverage of largest retail groups in Europe

| Retailer | EU 27 market share (2011) | MS in sample where retailers operate (in 2011) |
|--------------------------|---------------------------|--|
| Schwarz Group | 4.7% | All 9 Member States |
| Carrefour | 4.5% | Belgium, France, Italy, Poland, Portugal, Spain |
| Tesco | 3.8% | Czech Republic, Hungary, Poland |
| Edeka | 3.4% | N/A |
| Aldi | 3.1% | Belgium, Denmark, France, Hungary, Poland, Portugal, Spain |
| Rewe Group | 3.0% | Czech Republic, Hungary, Italy |
| Auchan | 2.2% | France, Hungary, Italy, Poland, Portugal, Spain |
| ITM (Intermarché) | 2.1% | Belgium, France, Poland, Portugal |
| Leclerc | 2.1% | France, Italy, Portugal, Spain, Poland |
| Ahold | 1.9% | Belgium, Czech Republic |

Source : EY analysis based on © Planet Retail

4.1.2. Procurement (national) level

Procurement (national) level refers to analysis undertaken and measures at the level of a Member State. This analysis is intended to complement local level analysis by measuring certain financial indicators that are not possible at local level, and provide the macro view across MS.

In addition to the 9 MS which form the scope of the study in terms of the evolution of choice and innovation within a sample of shops in defined CSAs, an additional scope of MS has been addressed for a selection of a priori drivers at procurement (national) level.

In the context of analysis undertaken to observe trends in retail concentration, supplier concentration and measure of imbalance, the following additional scope has been analysed:

Table 6: Scope of selected measures at procurement (national) level

| Measure | Scope | Comments |
|---|-------|---|
| Retail concentration measured by grocery sales market share | 26 MS | All EU MS with the exception of Malta, for which insufficient data is available, and Croatia, which was not a member of the EU at the commencement of this study |
| Supplier concentration measured by grocery sales market share | 14 MS | 9 MS of scope at local level – Belgium, Czech Republic, Denmark, France, Hungary, Italy, Poland, Portugal, Spain; 3 additional MS in scope of case studies – Finland, Germany, Netherlands; and 2 additional MS that represent specific cases of interest – Romania, due to its very low modern retail share, and United Kingdom, due to the importance of convenience stores |
| Measure of imbalance measured by grocery sales market share | | |

4.2. Selection of time period

The study seeks to cover a significant timeframe and frequency across MS where modern retail is well established, and where the development of modern retail has

been more recent. In addition, time periods have been selected to cover both pre-crisis (2004-2008) and crisis (2008-2012) periods.

These principles led to a selection of 5 years of data, covering biennial periods (2004, 2006, 2008, 2010, and 2012). In terms of frequency, for each year selected, the study analyses data from November and June. November was selected as it captures significant end of year sales, and June to observe the significant summer sales.

Following data issues encountered during the study and in an effort to optimise the utility of data available at the local CSA level, a decision was made to establish two shop samples for analysis:

- 1) a shop sample covering the full period 2004-2012 to be able to observe longer term trends both before and during the crisis (10 periods of observation), and
- 2) a larger shop sample covering the period 2008-2012 in order to increase the sample size in countries and areas where longer term data is not available and to enable focused analysis on the crisis period (6 periods of observation).

The scope of the two shop samples is presented in the Table 7 below.

Table 7: Study samples by MS and time period coverage – descriptive statistics (source EY analysis)

| MS | Final scope of time periods | | | |
|----------------|-----------------------------------|-------------------------|-----------------------------------|-------------------------|
| | 2004-2012 | | 2008-2012 | |
| | No. of CSAs with at least 2 shops | Number of shops | No. of CSAs with at least 2 shops | Number of shops |
| Spain | 15 | 42 | 15 | 42 |
| France | 31 | 131 | 31 | 131 |
| Italy | 25 | 80 | 25 | 83 |
| Poland | 10 | 24 ⁵⁴ | 11 | 29 |
| Portugal | 8 | 19 | 8 | 19 |
| Hungary | N/A | N/A | 9 | 24 |
| Czech Republic | N/A | N/A | 1 | 2 ⁵⁵ |
| Belgium | 2 | 6 ⁵⁶ | 3 | 9 |
| Denmark | N/A | N/A | 2 | 4 ⁵⁷ |
| TOTAL | 91 | 302⁵⁸ | 105 | 343⁵⁹ |

⁵⁴ In the long data set, Poland was omitted from analysis that included local retail concentration as a driver because of the absence of the required © Nielsen Trade Dimensions data to calculate this measure.

⁵⁵ No econometric analysis possible for Czech Republic on short data set due to absence of the required © Nielsen Trade Dimensions data

⁵⁶ No econometric analysis possible for Belgium on long data set due to absence of the required © Nielsen Trade Dimensions data

⁵⁷ No econometric analysis possible for Denmark on short data set due to absence of the required © Nielsen Trade Dimensions data

⁵⁸ 296 shops in total for econometric analysis

⁵⁹ 337 shops in total for econometric analysis

References:

By combining the long full period timeframe and short timeframe, observations on choice and innovation can be made for a total of 343 shops situated in 105 CSAs. Of this sample, 302 shops corresponding to 91 CSAs can be observed over the long full period timeframe.

Due to data limitations, the full set of shops outlined above cannot be addressed in the econometric analysis, which requires data to be available for every driver in every time period. As a result, 296 shops in total (across 5 MS) are analysed over the short period and 337 shops (across 7 MS) over the long period for the econometric analysis.

4.3. Selection of 105 consumer shopping areas (CSAs)

The identification of a sample of modern retail shops is central to this study, as this is the most detailed level where the evolution of choice, innovation, and their a priori drivers is analysed.

In order to observe the evolution of choice and innovation, a sample of shops has been selected from areas that are most representative of the different local consumer markets in Europe. The approach rests on the fact that consumers have access to a variety of local shops in which they make food purchases on a regular basis.

In summary, the definition of the CSA approach involved:

- Identification inside each selected MS of a selection of consumer shopping areas that are representative of different consumer living environments in Europe across two criteria:
 - type of living areas categorised by [large city, medium city, small city and rural zone]; and
 - GDP per capita categorised by [low, medium-, medium+, high]).
- Regions (Eurostat NUTS 3) and cities/towns were categorised based on these two criteria, and the number of CSAs for each category were determined proportionally to the situation at EU level, to ensure that the selections in each MS closely represent the most prevalent situations in the EU.
- For each of the representative cities/towns (also by size and GDP per capita) within the regions, a central point for the CSA was determined: the city hall. The geographical perimeter of the CSA is defined by the travel time between the central point and outer limit of the area. The isochrone radius of shop accessibility differs based on the retail density which usually depends on the size of the city. Based on retail studies⁶⁰ and sensitivity analysis, we defined:
 - 15 minutes travel time for large cities;
 - 20 minutes travel time for medium and small cities, and;
 - 25 minutes for a rural zone.
- Finally, within each CSA a selection of a sample of shops was made, within which choice and innovation can be observed, based on data availability.

"More pros and cons of merger control (2012); Competition Commission (2000),

"Supermarkets – a report on the supply of groceries from multiple stores in the UK", §2.53;

Competition Commission (2008), "The supply of Groceries in the UK Market Investigation", §4.145

⁶⁰ Such as Sørgaard, L "Merger screening in markets with differentiated products", 2012

Table 8 presents the full list of regions where CSAs are located.

Table 8: List of regions where consumer shopping areas are located

| | Selected NUTS 3 regions | Urban / Rural type | Population (2011) | % unemployment (2011) | GDP per capita (2010) | Population Density | % of MS Population | Total % Pop. |
|---------------|----------------------------|--------------------|-------------------|-----------------------|-----------------------|--------------------|--------------------|--------------|
| Belgium | Arr. de Bruxelles-Capitale | PU | 1 148 100 | 16,9 | 54 700 | 7 131 | 10% | 15% |
| | Arr. Arlon | PR | 59 000 | 6,2 | 20 500 | 186 | 1% | |
| | Arr. Charleroi | PU | 429 100 | 11,7 | 21 400 | 773 | 4% | |
| Czech Rep | Jihomoravský kraj | IN | 1 165 000 | 7,2 | 18 300 | 166 | 11% | 11% |
| Denmark | Syddjylland | PR | 715 900 | 7,7 | 29 900 | 82 | 13% | 22% |
| | Københavns omegn | PU | 518 800 | 8,1 | 42 500 | 1 516 | 9% | |
| France | Haut-Rhin | IN | 753 400 | 7,6 | 21 800 | 214 | 1% | 33% |
| | Territoire de Belfort | IN | 143 600 | 8,3 | 26 200 | 236 | 0% | |
| | Hauts-de-Seine | PU | 1 585 400 | 8,6 | 75 700 | 9 028 | 3% | |
| | Seine-Saint-Denis | PU | 1 534 600 | 8,6 | 28 700 | 6 497 | 2% | |
| | Val-de-Marne | PU | 1 338 600 | 8,6 | 34 900 | 5 463 | 2% | |
| | Val-d'Oise | PU | 1 180 800 | 8,6 | 26 100 | 948 | 2% | |
| | Yvelines | PU | 1 420 300 | 8,6 | 31 800 | 622 | 2% | |
| | Corrèze | PR | 244 400 | 7,8 | 20 600 | 42 | 0% | |
| | Haut-Rhin | IN | 753 400 | 7,6 | 21 800 | 214 | 1% | |
| | Meurthe-et-Moselle | IN | 733 600 | 10,4 | 22 800 | 140 | 1% | |
| | Meuse | PR | 194 300 | 10,4 | 16 600 | 31 | 0% | |
| | Moselle | IN | 1 047 000 | 10,4 | 19 600 | 168 | 2% | |
| | Vosges | PR | 380 400 | 10,4 | 19 400 | 65 | 1% | |
| | Loire-Atlantique | PU | 1 297 900 | 8,8 | 26 200 | 190 | 2% | |
| | Maine-et-Loire | IN | 794 500 | 8,8 | 21 000 | 111 | 1% | |
| | Côtes-d'Armor | PR | 598 700 | 7,4 | 19 100 | 87 | 1% | |
| | Vendée | PR | 642 600 | 8,8 | 21 300 | 96 | 1% | |
| | Finistère | IN | 908 300 | 7,4 | 20 900 | 135 | 1% | |
| | Ille-et-Vilaine | IN | 999 900 | 7,4 | 25 200 | 148 | 2% | |
| | Loiret | IN | 658 800 | 8,7 | 25 300 | 97 | 1% | |
| Loir-et-Cher | PR | 331 500 | 8,7 | 20 800 | 52 | 1% | | |
| Haute-Saône | PR | 240 700 | 8,3 | 16 800 | 45 | 0% | | |
| Gironde | PR | 1 467 400 | 9,3 | 26 100 | 147 | 2% | | |
| Pas-de-Calais | IN | 1 464 500 | 12,8 | 18 300 | 220 | 2% | | |
| Hungary | Budapest | PU | 1 736 900 | 8,8 | 34 900 | 3 308 | 17% | 46% |
| | Pest | IN | 1 241 300 | 8,8 | 13 900 | 194 | 12% | |
| | Fejér | PR | 425 900 | 9,3 | 14 000 | 98 | 4% | |
| | Bács-Kiskun | PR | 523 600 | 10,6 | 10 300 | 62 | 5% | |
| | Borsod-Abaúj-Zemplén | IN | 681 500 | 16,7 | 9 900 | 94 | 7% | |
| Italy | Cosenza | PR | 734 800 | 12,7 | 15 800 | 111 | 1% | 29% |
| | Reggio nell'Emilia | IN | 532 200 | 5,3 | 29 800 | 232 | 1% | |
| | Brescia | IN | 1 260 700 | 5,8 | 32 300 | 264 | 2% | |

| | Selected NUTS 3 regions | Urban / Rural type | Population (2011) | % unemployment (2011) | GDP per capita (2010) | Population Density | % of MS Population | Total % Pop. |
|----------|-------------------------|--------------------|-------------------|-----------------------|-----------------------|--------------------|--------------------|--------------|
| | Como | PU | 597 000 | 5,8 | 32 300 | 464 | 1% | |
| | Cremona | IN | 364 400 | 5,8 | 32 300 | 206 | 1% | |
| | Mantova | PR | 416 400 | 5,8 | 32 300 | 178 | 1% | |
| | Milano | PU | 3 172 900 | 5,8 | 32 300 | 2 010 | 5% | |
| | Pavia | IN | 550 000 | 5,8 | 32 300 | 186 | 1% | |
| | Alessandria | PR | 440 800 | 7,6 | 26 600 | 124 | 1% | |
| | Cuneo | PR | 593 500 | 7,6 | 26 600 | 86 | 1% | |
| | Torino | PU | 2 304 600 | 7,6 | 26 600 | 337 | 4% | |
| | Foggia | PR | 639 900 | 13,1 | 16 300 | 92 | 1% | |
| | Lecce | IN | 815 400 | 13,1 | 16 300 | 296 | 1% | |
| | Bologna | IN | 995 400 | 5,3 | 29 800 | 269 | 2% | |
| | Modena | IN | 703 000 | 5,3 | 29 800 | 262 | 1% | |
| | Ferrara | PR | 359 800 | 5,3 | 29 800 | 137 | 1% | |
| | Parma | IN | 443 700 | 5,3 | 29 800 | 129 | 1% | |
| | Firenze | IN | 1 000 900 | 6,5 | 26 700 | 285 | 2% | |
| | Pisa | IN | 418 800 | 6,5 | 26 700 | 171 | 1% | |
| | Perugia | IN | 673 100 | 6,5 | 22 800 | 106 | 1% | |
| | Lecco | PU | 340 700 | 5,8 | 32 300 | 418 | 1% | |
| Poland | Wałbrzyski | IN | 684 000 | 10,6 | 11 500 | 164 | 2% | 16% |
| | Miasto Warszawa | PU | 1 704 300 | 7,9 | 46 100 | 3 297 | 4% | |
| | Radomski | IN | 625 500 | 7,9 | 11 400 | 109 | 2% | |
| | Rzeszowski | IN | 620 700 | 12,4 | 12 200 | 175 | 2% | |
| | Wrocławski | PU | 564 000 | 10,6 | 13 900 | 88 | 1% | |
| | Łódzki | PU | 383 800 | 9,3 | 12 700 | 174 | 1% | |
| | Lubelski | IN | 717 600 | 10,3 | 13 400 | 170 | 2% | |
| | Miasto Kraków | PU | 758 400 | 9,3 | 23 100 | 2 319 | 2% | |
| Portugal | Cávado | IN | 410 100 | 13,0 | 15 100 | 329 | 4% | 48% |
| | Grande Lisboa | PU | 2 043 800 | 14,1 | 32 700 | 1 485 | 19% | |
| | Grande Porto | PU | 1 287 100 | 13,0 | 19 900 | 1 580 | 12% | |
| | Médio Tejo | PR | 220 400 | 10,3 | 15 400 | 96 | 2% | |
| | Oeste | PR | 362 300 | 10,3 | 15 700 | 163 | 3% | |
| | Algarve | PR | 451 100 | 15,6 | 20 300 | 90 | 4% | |
| | Baixo Mondego | PR | 332 100 | 10,3 | 19 800 | 161 | 3% | |
| Spain | Almería | IN | 691 600 | 30,1 | 19 300 | 79 | 1% | 62% |
| | Madrid | PU | 6 378 500 | 16,3 | 31 600 | 801 | 14% | |
| | Castellón / Castelló | IN | 591 200 | 24,0 | 23 400 | 89 | 1% | |
| | Valencia / València | PU | 2 514 900 | 24,0 | 22 700 | 235 | 5% | |
| | A Coruña | IN | 1 124 500 | 17,3 | 23 700 | 143 | 2% | |
| | Granada | IN | 912 500 | 30,1 | 17 200 | 72 | 2% | |
| | Pontevedra | IN | 947 100 | 17,3 | 21 300 | 212 | 2% | |
| | Asturias | IN | 1 054 100 | 17,8 | 22 700 | 100 | 2% | |

| | Selected NUTS 3 regions | Urban / Rural type | Population (2011) | % unemployment (2011) | GDP per capita (2010) | Population Density | % of MS Population | Total % Pop. |
|--|-------------------------|--------------------|-------------------|-----------------------|-----------------------|--------------------|--------------------|--------------|
| | Granada | IN | 912 500 | 30,1 | 17 200 | 72 | 2% | |
| | Sevilla | PU | 1 882 300 | 30,1 | 19 600 | 136 | 4% | |
| | Barcelona | PU | 5 366 600 | 19,2 | 28 400 | 695 | 12% | |
| | Madrid | PU | 6 378 500 | 16,3 | 31 600 | 801 | 14% | |

Sources: EY analysis based on Eurostat, at NUTS 2 level for unemployment, and for GDP in Italy.

The final selection of CSAs was made in order to provide the best possible representativeness of EU 27 population characteristics in terms of population size, diversity of standard of living and type of living – illustrations of representativeness for each of these characteristics are provided below.

4.4. Representativeness of the sample that was selected

4.4.1. Population size

Firstly, the allocation of CSAs amongst MS in the study sample has sought to take into account the relative population size compared to the other MS in the scope. Table 9 below shows the proportion of population in each MS relative to the number of CSA that have been selected.

Table 9: Number of CSA in relation to population size

| MS | Population size (million in 2011) | Proportion of total 9 MS population | Number of CSA (2008-2012 period) | Proportion of CSA |
|----------------|-----------------------------------|-------------------------------------|----------------------------------|-------------------|
| Belgium | 11,0 | 4% | 3 | 3% |
| Czech Republic | 10,5 | 4% | 1 | 1% |
| Denmark | 5,6 | 2% | 2 | 2% |
| France | 65,2 | 25% | 31 | 30% |
| Hungary | 10,0 | 4% | 9 | 9% |
| Italy | 60,7 | 24% | 25 | 24% |
| Poland | 38,5 | 15% | 11 | 10% |
| Portugal | 10,6 | 4% | 8 | 8% |
| Spain | 46,2 | 18% | 15 | 14% |
| Total | 258,2 | 100% | 105 | 100% |

Source: EY analysis based on © Planet Retail

There are some slight discrepancies for some MS, i.e. Poland and Portugal, due to shop data limitations and to ensure better representativeness of the different types of living and GDP per capita. However, on the whole the number of CSA per MS closely reflects the relative population of each MS.

4.4.2. Type of living zone and standard of living

Taking into consideration the prevalence of the different types of living zones and standard of living in each of the MS, the following table demonstrates the number of CSAs that have been selected under each category. Type of living is denoted by (PR = Predominantly Rural; INT = Intermediate; PU = Predominantly Urban) and GDP per capita by (low, medium-, medium+, high). A total of 105 CSA have been selected and allocated as shown in Table 10.

Table 10: Number of CSA per type of living zone and standard of living category

| GDP/Capita | Low | Medium - | Medium + | High | Total |
|--------------------------|---------------|---------------|---------------|---------------|---------------|
| Type of living | Number of CSA | Number of CSA | Number of CSA | Number of CSA | Number of CSA |
| Predominantly Rural (PR) | 8 | 8 | 3 | 4 | 23 |
| Intermediate (INT) | 13 | 9 | 13 | 7 | 42 |
| Predominantly Urban (PU) | 5 | 8 | 15 | 12 | 40 |
| TOTAL | 26 | 25 | 31 | 23 | 105 |

Source: EY analysis

This selection above provides a solid coverage of the EU27 diversity in type of living and standard of living. The extent of representativeness is illustrated in Table 11, which compares the proportion of the EU27 population that corresponds to each of the previously mentioned categories of type of living and standard of living with the proportion of CSAs that correspond to the same categories.

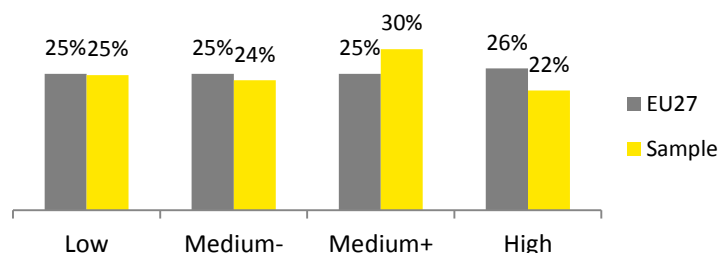
Table 11: Comparison of proportion of CSA vs proportion of EU27 population

| GDP/Capita | Low | | Medium - | | Medium + | | High | | Total | |
|--------------------------|------------|------------|------------|------------|------------|------------|------------|------------|-------------|-------------|
| Type of living | EU27 | CSA | EU27 | CSA | EU27 | CSA | EU27 | CSA | EU27 | CSA |
| Predominantly Rural (PR) | 11% | 8% | 6% | 8% | 4% | 3% | 2% | 4% | 23% | 22% |
| Intermediate (INT) | 10% | 12% | 10% | 9% | 9% | 12% | 7% | 7% | 35% | 40% |
| Predominantly Urban (PU) | 4% | 5% | 9% | 8% | 12% | 14% | 17% | 11% | 42% | 38% |
| TOTAL | 25% | 29% | 25% | 24% | 25% | 30% | 26% | 22% | 100% | 100% |

Sources: EY analysis based on Eurostat

In terms of GDP per capita representativeness, as the EU27 population has been broken down by quartiles, each quartile refers to 25% of the population. In our CSA selection, low GDP per capita accounts for exactly 25% of our selection; medium – GDP per capita accounts for 26%; medium + GDP per capita accounts for 30%; and high GDP per capita represents 22% of CSA (see Figure 15). In conclusion, the selection of CSAs closely resembles the EU 27 average in terms of real GDP per capita.

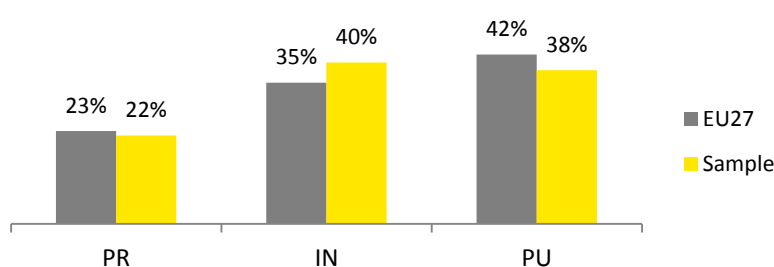
Figure 15: Representativeness of sample vs EU27 population by standard of living categories



Sources: EY analysis based on Eurostat

In terms of type of living, observations at the total EU27 population level are well aligned to the selection of CSA. For Predominantly Rural areas, there is only 1% discrepancy, for Intermediate zones 5%, and for Predominantly Urban, only 4% difference (see Figure 16).

Figure 16: Representativeness of sample vs EU27 population by type of living zone



Sources: EY analysis based on Eurostat

In conclusion, the selected sample of 105 CSA closely resembles the situation across EU 27 in terms of population size, real GDP per capita level, and type of living zones (urban vs rural). The choice of geographic zones based on the above criteria ensures that the study addresses a variety of situations faced by consumers in the EU.

4.5. Selection of product categories

The study on choice and innovation in local CSAs covers 23 product categories with EAN barcodes. Only packaged and processed products with fixed weights are included in the quantitative analysis, since non-packaged unprocessed products without a fixed weight are not monitored regularly by panel databases. The selected 23 product categories represent a range of turnover characteristics, including key HICP products.

Table 12: Selection of 23 product categories

| Family | Product category | HICP | Description |
|-----------------|-------------------|------|--|
| Savoury Grocery | Edible oil | ✓ | Olive oil, aromatic oil, other oil |
| | Savoury snacks | | Salted biscuits, natural/salted seeds, popcorn, stackers, mixed bags, crisps |
| | Canned vegetables | | Peas, green beans, spinach, bean sprouts, mushrooms, lentils, beans, corn, asparagus, mixed vegetables, canned vegetable salad |
| | Baby food | | Powder milk, ready cooked meals for babies, mashed potatoes, soups, baby drinks, baby flour, dry food |

| Family | Product category | HICP | Description |
|-----------------|------------------------|------|--|
| Sweet Grocery | Chocolate | ✓ | White chocolate, black/milk filled chocolate bars, natural black /milk chocolate bars, chocolate candies |
| | Coffee | ✓ | Instant coffee, soluble/liquid coffee, chicory, arabica coffee, robusta/mixed coffee, decaffeinated coffee |
| | Tea | ✓ | Bags/loose/soluble tea, infusions |
| | Cereals | ✓ | Ready cereals, cereals to cook, muesli |
| | Biscuits | | Cereal bars, wafers, afternoon snacks, sweet/dry biscuits, pastry cook biscuits, chocolate biscuits, mixed biscuits, cookies |
| Beverage | Mineral water | ✓ | Carbonated water, plain water, aromatic water |
| | Fruit juice | ✓ | Fruit juices, vegetable/mixed drinks |
| | Soft drinks | | Carbonated fruit drinks, carbonated soft drinks, liquid tea/coffee, tonic/ginger, cola, energy drinks |
| Savoury Frozen | Ready-cooked meals | | Frozen cooked meals |
| | Starters/Pizzas | | Salty pastry (pizza, quiche), other frozen starters, aperitifs, quick catering, stock and soup, sauces, dressings, spices |
| | Frozen Vegetables | | Single vegetables, potatoes, mixed vegetables, cooked vegetables, mushrooms, mashed potato |
| Sweet Frozen | Ice-cream | | Ice cream |
| Fresh Dairy | Yoghurt | | Pasteurised yoghurt, yoghurt |
| | Desserts | | Fresh desserts, fresh/white cheese, ready to eat desserts |
| | Cheese | ✓ | Cheese, salty cheese/feta, mozzarella, hard cold cheese (Gouda, Edam), old soft cheese, young soft cheese, parsley cheese, goat cheese, grated cheese, fondue cheese, hard cooked cheese |
| | Milk | ✓ | Pasteurised/natural milk, natural fresh milk, fermented milk, aromatic milk |
| Fresh Non Dairy | Butter/Margarine | | Butter, fat to fry, low fat/spread butter, margarine |
| | Fresh pre-packed bread | ✓ | Fresh pre-packed bread |
| | Ham/Delicatessen | | Dry sausage, chorizo, other cooked meat, ham, sausage, paté, potted minced pork, gallantine, salted meats (bacon), foie gras, cooked chicken meat, high prepared chicken |

Due to data limitations, two product categories were removed from the initial list of 25: Fresh Prepacked Salad, as it could not be isolated from its product family in the data source, and Eggs, because issues were faced by the data provider in obtaining consistent and complete data across the selection of MS in the scope of the study.

4.6. Method for data extrapolation (supermarkets and discounters)

In order to increase the number of shops per CSA, number of CSAs and the representativeness of shop types for analysis of choice, a method of extrapolating discount store audit data from shops of the same banner, of similar size and in comparable regions, was developed.

Where a discount store was present in the CSA according to © Nielsen Trade Dimensions, but was not audited in © Nielsen Opus, the product assortment for a

proxy shop has been identified based on © Nielsen Opus data for other shops of the same banner and size. This extrapolation technique works only where discounters have a very similar assortment nationally in shops of similar size. The process for including HD proxies is outlined per MS in Table 14.

Table 13: Extrapolation of discounters

| MS | Banner | Process 2004-2012 | Process 2008-2012 |
|------------------------------|--------------|------------------------------|------------------------------|
| Belgium | Lidl | Used 1 time (in 1 CSA) | Used 2 times (once in 2 CSA) |
| | Aldi | Used 1 time (in 1 CSA) | Same as 2004-2012 |
| Czech Rep. | N/A | N/A | N/A |
| Denmark | Netto | N/A | Used 1 time (in 1 CSA) |
| | REMA 1000 | N/A | Used 1 time (in 1 CSA) |
| France | Leader Price | Used 1 time (in 1 CSA) | Same as 2004-2012 |
| | Lidl | Used 1 time (in 1 CSA) | Same as 2004-2012 |
| | Dia | Used 1 time (in 1 CSA) | Same as 2004-2012 |
| | Aldi | Used 1 time (in 1 CSA) | Same as 2004-2012 |
| | Netto | Used 1 time (in 1 CSA) | Same as 2004-2012 |
| Hungary | Penny | N/A | Used 2 times (once 2 CSA) |
| | Lidl | N/A | Used 3 times (once in 3 CSA) |
| Italy | Penny | N/A | Used 1 time (in 1 CSA) |
| | Eurospin | N/A | Used 1 time (in 1 CSA) |
| | Lidl | N/A | Used 1 time (in 1 CSA) |
| Poland | Lidl | Used 1 time (in 1 CSA) | Used 2 times (once in 2 CSA) |
| | Biedronka | Used 1 time (in 1 CSA) | N/A |
| | Netto | Used 1 time (in 1 CSA) | N/A |
| Portugal | Lidl | Used 3 times (once in 3 CSA) | Same as 2004-2012 |
| | Mini-Preco | Used 3 times (once in 3 CSA) | Same as 2004-2012 |
| Spain | Dia | Used 1 time (in 1 CSA) | Same as 2004-2012 |
| | Maxi-Dia | Used 1 time (in 1 CSA) | Same as 2004-2012 |
| | Lidl | Used 1 time (in 1 CSA) | Same as 2004-2012 |
| TOTAL HD proxies used | | 19 | 28 |

Source: EY analysis

Furthermore, the Consortium investigated whether extrapolation could be appropriate for supermarkets in addition to discounters. Our analysis found that extrapolation was only appropriate for two supermarket banners in the sample – Colruyt in Belgium, and Mercadona in Spain. Based on the © Nielsen Opus data available for these two banners, a process of extrapolation was determined, illustrated in Table 14 below.

Table 14: Extrapolation of supermarkets

| MS | Banner | Process for 2004-2012 | Process for 2008-2012 |
|------------------------------|-----------|------------------------------|----------------------------|
| Belgium | Colruyt | Used 2 times (once in 2 CSA) | Used 3 times (once 3 CSAs) |
| Spain | Mercadona | Used 3 times (once in 3 CSA) | Same as 2004-2012 |
| TOTAL SM proxies used | | 5 | 6 |

Source: EY analysis

4.7. Measures defined for the study

4.7.1. Choice

Food choice has been a subject of wide research and has been studied from various perspectives. A number of different interpretations of the expression 'food choice' exist. In global terms, 'food choice' is mainly described as *'the selection of foods for consumption (i.e. by consumers), which results from the competing, reinforcing and interacting influences of a variety of factors. These range from the sensory, physiological and psychological responses of individual consumers to the interactions between social, environmental and economic influences, and include the variety of foods and the activities of the food industry to promote them'*. In the context of this study 'food choice' refers to the product assortment at retail level (i.e. what is available on the shelves). In other terms, food choice at retail is defined as (all other things equal) the variety of products that are made available to the consumer in a particular product category.

Several components of "food choice" (or the variety of products) have been measured through this study. These include:

- choice amongst different shops within a given consumer's shopping area
- choice amongst alternative products available within a product category (represented by the total number of different EAN codes);
- choice in the variety of prices of products within a product category;
- choice in the variety of packaging sizes within a product category;
- choice amongst alternative suppliers available on shelves.

Each of these five components of choice has been analysed at the CSA level through the following indicators and measures.

Shop variety

Shop variety refers to the number of shops per shop type a consumer has access to in its CSA.

Using © Nielsen Trade Dimensions data, for each CSA, and once per year (for 2004, 2006, 2008, 2010, 2012), we have counted the number of shops (per shop type) situated within the defined boundaries of the CSA.

Whilst in reality a consumer may only make grocery purchases in 1 to 5 shops, this measure rather reflects the full choice of shops available to a consumer based on the maximum time/distance he or she would be willing to travel. As an illustration, some CSA contain greater than 400 shops – whilst these are all within proximity of the consumer, they will tend to only shop in 1 to 5 of the closest shops.

It is important to highlight some data limitations for these calculations. Measures of shop variety are possible over the full time period from 2004-2012 for France, Spain, Italy and Portugal (4 in total), and over 2008-2012 for these MS plus Hungary and Belgium (6 in total). For Czech Republic, no data on the evolution of shop variety is possible as only figures for 2012 are available, and for Poland, only 2010 and 2012 are available. No such calculations are possible for Denmark, as © Nielsen Trade Dimensions data does not exist for this country. As a consequence, figures for these MS are not included in aggregated results.

Product variety

Product variety refers to the total number of different products (measure by unique EAN codes in the © Nielsen Opus data) offered on the shelves of each shop in the study sample.

For each shop, we have counted the unique EANs per product category in the summer period (2004, 2006, 2008, 2010, 2012) and in the winter period (2004, 2006, 2008, 2010, 2012). An average figure for each year has been calculated by adding the winter and summer total and dividing by two. When figures are presented per CSA, the total number of unique EANs is recalculated so that the same EAN appearing in two or more different shops within the same CSA is counted only once.

Product price variety

Product price variety refers to the range of prices offered to consumers within each product category in a given shop, measured using © Nielsen Opus data.

For each shop, we have calculated the standard deviation of prices in a given product category divided by the mean of prices for that product category, for summer (2004, 2006, 2008, 2010, 2012) and for winter (2004, 2006, 2008, 2010, 2012). An average figure for each year has been calculated by adding the winter and summer total and dividing by two. When figures are presented per CSA, the variety of prices is recalculated so that the same price appearing in two or more different shops within the same CSA is counted only once.

It is important to note that we have found some © Nielsen Opus product price data to be inconsistent in terms of units and currency across shops and time periods. Where possible incorrect data has been removed from calculations, however given the volume of data, the removal of all inconsistent prices cannot be ensured.

Product size variety

Product size variety refers to the range of different product sizes offered to consumers within each product category in a given shop, measured using © Nielsen Opus data.

For each shop, we have counted the number of different product sizes observed per product category, for summer (2004, 2006, 2008, 2010, 2012) and for winter (2004, 2006, 2008, 2010, 2012). An average figure for each year has been calculated by adding the winter and summer total and dividing by two. When figures are presented per CSA, the total number of product sizes is recalculated so that the same pack size appearing in two or more different shops within the same CSA is counted only once.

Product supplier variety

Product supplier variety refers to the number of different suppliers of EANs in the assortment offered to consumers within each product category in a given shop, measured using © Nielsen Opus data.

For each shop, we have counted the number of different suppliers observed per product category, for summer (2004, 2006, 2008, 2010, 2012) and for winter (2004, 2006, 2008, 2010, 2012). An average figure for each year has been calculated by adding the winter and summer total and dividing by two. When figures are presented per CSA, the total number of suppliers is recalculated so that the same brand supplier appearing in two or more different shops within the same CSA is counted only once.

© Nielsen Opus data does not distinguish between Private Label suppliers, and therefore "Private Label" products count as one supplier in each retail banner.

4.7.2. Innovation

The concept of innovation in food products is complex and multi-dimensional and it has been the subject of a large amount of theoretical and empirical literature. There are different scopes and typologies of innovation. It can also be considered as a controversial concept as there are discussions between stakeholders on "real" and "false" innovations.

Regarding the scope, this study is exclusively concerned with product innovation and does not take into account manufacturing process innovation, neither supply chain nor logistics innovation.

To measure product innovation, the method adopted addresses both the number of innovations (defined as new EAN codes in the data set) and the type of innovation. Two separate sources are used to measure these two indicators, and therefore absolute numbers of innovations for each of the sources cannot be reconciled.

Where an EAN code appears in a shop that was not present two years earlier this represents, in principle, an innovation. The source for the number of innovations is © Nielsen Opus. In terms of the type of innovation, we have applied the methodology of © Mintel Global New Products Database, which is among the most comprehensive consumer product database worldwide, including specific categories for food and drink. It categorises new products into the following groups:

- New product
- New variety/range extension
- New packaging
- New formulation
- Relaunch

The different measures of innovation are presented below:

Number of innovations

The number of innovations refers to the total number of EAN codes present in the assortment of a given period for a given shop that were not present in the same sample 24 months previously, measured using © Nielsen Opus data. In this case, the new EAN is counted as an innovation for the period when it appeared in the assortment.

For each shop, we have counted the number of new EAN codes observed in each period for summer (2004, 2006, 2008, 2010, 2012) and for winter (2004, 2006, 2008, 2010, 2012). An average figure for each year has been calculated by adding the winter and summer total and dividing by two. When figures are presented per CSA, the number of innovations is recalculated so that the same innovation appearing in two or more different shops within the same CSA is counted only once.

The number of new EAN codes is an indicator of innovation, but does not seek to assess the quality or extent of innovation in the product in question. The reason why

© Nielsen Opus data has been used for the total number of innovations as opposed to © Mintel GNPD is because the latter source has broadened its coverage of innovation over recent years across product categories, which would result in bias through overestimating the number of innovative products. As a consequence, © Mintel GNPD is only used to identify the different types of innovation present in sample shops, by matching the EAN codes between the two databases sources.

Categories of innovation

The five categories of new products as defined by © Mintel GNPD⁶¹, and used for this study, are as follows. Each product can be classified as one type of innovation only.

- **New product:** assigned when a new range, line, or family of products is encountered. This launch type is also used if a brand that already exists on GNPD, in one country, crosses over to a new sub-category.

⁶¹ An illustration of the different categories of innovation according to GNPD is provided in Annex A.

- **New variety/range extension:** used to document an extension to an existing range of products on the GNPD
- **New packaging:** determined by visually inspecting the product for changes, and also when terms like New Look, New Packaging, or New Size are written on pack.
- **New formulation:** determined by visually looking for key terms on pack like New Formula, Even Better, Tastier, Now Lower in Fat, New and Improved, Great New Taste, Now With..., or Better We cannot assume that a product is newly reformulated unless it is clearly stated on pack or we know from secondary sources that this is the case.
- **Relaunch:** a product should have the launch type relaunch when: there is some wording to the effect that the product has been relaunched on the packaging or the product does not exist on the database but there is secondary source information (such as from a press release, magazine, trade show, website or a shop display) that the product has been relaunched. Key phrases to look out for include "previously or formerly known as..." and "new name". If a product meets the criteria for the new packaging launch type and for the new formulation launch type, then the relaunch launch type should be selected.

New EAN codes in the © Nielsen Opus data have been matched with EAN codes in the GNPD database, in order to determine the different types of innovation present in the sample. Due to different coverage levels of GNPD and across time and countries, only the categorisation of innovation has been provided through GNPD, whilst the number of innovations has been determined through shop assortment data. The absolute number of innovations according to each different source cannot be reconciled, since there are more innovations identified through © Nielsen Opus data than through Mintel GNPD.

Therefore the descriptive statistics provide the proportion of each type of innovation, overall and by product category, in relation to the total count of innovations identified through the matching method described above.

4.7.3. Retail concentration

Retail concentration refers to the market share of modern retail groups in their respective markets. For this study, a number of indicators of retail concentration have been measured, both at procurement (national) level and at the local level.

It is important to clarify how retail concentration is measured at the procurement (national) level. Measuring retail concentration at the buying group level would enable the impact of buying alliances on choice and innovation to be determined. However, in reality, procurement organisations and buying alliances are a complex phenomenon. Procurement organisations exist at pan-European, national and regional level and their scope of purchasing depend on the given shop, product category and whether it concerns a branded product or private label. The key source on procurement organisations is © Planet Retail. A thorough analysis of this database has revealed the complexity of procurement organisations in Europe, as we have found references to several procurement organisations for a given banner and retail group. Furthermore, information is not available on the split and scope and volume of products and brands purchased by each (proportion purchased centrally vs locally, for example), as these arrangements tend to be confidential and informal.

Considering information is incomplete and complex, the Consortium proposed to express retail concentration at procurement level in terms of the retailer group and banner market shares at national level only. Thus retail concentration will not be measured at procurement organisation level.

At procurement (national) level

There are several dimensions of analysis at the procurement (national) level. Firstly the same two measures have been adopted:

- C(5) ratio: sum of market shares of top 5 retailers (banners and retail groups)
- Herfindahl–Hirschman Index (HHI): sum of the squares of the market shares of all market players (banners and retail groups), expressed as a value between 0 and 10,000

At the procurement (national) level, “market share” has been measured using data from © Planet Retail, both in terms of:

- Edible grocery market sales share: referring to company sales of food, drink & tobacco as a percentage of consumer spend on food, drink & tobacco.
- Modern retail edible grocery market sales share: referring to edible grocery sales share (see above) but for modern retail groups only.

Therefore, 8 different indicators of retail concentration at the procurement (national) level have been measured for this study.

- C(5) ratio for banners measured in terms of edible grocery market sales share
- C(5) ratio for retail groups measured in terms of edible grocery market sales share
- C(5) ratio for banners measured in terms of modern retail edible grocery market sales share
- C(5) ratio for retail groups measured in terms of modern retail edible grocery market sales share
- HHI for banners measured in terms of edible grocery market sales share
- HHI for retail groups measured in terms of edible grocery market sales share
- HHI ratio for banners measured in terms of modern retail edible grocery market sales share
- HHI for retail groups measured in terms of modern retail edible grocery market sales share

For the purposes of presenting the descriptive statistics in the following chapter, at procurement (national) level, retail concentration is measured by HHI for retail groups in terms of food modern retail market sales share. Comparisons with other retail concentration indicators are made if the differences in results provide relevant information.

At local consuming shopping area level

There are several dimensions of analysis at this local level. Firstly two different measures have been adopted:

- C(5) ratio: sum of market shares of top 5 retailers
- Herfindahl–Hirschman Index (HHI): sum of the squares of the market shares of all market players, expressed as a value between 0 and 10,000

At the local level, retailers market share are not available. Therefore, "market share" has been measured both in terms of:

- The share of sales area of each retailer in a given shop's catchment area (CA) (at banner and retail group level)⁶²
- The share of total number of shops of each retailer in a given shop's CA (at banner and retail group level)

A retail concentration statistic has been generated for each shop based on the creation of "catchment areas" (reflecting retailer competition for the shops within the sample, using © Nielsen Trade Dimensions, which provides a full listing of modern retail stores and their key characteristics.). Therefore, a CA has been defined for each and every shop within our data sample that falls within the geographical perimeter of the previously defined CSAs.

The outer limits of each CA (presented in Table 15 below) have been determined through:

- Review of practice in competition cases over the last decade⁶³
- Analysis of a wide range of time scenarios, to ensure an adequate number of competitors per shop, and a reasonable differentiation between Predominantly Urban (PU), Intermediate (INT) and Predominantly Rural (PR).

Table 15: Maximum travel times for defining a given shop's catchment area

| Shop type | Predominantly Urban (PU) | Intermediate (INT) | Predominantly Rural (PR) |
|-------------|--------------------------|--------------------|--------------------------|
| Hypermarket | 10 min | 15 min | 20 min |
| Supermarket | 5 min | 7.5 min | 10 min |
| Discounter | 5 min | 7.5 min | 10 min |

Source: EY analysis

Whilst there are some exceptions, there are generally more competitor shops in PU areas, than in INT and PR areas, which is logical. A conversion rule has been developed in order to translate travel time to distance⁶⁴.

Therefore, 8 different indicators of retail concentration at the local level have been measured for this study.

- **C(5) of retail banners by share of sales area:** a value for each shop (and each year) is calculated by summing the combined sales area of the five

⁶² The merits of this measure have been highlighted in ECB (2011), "Structural features of distributive trades and their impact on prices in the euro area".

⁶³ See Bundeskartellamt, Case "B2-33/07 Tengelmann/EDEKA"; DG COMP merger cases "COMP/M.5677 – Schuitema/ Super de Boer", "COMP/M.5790 – Lidl/Plus Romania/Plus Bulgaria", "COMP/M.6847 – Triton/Suomen Lähipkaupaa", "COMP/M.5134 – Spar/Plus Hungary", "COMP/M.1684 – Carrefour/Promodes", "COMP/M.991 – Promodes/Casino"

⁶⁴ For each shop in sample in a given CSA, the distance and drive time between a combination of at least 10 shops has been calculated (testing the equation, Distance = a x Drive time), in order to identify an appropriate conversion rate between time and distance for each CSA. As a result, the translation of time to distance is different for each of the 105 CSAs. For each CSA, an R-squared value indicates the goodness of fit in the data. On the whole, the results of the analysis have been positive. The minimum R squared value is 83%, whilst 99% has been achieved for a number of CSA, indicating a very strong (near perfect) fit between drive time and distance.

banners that have the largest share of sales area in the given shop's CA, and dividing by the total combined sales area of all shops in the CA.

- **C(5) of retail banners by share of total number of shops:** a value for each shop (and each year) is calculated by adding the number of shops for the five banners that have the largest share of shops in the given shop's CA, and dividing by the total number of shops in the CA.
- **C(5) of retail groups by share of sales area:** a value for each shop (and each year) is calculated by summing the combined sales area of the five retail groups that have the largest share of sales area in the given shop's CA, and dividing by the total combined sales area of all shops in the CA.
- **C(5) of retail groups by share of total number of shops:** a value for each shop (and each year) is calculated by adding the number of shops for the five banners that have the largest share of shops in the given shop's CA, and dividing by the total number of shops in the CA.
- **HHI of retail banners by share of sales area:** a value for each shop (and each year) is calculated by summing the squares of the combined sales area of each banner in the given shop's CA.
- **HHI of retail banners by share of total number of shops:** a value for each shop (and each year) is calculated by summing the squares of the total number of shops for each banner in the given shop's CA.
- **HHI of retail groups by share of sales area:** a value for each shop (and each year) is calculated by summing the squares of the combined sales area of each retail group in the given shop's CA.
- **HHI of retail groups by share of total number of shops:** a value for each shop (and each year) is calculated by summing the squares of the total number of shops for each retail group in the given shop's CA.

For the purposes of presenting the descriptive statistics in the following chapter, at local level, retail concentration is measured by HHI of retail groups by share of sales area. Comparisons with other retail concentration indicators are made if the differences in results provide relevant information.

4.7.4. Supplier concentration

Supplier concentration refers to the market share of modern retail suppliers (or brand owners) in their respective markets. For this study, a range of indicators of supplier concentration have been measured, both at the procurement (national) level and at local level. The procurement (national) level measure provides an indication of the concentration of market shares of suppliers in a Member State as a whole; while the measure at local level reflects rather the concentration of suppliers in the assortment on shop shelves, which is impacted by shop decisions to stock certain products and not others. In order to distinguish these two concepts, in the descriptive statistics, the local level measure will be referred to as "assortment concentration".

At procurement (national) level

There are several dimensions of analysis at the procurement (national) level. Firstly the same two measures have been adopted:

- C(5) ratio: sum of market shares of top 5 suppliers

- Herfindahl–Hirschman Index (HHI): sum of the squares of the market shares of all suppliers, expressed as a value between 0 and 10,000

At the procurement (national) level, “market share” has been measured using data from © Euromonitor International, both in terms of:

- Full market: grocery market sales for identified suppliers (global brand owners) based on Retail/Off-trade market (measured by year-on-year exchange rate at current prices). This calculation looks at the market shares of all identified manufacturer brand suppliers, compared to the whole market, covering brand suppliers, artisanal suppliers, other smaller local suppliers and private label suppliers.
- Brand only: grocery market sales for identified suppliers (global brand owners) based on Retail/Off-trade market (measured by year-on-year exchange rate at current prices). This calculation looks at the market shares of all identified manufacturer brand suppliers, compared to the full branded market, covering brand suppliers, artisanal suppliers and other smaller local suppliers, but excluding private label suppliers.

Note: the category “bread” in © Euromonitor International database covers a wider range of products than the category “fresh prepackaged bread” as defined by © Nielsen Opus used in the study.

Therefore, 4 different indicators of supplier concentration at the procurement (national) level have been measured for this study.

- C(5) ratio for full market: measured by the addition of grocery market shares of the top 5 identified suppliers, calculated on full market grocery share (including private label, other & artisanal suppliers) each year and for each of the 23 product categories.
- C(5) ratio for brand only market: measured by the addition of grocery market shares of the top 5 identified suppliers, calculated on brand only market grocery share (including other & artisanal suppliers but excluding private labels) each year and for each of the 23 product categories.
- HHI for full market: measured by the sum of the squares of grocery market shares of all identified suppliers, calculated on full market grocery share (including private label, other & artisanal suppliers) each year and for each of the 23 product categories.
- HHI for brand only market: measured by the sum of the squares of grocery market shares of all identified suppliers, calculated on brand only market grocery share (including other & artisanal suppliers but excluding private labels) each year and for each of the 23 product categories.

For the purposes of presenting the descriptive statistics in the following chapter, at procurement (national) level, supplier concentration is measured by HHI for brand only market, since negotiations at procurement level occur differently for brand versus private label suppliers. Comparisons with other supplier concentration indicators are made if the differences in results provide relevant information.

At local consumer shopping area level

There are several dimensions of analysis at this local level. Firstly two different measures have been adopted:

- C(5) ratio: sum of market shares of top 5 suppliers
- Herfindahl–Hirschman Index (HHI): sum of the squares of the market shares of all suppliers, expressed as a value between 0 and 10,000

At the local level, “market share” has been measured by “assortment share”, i.e. the proportion of EAN codes in the assortments at shop level for each supplier.

Therefore, 2 different indicators of assortment concentration at the local level have been measured for this study.

- C(5) ratio measured in terms of the combined share of EAN codes in the assortments at shop level for the top 5 suppliers each year (2004, 2006, 2008, 2010, 2012).
- HHI measured in terms of the sum of the squares of the share of EAN codes in the assortments at shop level for all suppliers each year (2004, 2006, 2008, 2010, 2012).

For the purposes of presenting the descriptive statistics in the following chapter, at local CSA level, supplier concentration is measured by HHI in terms of the squares of the share of EAN codes in the assortments at shop level for all suppliers.

As a reminder, © Nielsen Opus data does not distinguish between Private Label suppliers, and therefore “Private Label” products count as one supplier in each banner.

4.7.5. Measure of imbalance

The measure of imbalance refers to the ratio of retail concentration divided by supplier concentration, to obtain a measure of balance between retailers and suppliers. For this study, a selected range of indicators have been measured. Local level and procurement level indicators have been measured for comparison purposes, however it should be noted that it is at procurement level where the relationship between suppliers and retailers is most appropriately measured.

At procurement (national) level

The measure used is the Herfindahl–Hirschman Index (HHI): sum of the squares of the market shares of all retailers or suppliers, expressed as a value between 0 and 10,000.

The numerator in the calculation is retail concentration, measured by:

- HHI for retail groups measured in terms of modern retail edible grocery market sales share: sum of squares of modern retail grocery market shares for all retail groups each year (2004, 2006, 2008, 2010, 2012).

The denominator in the calculation is supplier concentration, measured by:

- HHI for brand only market⁶⁵ : measured by the sum of the squares of grocery market shares of all identified suppliers, calculated on full market grocery share

⁶⁵ In the econometric analysis, both this measure and one that uses the ‘full-market’ HHI for supplier concentration were examined.

(excluding private label, but including other & artisanal suppliers) each year (2004, 2006, 2008, 2010, 2012) and each of the 23 product categories.

The equation for the calculation is: Measure of imbalance = $\log(\text{HHI retailers}/\text{HHI suppliers})$. This measure of imbalance entails the following advantages:

- Same calculation method can be applied regardless of the precise market situation, i.e. regardless of whether retailers or suppliers are more concentrated
- Outcome is centred around 0, which is easier for the reader to interpret
- Symmetry is preserved: the outcome of the statistic is the same regardless as to whether for instance the retailer HHI is twice as high as the supplier HHI, or vice versa.

An average measure of imbalance figure is calculated by taking the average of all 14 measures of imbalance calculated separately.

At local consumer shopping area level

The measure used is the Herfindahl–Hirschman Index (HHI): sum of the squares of the market shares of all retailers or suppliers, expressed as a value between 0 and 10,000.

The numerator in the calculation is retail concentration, measured by:

- HHI of retail groups by share of sales area: a value for each shop (and for each year 2004, 2006, 2008, 2010, 2012) is calculated by summing the squares of the combined sales area of each retail group in the given shop's CA.

The denominator in the calculation is supplier concentration, measured by:

- HHI measured in terms of the sum of the squares of the share of EAN codes in the assortments at shop level for all suppliers each year (2004, 2006, 2008, 2010, 2012).

Once again, the equation for the calculation is: Measure of imbalance = $\log(\text{HHI retailers}/\text{HHI suppliers})$.

4.7.6. Shop type

Shop type refers to the type of modern retail store: either a hypermarket (>2500 m²), supermarket (between 400m² and 2,499 m²) or discount store (all shop sizes).

Two different measures have been adopted for shop type, one at the local level, and the other at the procurement (national) level.

At procurement (national) level, using © Planet Retail we have summed the total number of shops per shop type per year in each Member State.

At local CSA level, using © Nielsen Trade Dimensions we have counted the number of shops for each type that fall within the boundaries of the CSAs in the sample. A figure is provided for each year (2004, 2006, 2008, 2010, 2012). Due to © Nielsen Trade Dimensions data restrictions on shop type, the 2004-2012 data set covers 4 MS, whilst the 2008-2012 sample covers 6 MS.

4.7.7. Shop size

Shop size refers to the sales area dedicated to edible grocery in modern retail shops. We have identified the sales area of all shops in the sample of CSAs and CAs, through using © Nielsen Trade Dimensions. Sales area dedicated to edible grocery has been calculated based on the following assumptions:

- Hypermarkets = Food sales area is 50% of total sales area

- Supermarkets = Food sales area is 80% of total sales area
- Discount stores = Food sales area is 90% of total sales area

Due to © Nielsen Trade Dimensions data restrictions on shop type, the 2004-2012 data set covers 4 MS, whilst the 2008-2012 sample covers 6 MS.

4.7.8. Private label share

Private label share refers to the market share of private label products compared to all edible grocery products available. Two different measures have been adopted, one at the local level, and the other at the procurement (national) level.

At procurement (national) level, private label share refers to the proportion of private label sales compared to total edible grocery retail sales per product category over time, using © Euromonitor International as the source. It is calculated for each product category, by summing the private label component of market size in millions of euros for Retail/Off-trade (retail channels) at retail selling price (using year-on-year exchange rate at current prices).

At local CSA level, private label share refers to the proportion of private label EAN per product category per shop over time, using © Nielsen Opus as the source. It is calculated for each product category, by summing the total EAN codes identified as Private Label and dividing by the total number of EAN in that given product category, for summer (2004, 2006, 2008, 2010, 2012) and for winter (2004, 2006, 2008, 2010, 2012). An average figure for each year has been calculated by adding the winter and summer total and dividing by two.

4.7.9. Product category turnover

Product category turnover refers to retail sales per product category over time. For each product category, it is measured by market size in millions of euros for Retail/Off-trade (retail channels) at retail selling price (using year-on-year exchange rate at current prices), using © Euromonitor International as the source. No quality check of © Euromonitor International data has been performed.

4.7.10. Socio-demographic characteristics

The study looks at the evolution of a number of socio-demographic statistics, in an effort to observe any impact they may have on choice and innovation. Six separate indicators have been gathered for the study.

- Population size: in millions of people, measured at the NUTS 3 level for each CSA using Eurostat data (demo_r_d3avg)
- Population density: measured at the NUTS 3 level for each CSA using Eurostat data (demo_r_d3dens)
- Unemployment rate, measured at the NUTS 2 level for each CSA using Eurostat data (lfst_r_lfu3rt)
- GDP per capita, measured by GDP at current prices (Purchasing Power Standard per inhabitant) at NUTS 3 level for each CSA using Eurostat data (nama_r_e3gdp) with the exception of 2012, for which data comes from Banque de France based on European Commission estimates (AMECO)
- Final consumption expenditure of households on food and non-alcoholic beverages at national level using Eurostat data (nama_co3_c)
- Retailers' business expectations at the national level using Eurostat data (ei_bsrt_m_r2)

Population size, population density, unemployment rate and GDP per capita figures represent the average across the CSAs within the sample MS. Figures for final consumption expenditure and retailers' business expectations relate to values for the MS as a whole.

The index “Retailers’ business expectations” is a forward-looking index which measures the expected business situation of firms operating in the retail industry (NACE Rev. 2) over the coming three months. The measure used is a monthly seasonally adjusted balance; the last month of each half i.e. June for H1 and December for H2 has been used to capture retailers’ expectations of future business activity for the periods for which Opus data have been gathered.

Where there are data gaps in Eurostat for certain regions, appropriate proxies have been defined. For example, where 2012 data is not available 2011 has been used as a proxy. Where NUTS 3 data is not available, the NUTS 2 figure has been used. No quality check of Eurostat data has been performed.

4.7.11. Region/MS characteristics

Region/MS characteristics refer to a range of qualitative factors that may influence choice and innovation. For this study, factors that have been addressed include the legal environment, shop opening hours and pricing policies. Qualitative analysis of key characteristics in each Member State is addressed in the relevant sections of the descriptive statistics.

4.8. Database construction

Analysis of choice and innovation in 23 product categories across a broad sample of modern retail grocery stores in Europe over the period of eight years has required the compilation a significantly large amount of data (11 million records in total), acquired from multiple providers and consolidated in a number of SQL Server databases. One SQL Server database has been produced for each Member State that forms part of the study (9 in total) and a consolidated file brings all results together in one central repository.

4.8.1. Key principles and sources

Data was acquired on individual products (identified by EAN), and therefore for each individual product stocked in each shop in our sample, in each time period, there is a unique record in the database for that country. This has resulted in exceptionally large datasets, of approximately 11 million records in total.

Calculations have been performed within each database based on the indicators and measures defined in the scoping of the study. The analysis that has subsequently been produced in the form of Excel output files is a result of export queries from the database. An appropriate selection of these results has been presented in the present section on descriptive statistics.

There are six key sources of data that have been compiled to produce the databases, which are detailed below:

- **© Nielsen Opus** – this is the “anchor” data set from which the databases have been constructed. © Nielsen Opus contains data for each EAN present on the shelves of shop that was audited at a particular point in time over the eight year period. There is one record for each individual product in each period. Data from © Nielsen Opus was received in the form of either one or two Excel files for each shop in our sample (343 shops in total). These individual files were then combined into a single SQL Server database which could be queried to perform checks, make necessary calculations and obtain results.
- **© Nielsen Trade Dimensions** – this data source provided a list of all shops within a given geographic area. It includes information on the shop type, shop

size, banner, group, address and location (GPS coordinates). This information was required for analysing the choice of shops for consumers in a given CSA, the evolution of shop type and shop size in CSAs, and for retailer competition (retail concentration at local level) for each of the sampled shops.

- **© Intel Group Ltd** – Intel GNPD is an online data repository which catalogues and categorises new products using a range of techniques. We downloaded extractions of © Intel GNPD data for all time periods, countries and product categories in the study, and matched the data with the EAN codes observed on shop shelves. Each new product identified in GNPD is classified as a particular type of innovation, according to consistent GNPD methodology.
- **Eurostat** – this is the statistical information system of the European Union (EU), aiming to harmonise approaches across the Member States. Data has been extracted to provide the socio-demographic statistics for each of the NUTS 3 areas (closest equivalent to CSAs/CAs) and Member States in the study, as well as the initial definition of the CSAs.
- **© Euromonitor International**– this online data was used to gather data on supplier market shares and private label market shares for each of the product categories across the scope of MS as well as data on market size per product category (product category turnover). It enabled the calculation of supplier concentration statistics at national level, and was integrated into the shop level database to provide an alternative measure of supplier concentration and private label share.
- **© Planet Retail** – this online data source provided extensive data and analysis on edible grocery and modern retail groups to enable the calculation of retail concentration measures at national level. It also provided a key source of qualitative information on the evolution of MS and regional characteristics.

4.8.2. Process for consolidation of sources

Due to the significant volumes of data and the number of similar databases to be created, the databases were created in series. To ensure consistency, the queries required to build the databases were written once, and reused for each subsequent country database. The queries also served as the basis for the overall database.

The diagram below (Figure 17) shows how the data sources were combined to create each database. The databases are at EAN level, and so © Nielsen Opus forms the basis. There is one line in the databases for each record in © Nielsen Opus. Once the individual Excel files (received for each of the 343 shops in the sample) were consolidated into the database, checks were carried out on the quality and completeness of the data. Where errors or omissions were found, the project team liaised with the data provider in order to address these issues.

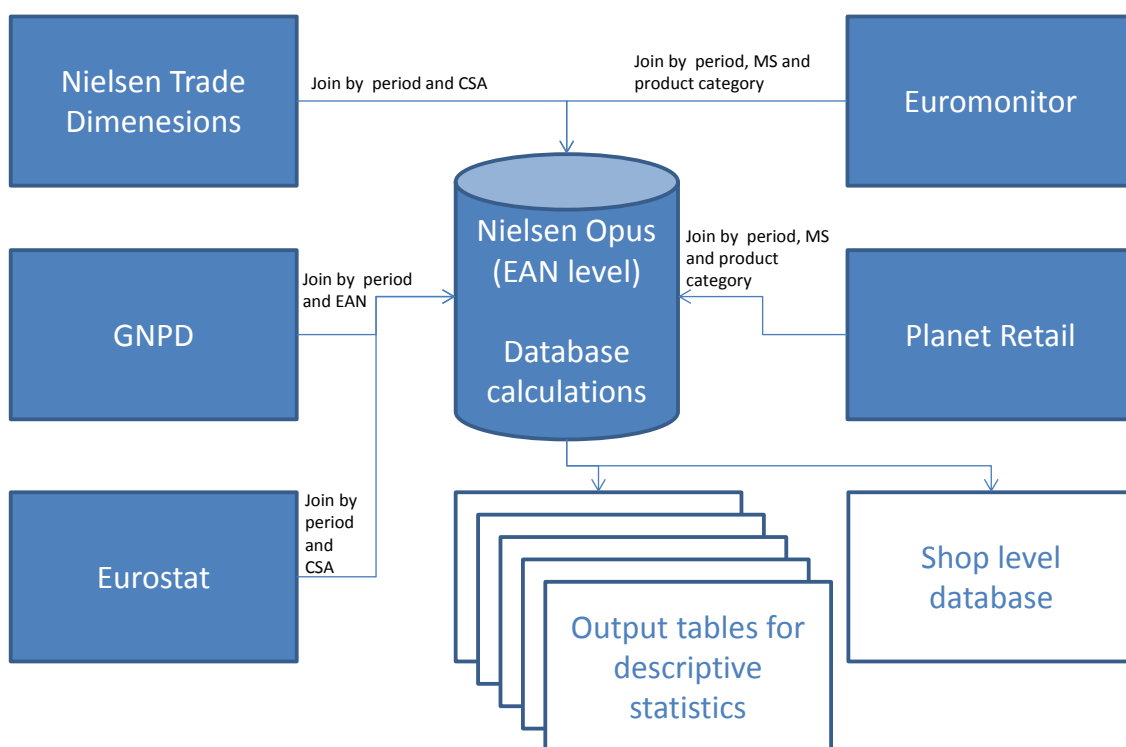
With © Nielsen Trade Dimensions, a large amount of pre-processing was carried out before it could be used in the database. Firstly extensive data cleansing techniques were employed to ensure data was consistent, as formats and quality of presentation differed across the MS in the sample. A macro was developed by the project team to determine whether the shops were located within the boundaries of our CSAs. Finally, for each shop in our © Nielsen Opus sample, we used the geo-coordinates to identify which competitor shops were located within the boundaries of the CA. © Nielsen Trade Dimensions data was joined to © Nielsen Opus data based on period and CSA, whilst the competing shops (CA) are joined to each given sampled shop.

Using the list of competing shops, retail concentration analysis was calculated for each given shop in the sample, in line with the measures that had been defined. This was joined into the main database at the level of each shop.

Calculations were performed on all records within the database, to show when a given EAN first appeared in the sample. Each of these is subsequently classified as a new product in © Nielsen Opus. GNPD is used to assess innovations, and is joined to a particular EAN number. A join is only made if the record is in the same period as when the EAN first appeared in the sample. For example, if a product was stocked in some shops from 2006, but in others from 2008, it would be flagged as a GNPD innovation along with the appropriate classification in 2006, but not in 2008. This represents the fact that the consumer could have purchased the product previously, albeit not in that particular shop. Clearly because of the nature of innovation, innovative products can only be identified from 2006 onwards (new products in 2004 cannot be identified, as 2002 data is not available for comparison).

Eurostat was joined to the main database using CSA and time period, whilst © Euromonitor International and © Planet Retail are joined using period, MS and product category.

Figure 17: Database construction – per MS and at consolidated level



Whilst the data is held at product (EAN) level in the database, the outputs required are at much “higher” levels so as to be useful for presentation in the descriptive statistics.

For each Member States, we produced a shop level summary database for use in the econometrics. For each shop, period and product category combination there is a single record in these shop level databases. This allows testing of econometric equations on a consistent basis. Outputs are counted (as in the case of EANs), counted unique (as in the case of suppliers) or grouped (as in the case of demographics). For example, for a given shop/period/product category combination,

there may be 500 records in the database (in other words, 500 EANs), 10 unique suppliers within those 500 records and only one population figure (as the shop is always within the same CSA).

Output tables for the descriptive statistics are similar, but are calculated on a number of different levels. For example, to show the number of EANs available in a CSA, it is necessary to count unique records tagged to that CSA. It is not possible to retrieve this information from the shop level database, and demonstrates why the data must be held at EAN level.

4.8.3. Limitations of the database

Like any database of a similar nature, the quality of the outputs produced is dependent upon the quality of the input data. The following limitations should be borne in mind when considering the results of analyses:

- Quality of pricing data has not been audited by the provider. Where identified, corrections to erroneous prices have been made, however this process has not been exhaustive. The study team has presented outputs using this information in Choice 3, but would suggest caution when interpreting these results.
- For Denmark there is no © Nielsen Trade Dimensions data, so retail concentration and Choice 1 could not be calculated for the entire study period. Similarly, © Nielsen Trade Dimensions is only available from 2008 onwards for Belgium, from 2010 onwards for Poland and from 2012 for Czech Republic. These limitations have therefore restricted the sample for which retail concentration, shop type, shop size and Choice 1 results are available.
- In some cases totals cannot be reconciled when comparing different measures. This is not so much a limitation, but an important explanatory note to ensure the integrity of the results is not questioned. For example, the sum of shops split by CSA type or GDP segmentation will not equal the total number of shops. This is because some CSAs overlap, and shops are therefore located in more than one CSA.
- GNPD may not capture all innovations due to its sampling methodology. Coverage across particularly Member States in the sample has improved over time, so as a result, GNPD has been used primarily as the source enabling innovations to be categorised by type.
- In Hungary, there is a notable number of missing data points for ready cooked meals in individual shops. In many cases this can be observed in the descriptive statistics, so whilst this data has been included where it is available, these results should be interpreted with caution. The results on this product category for Hungary however are not expected to significantly modify the overall observations for the category across the sample as a whole.

5. Descriptive statistics from data analysis

5.1. Introduction

This section provides a description of the evolution of choice, innovation and the a priori drivers identified in the first phase of this study. Choice and innovation have been observed in a sample of shops located in CSAs that represent a broad range of living situations of EU citizens. The evolution of the a priori drivers has been measured either at the CSA (local) level based on the sample of MS and shops selected, or alternatively used national statistical databases and sources to provide a measurement at the procurement (national) level.

5.2. Question 1: How has choice in the EU food sector evolved over time and across MS?

5.2.1. Introduction

This section illustrates the results of analysis for each of the five components of choice across the selected sample of shops and consuming shopping areas in the EU.

5.2.2. Summary of findings

Choice in shops and products for consumers, on the whole, has increased over the past decade in the EU. This increasing trend was generally higher in the pre-crisis period (between 2004 and 2008) and has slowed since 2008.

Choice has increased for four of the five components, as illustrated in Table 16 below. The only measure where a decreasing trend has been observed is in the variety of prices across a given product category, which despite an increase in the pre-crisis period, contracted during the crisis period of 2008-2012.

Table 16: Summary of findings on evolution of choice

| Component | 2004-2008 | 2008-2012 | 2004-2012 | Trend |
|---------------------------------|-----------|-----------|-----------|--|
| Choice in shops | + | + | + | + for all sample Member States ++ in rural areas + for all shop types |
| Choice in alternative products | ++ | + | + | + for all sample Member States + for all sample product categories + for all shop types (++ discount stores) |
| Choice in packaging sizes | ++ | + | + | + for all sample Member States (++ for Spain) + for all sample product categories + for all shop types |
| Choice in alternative suppliers | ++ | + | + | + for all sample Member States + for all sample product categories + for supermarkets, ++ for hypermarkets and discount stores |

| | | | | |
|---|---|----|---|--|
| Choice in prices per product category ⁶⁶ | + | -- | - | - overall across Member States, +in discount stores, - in hypermarkets and supermarkets. |
|---|---|----|---|--|

+ Positive CAGR; - Negative CAGR; ++ CAGR is twice as much as average growth value; -- CAGR is twice as less as average growth value

The choice trends for each of these components are developed in the sections below.

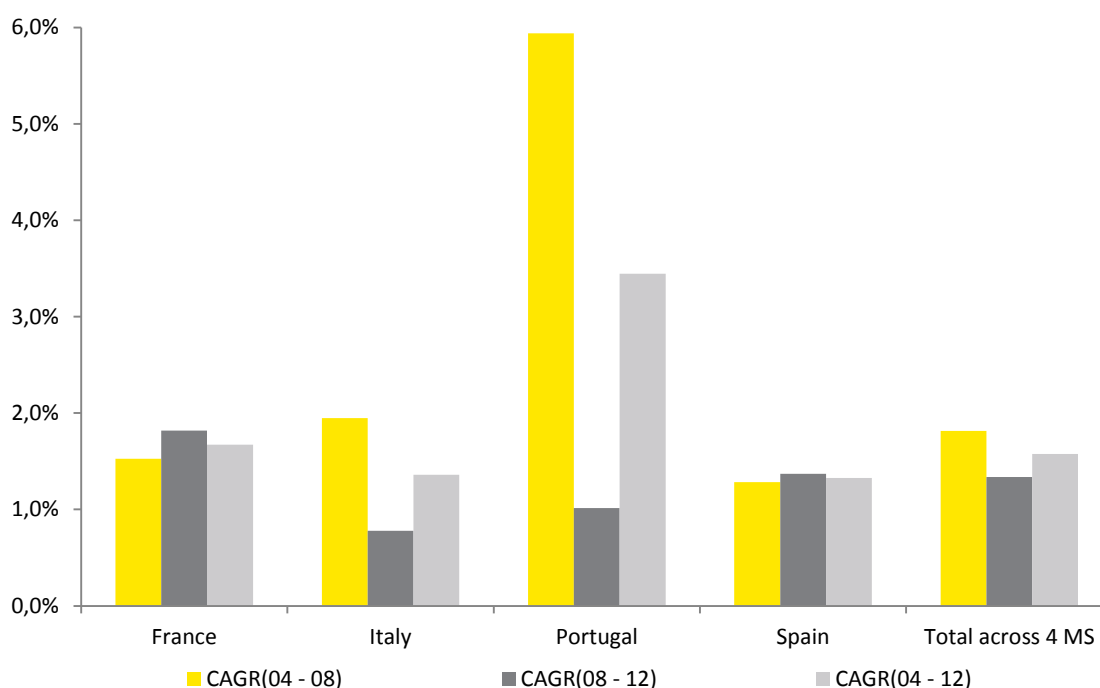
5.2.3. Findings by component of choice

Choice in shops

Overall choice in shops for consumers living in the sample CSAs increased over the past decade (2004-2012) by 1.6% annually. During the pre-crisis period (2004-2008) the growth was higher (1.8%) than during the crisis period since 2008 (1.3%).

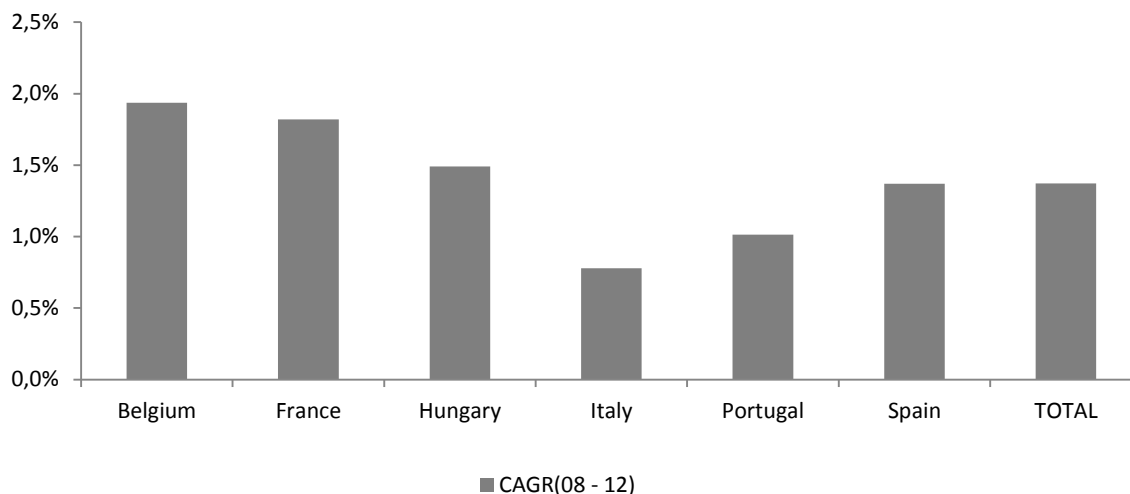
The trends in choice are relatively similar across the sample of MS, however with a few exceptions. In Figure 18 & Figure 19 below, the MS that experienced the highest growth in the pre-crisis period (sample of 4 MS) was Portugal (5.9%) followed by Italy (1.9%). During the crisis period from 2008-2012 (sample of 6 MS), the highest growth was in Belgium (1.9%); followed by France (1.8%). The MS that experienced the least growth is Italy, followed by Portugal (both saw 1.0% or less growth during the 2008-2012 period).

Figure 18: 2004-2012 data set: Total number of shops in Member State (local level) - average CAGR across all modern retail shop types (source: EY analysis based on © Nielsen Trade Dimensions)



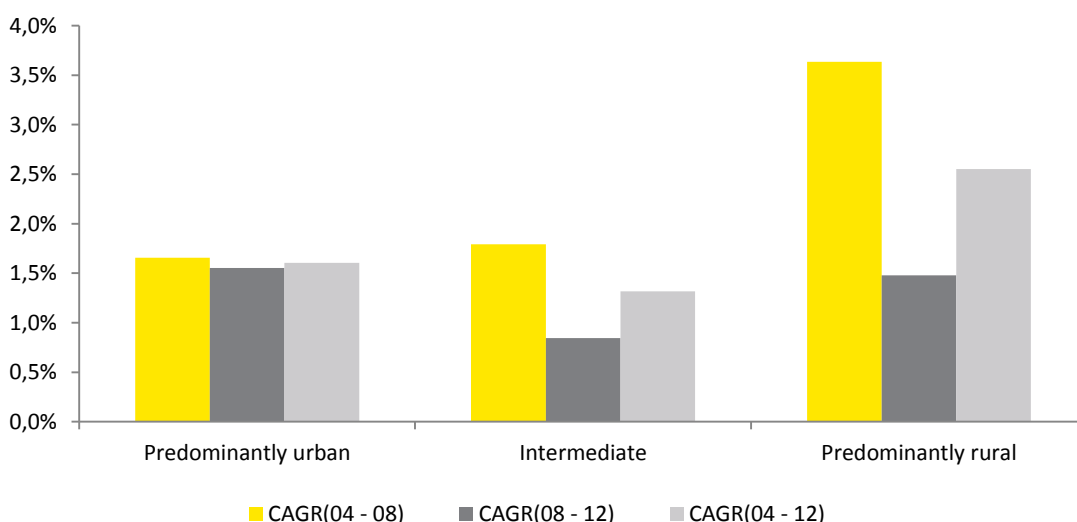
⁶⁶ Results to be considered with caution: inconsistency found in data.

Figure 19: 2008-2012 sample: Total number of shops in CSAs by Member State (local level) - average CAGR across all modern retail shop types (source: EY analysis based on © Nielsen Trade Dimensions)



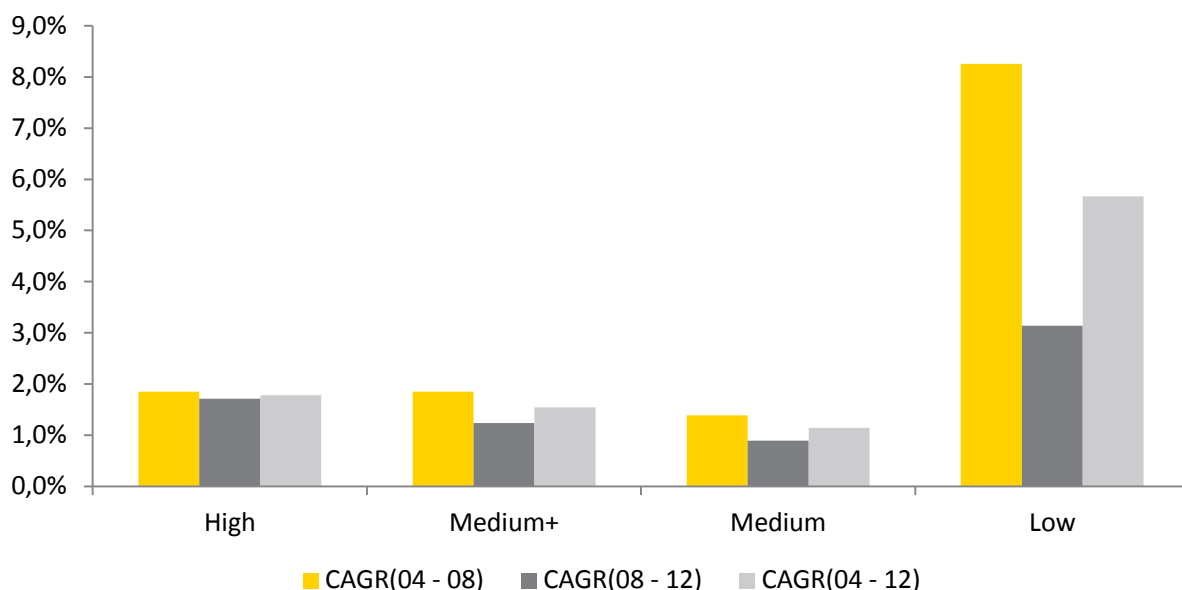
Variations in choice of shops were observed in the different types of living areas and GDP segmentation. As shown in Figure 20 below, during the pre-crisis period the annual growth registered in predominantly rural areas (3.6%) was twice as high as the growth in intermediate (1.8%) and predominantly urban areas (1.7%). By comparison the crisis period saw lower annual growth rates across all types of living areas, with predominantly urban (1.6%) seeing higher growth than predominantly rural (1.5%), with intermediate registering the lowest growth rate (0.8%). The same trend was observed in both the 2004-2012 and 2008-2012 samples. It should be remembered, however, that the number of shops in predominantly rural represent only 10% of the total number of shops –vs 8% in 2004.

Figure 20: 2004-2012 data set: Total number of shops in CSAs by CSA type of living (local level) - average CAGR across all modern retail shop types (source: EY analysis based on © Nielsen Trade Dimensions)



Similarly, low GDP areas observed highest growth rates in terms of number of shops over the period, but their absolute numbers represented only 1.6 to 2.2% of the total number of shops of the sample.

Figure 21 : 2004-2012 data set: Total number of shops in CSAs by CSA GDP segmentation (local level) - average CAGR across all modern retail shop types (source: EY analysis based on © Nielsen Trade Dimensions)

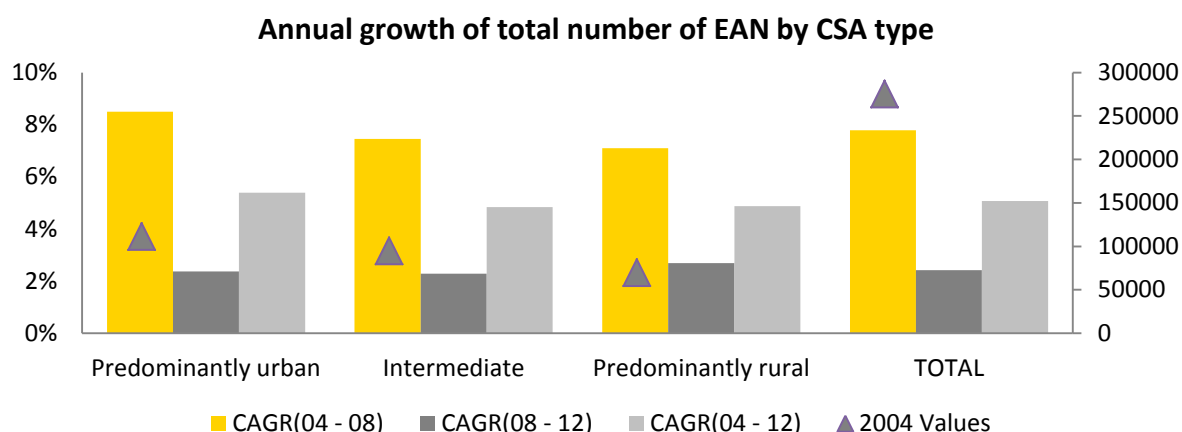


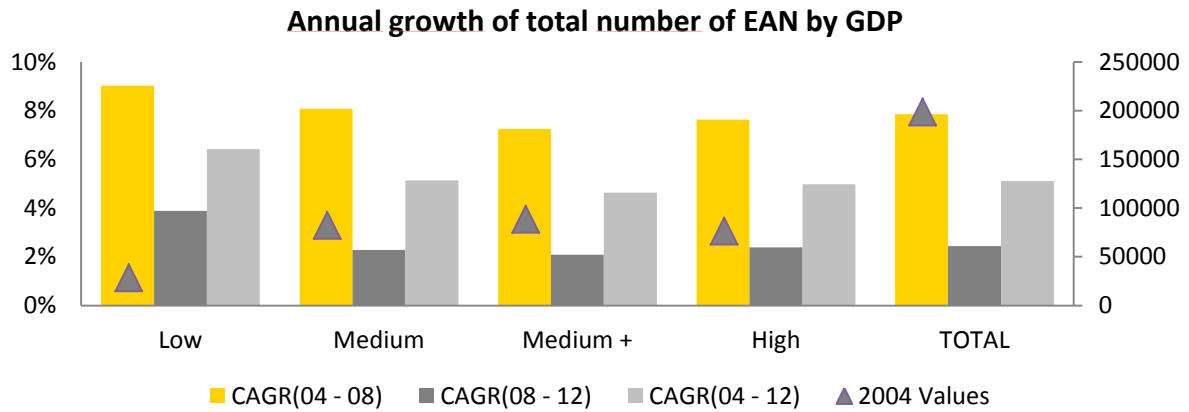
Choice in alternative products

Overall choice in alternative products has increased over the past decade in the CSAs of the sample by 5.1% annually. During the pre-crisis period (2004-2008) the annual growth was higher (7.8%) than during the crisis period since 2008 (2.4%).

The growth trend in choice quite similar across CSA types, ranging from 3.6% to 9.3% over the period; the highest growth was seen in the sampled shops in the less prosperous predominantly urban CSAs.

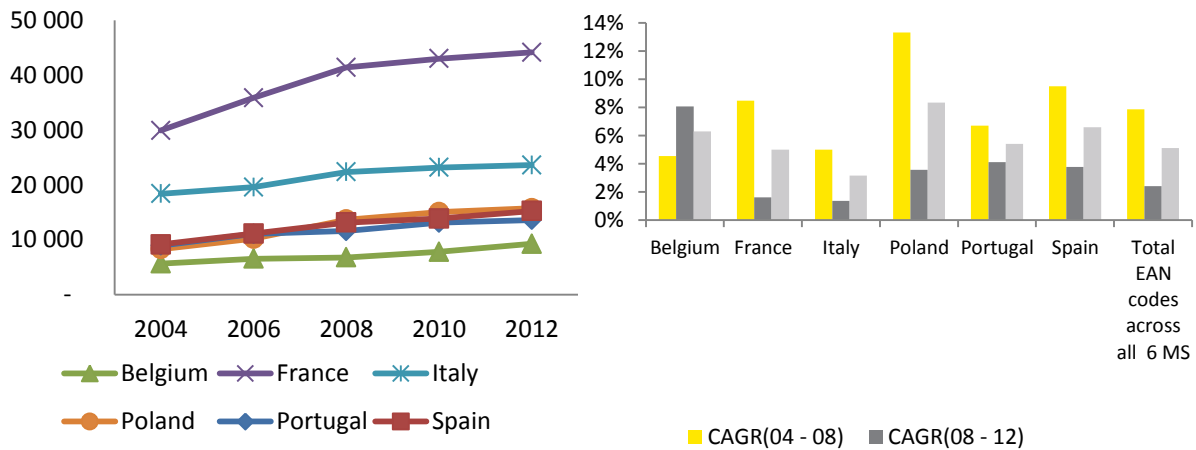
Figure 22 : 2004-2012 data set: Total EAN codes by CSA type and GDP range (local level) and average annual growth rate across 23 product categories (source: EY analysis based on © Nielsen Opus)





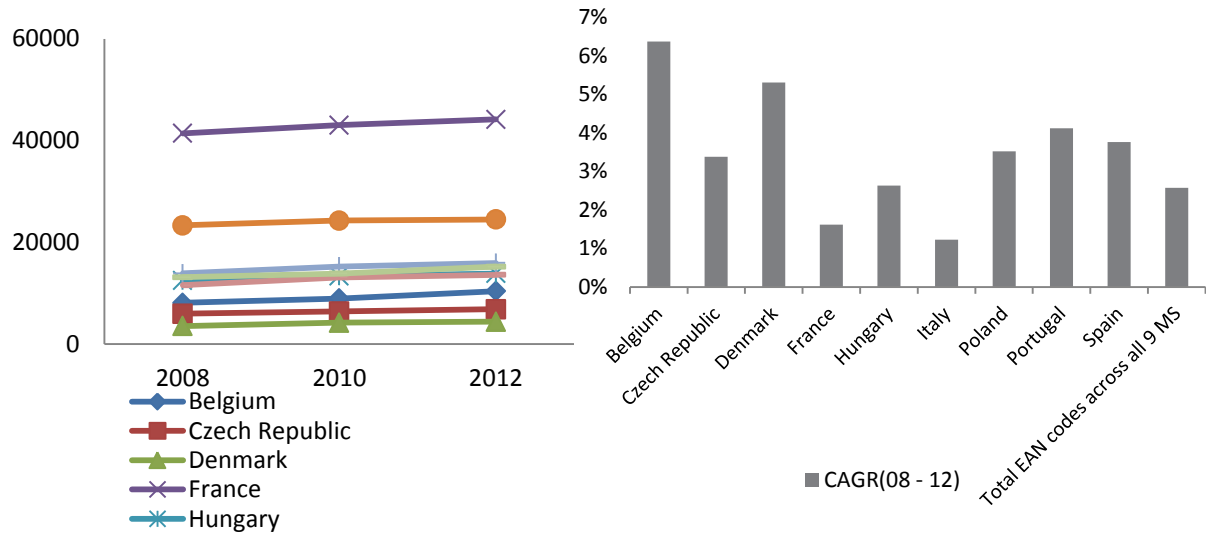
When aggregating the sampled shops by MS, the trends in choice differ across the sample of MS. As shown in Figure 23 and Figure 24 below, the MS that experienced the highest growth in the pre-crisis period were Poland, Spain and France. During the crisis period (sample of 6 MS), the highest growth was in Belgium⁶⁷, followed by Portugal, Spain and Poland. The MS that has experienced the slowest growth is Italy, followed by France (both saw less than 2% annual growth from 2008-2012). The highest growth rates were experienced in the MS with the lowest number of EAN codes in 2004.

Figure 23: 2004-2012 data set: Total EAN codes by Member State (local level) and average annual growth rate across 23 product categories (source: EY analysis based on © Nielsen Opus)



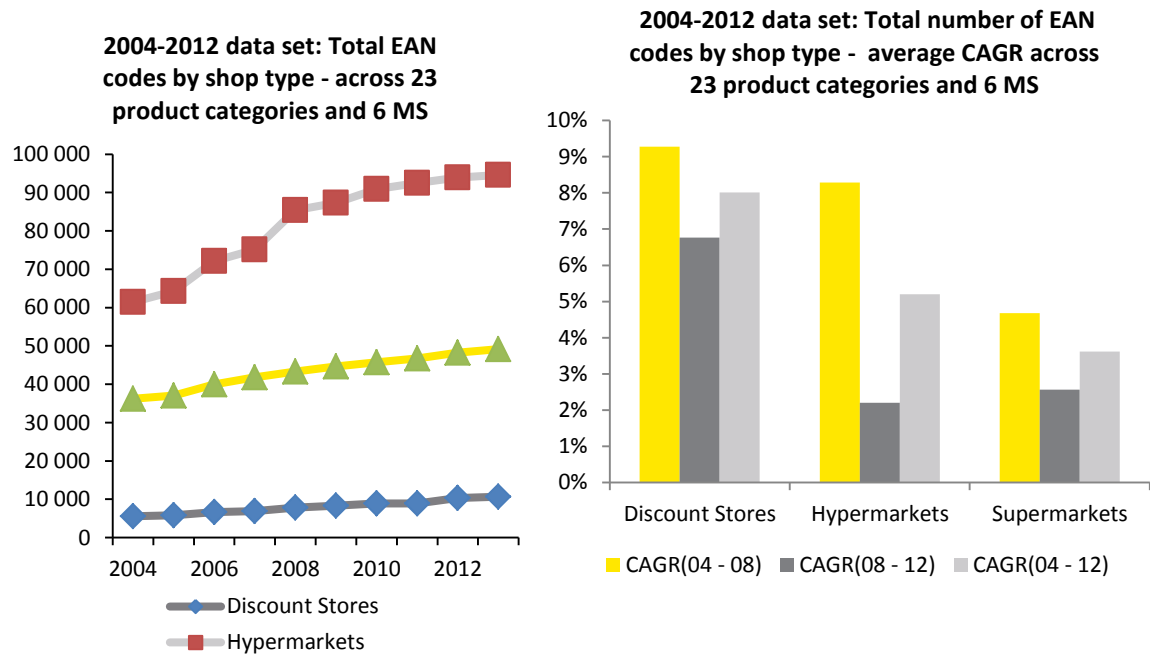
⁶⁷ Due to the small sample size in Belgium, this growth appears to be influenced by the shops selected in the sample and the trend is abnormal compared other MS. As a consequence, this result should be interpreted with caution. Small sample size may also affect results relating to Czech Republic and Denmark.

Figure 24: 2008-2012 sample: Total EAN codes by Member State (local level) and average CAGR across 23 product categories (source: EY analysis based on © Nielsen Opus)



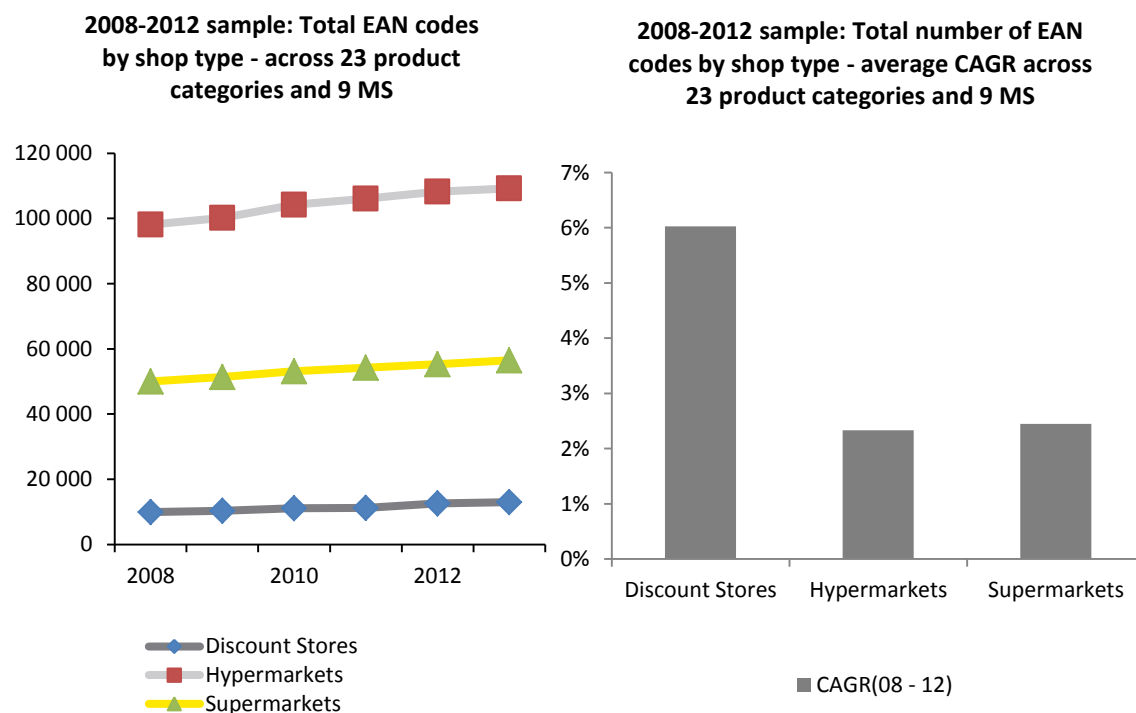
Variations in choice trends have been observed across the three shop types. Choice has grown differently across the shop types over the past decade. As shown in Figure 25 below, for the sample of 6 MS, during the pre-crisis period, choice in discount stores grew at the fastest rate, followed closely by hypermarkets, with supermarket registering the lowest annual growth rate. During the crisis period, growth for discount stores slowed slightly, and for supermarkets moderately, however the annual growth for hypermarkets decreased to a greater extent (just over 2% for 2008-2012 compared to 8% for 2004-2008).

Figure 25: 2004-2012 data set: Total EAN codes by shop type (local level) (source: EY analysis based on © Nielsen Opus)



These trends are amplified when looking at the 2008-2012 shop sample covering 9 MS, as shown in Figure 26 below. As can be seen in Figure 26 below, during the crisis period the growth in discount stores has far exceeded both supermarkets and hypermarkets, to be mitigated by the fact that discount stores are also shops where the variety of EAN codes is the lowest.

Figure 26: 2008-2012 sample: Total EAN codes by shop type (local level) (source: EY analysis based on © Nielsen Opus)

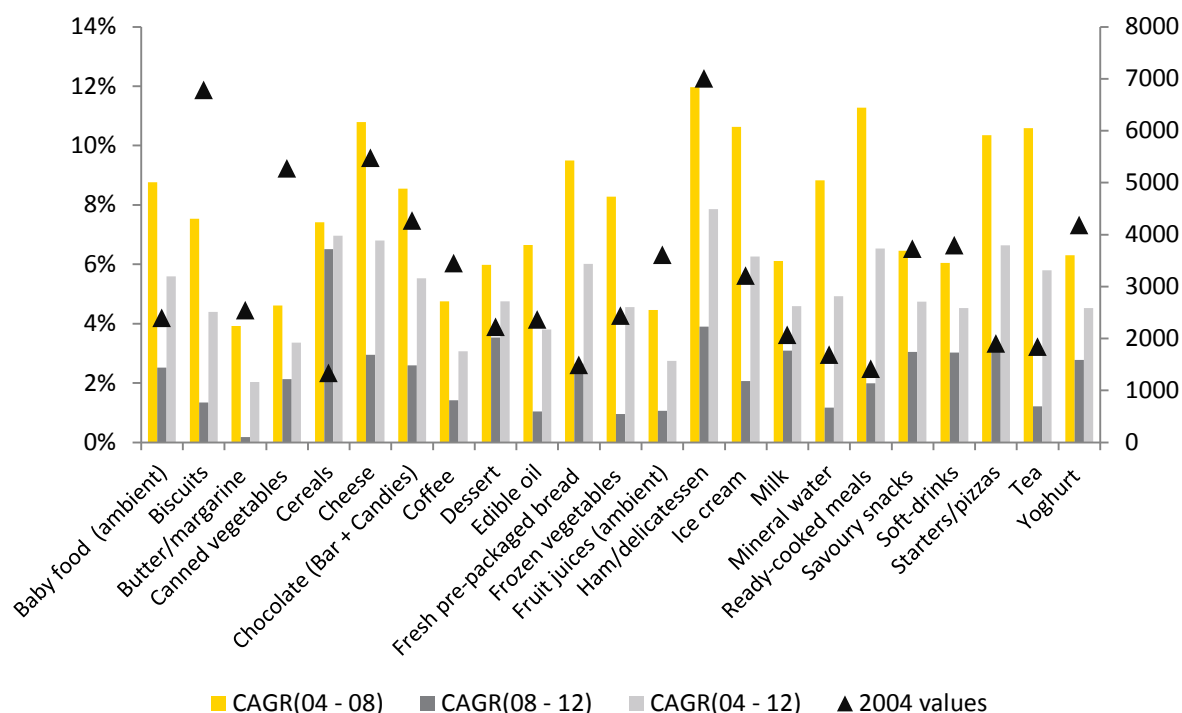


Choice in products per product category

Choice has increased across all product categories over the past decade; however evolutions vary significantly across product categories, illustrated by figures below.

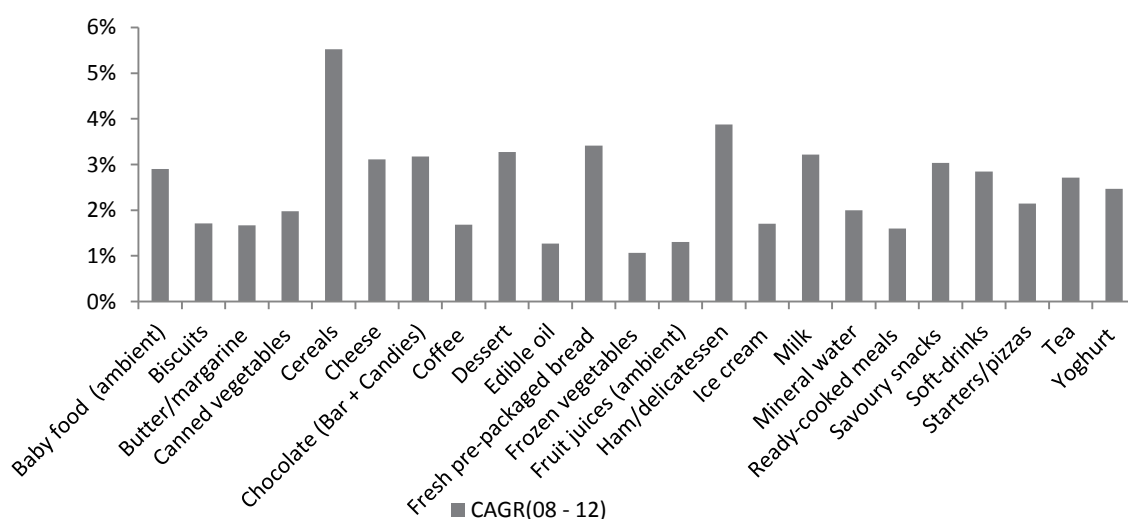
The 2004-2012 data set covering 6 MS in Figure 27 below shows that 6 of 23 product categories registered greater than 6% compound annual growth over 2004-2012 (notably ham/delicatessen, cereals and cheese), whilst 5 of 23 did not exceed 4% annual growth (with butter/margarine the lowest at 2%).

Figure 27: 2004-2012 data set: Total number of EAN codes by product category (local level) - average CAGR across 6 MS (source: EY analysis based on © Nielsen Opus)



The 2008-2012 shop sample covering 9 MS in Figure 28 below shows that 7 of 23 product categories saw greater than 3% annual growth from 2008-2012 (notably cereals and ham/delicatessen), and another 8 of 23 registered growth of less than 2% (the lowest being frozen vegetables). Trends across the two samples are generally similar for the majority of product categories. In contrast to what was observed before, the growth intensity has no link with the initial value: ham/delicatessen and cheese observed the strongest growth rates in spite of the high level of the 2004 value in terms of number of EAN codes, placing them among the largest product categories.

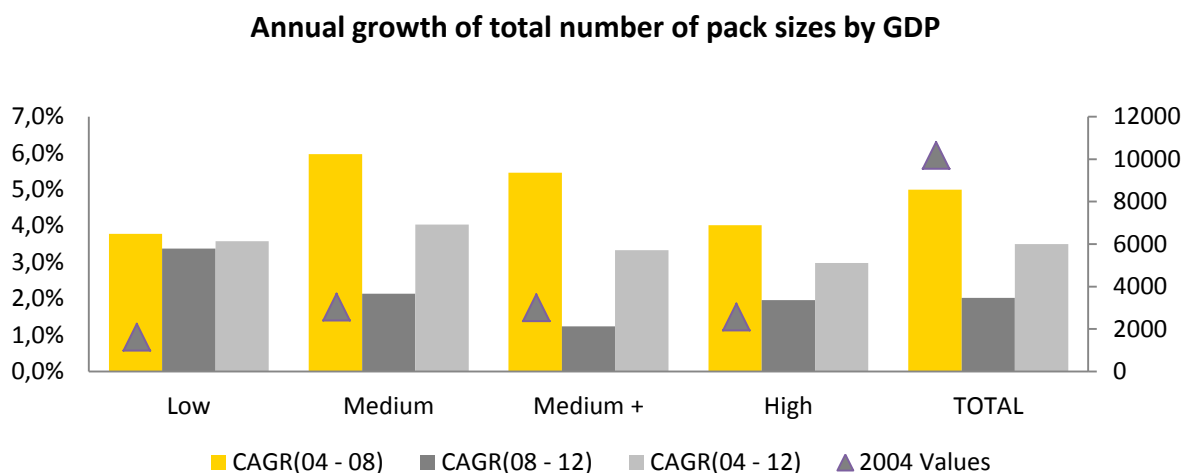
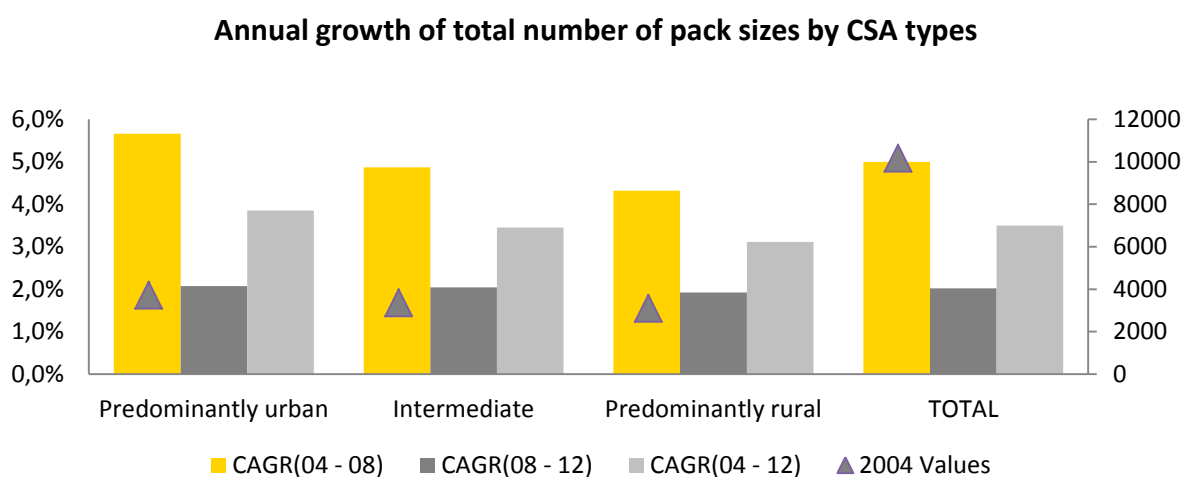
Figure 28: 2008-2012 sample: Total number of EAN codes by product category (local level) - average CAGR across 9 MS (source: EY analysis based on © Nielsen Opus)



Choice in product size

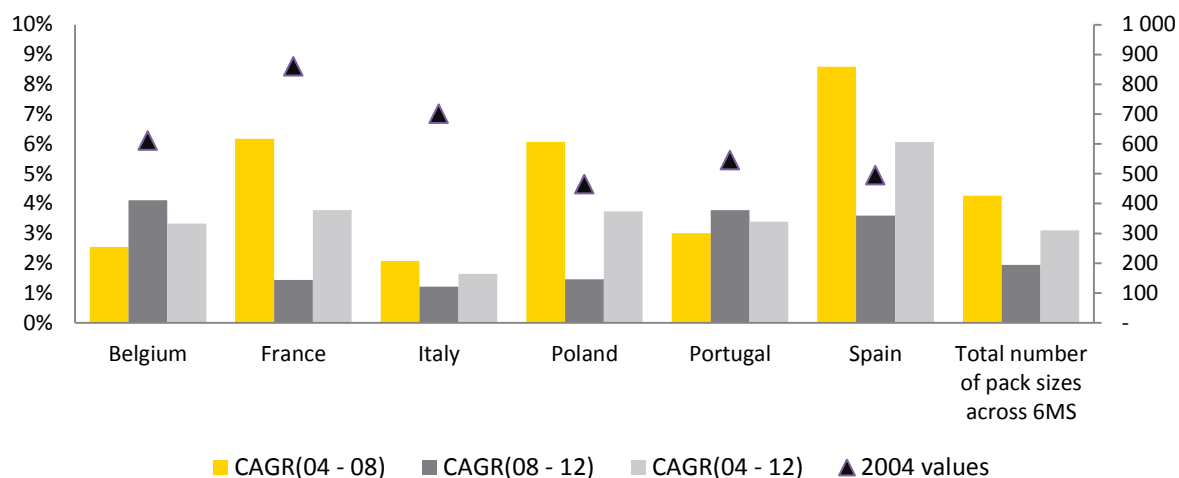
The variety of different product sizes available within each product category, on the whole, has observed a positive trend, amounting to 3.5% over the period, with higher growth during the pre-crisis period (5%). Predominantly urban and/or medium GDP range areas both experienced higher growth rates than other areas.

Figure 29: 2004-2012 data set: Total number of pack sizes by CSA type and GDP range (local level) - average CAGR across 23 product categories (source: EY analysis based on © Nielsen Opus)



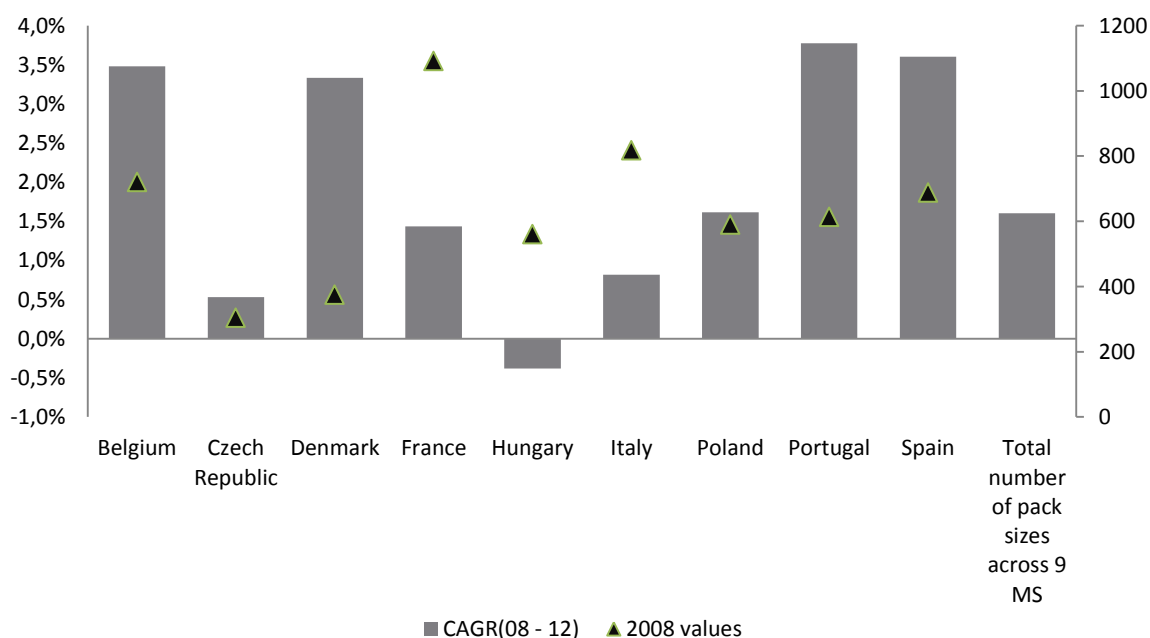
When aggregating the sampled shops by MS, for the 2004-2012 data set covering 6 MS in Figure 30 below, choice has increased over time in all MS, ranging from 1.6% to 6.1% over the 2004-2012 period. Similarly to trends observed in other indicators, the trend over the pre-crisis period was more positive (between 2.1% and 8.6%) than that of the crisis period (between 1.2% and 4.1%). The most significant annual growth has been observed in Spain, followed by France and Poland. Italy, on the other hand, registered the lowest growth level. The growth levels do not seem to be correlated to the initial number of pack sizes in 2004.

Figure 30: 2004-2012 data set: Total number of pack sizes by Member State (local level) - average CAGR across 23 product categories (source: EY analysis based on © Nielsen Opus)



For the 2008-2012 sample covering 9 MS in the Figure 31 below, the growth levels largely followed the situation in the 2004-2012 data set. Portugal, Spain and Belgium accounted for the strongest growth, while Hungary contracted slightly. Of the other MS not covered in the 2004-2012 data set, Denmark recorded growth of 3.3% whilst the Czech Republic's growth rate was 0.5%. It is important to note that results relating to these two latter MS are based on a limited number of observations.

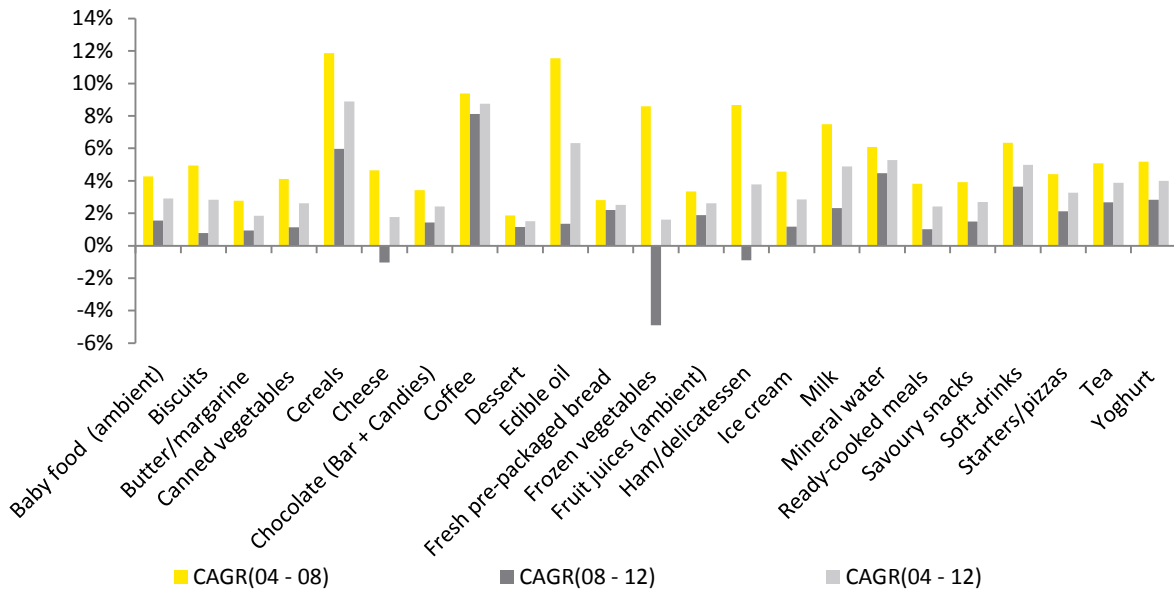
Figure 31: 2008-2012 sample: Total number of pack sizes by Member State (local level) - average CAGR across 23 product categories (source: EY analysis based on © Nielsen Opus)



Choice evolutions vary significantly across the sample product categories, illustrated by figures below. Figure 32 below, covering the 2004-2012 data set across 6 MS, shows 26% of product categories registered greater than 4% compound annual growth over 2004-2012, whilst 17% saw very growth that did not exceed 2%. The figure also

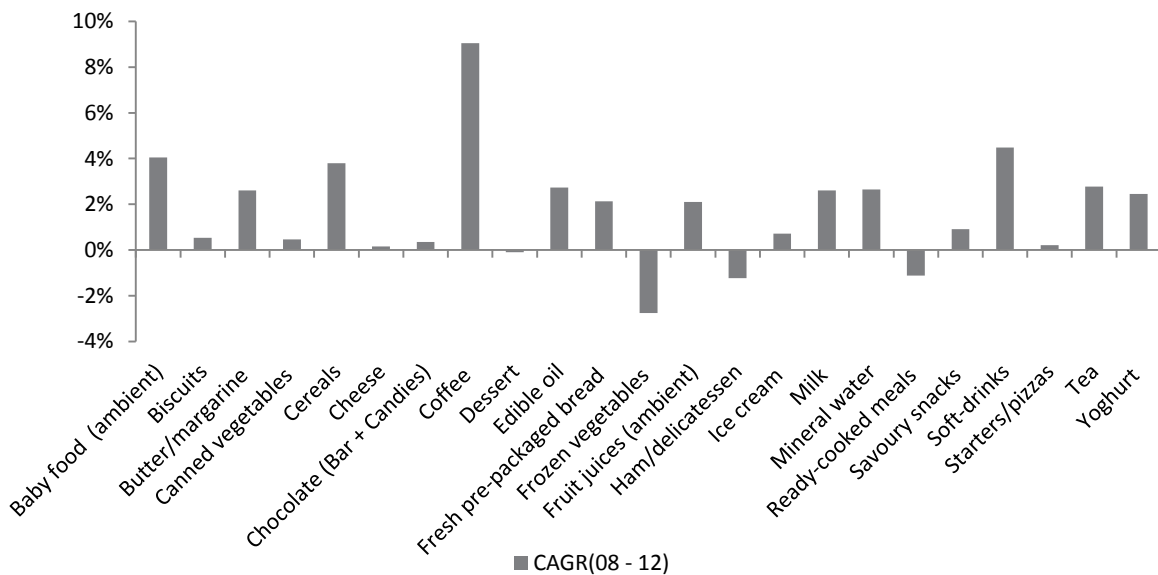
demonstrates that the positive evolution was much greater over the pre-crisis period than the crisis period. In fact, growth contracted for three product categories (cheese, frozen vegetables, and ham/delicatessen) over the crisis period.

Figure 32: 2004-2012 data set: Total number of pack sizes by product category (local level) - average CAGR across 6 MS (source: EY analysis based on © Nielsen Opus)



The 2008-2012 shop sample across 9 MS in Figure 33 below, shows 50% of product categories saw greater than 2% annual growth from 2008-2012, and another 30% registered growth of less than 2%. Three product categories registered a contraction in choice (frozen vegetables, ham/delicatessen and ready-cooked meals). Trends across the two samples are generally similar for the majority of product categories.

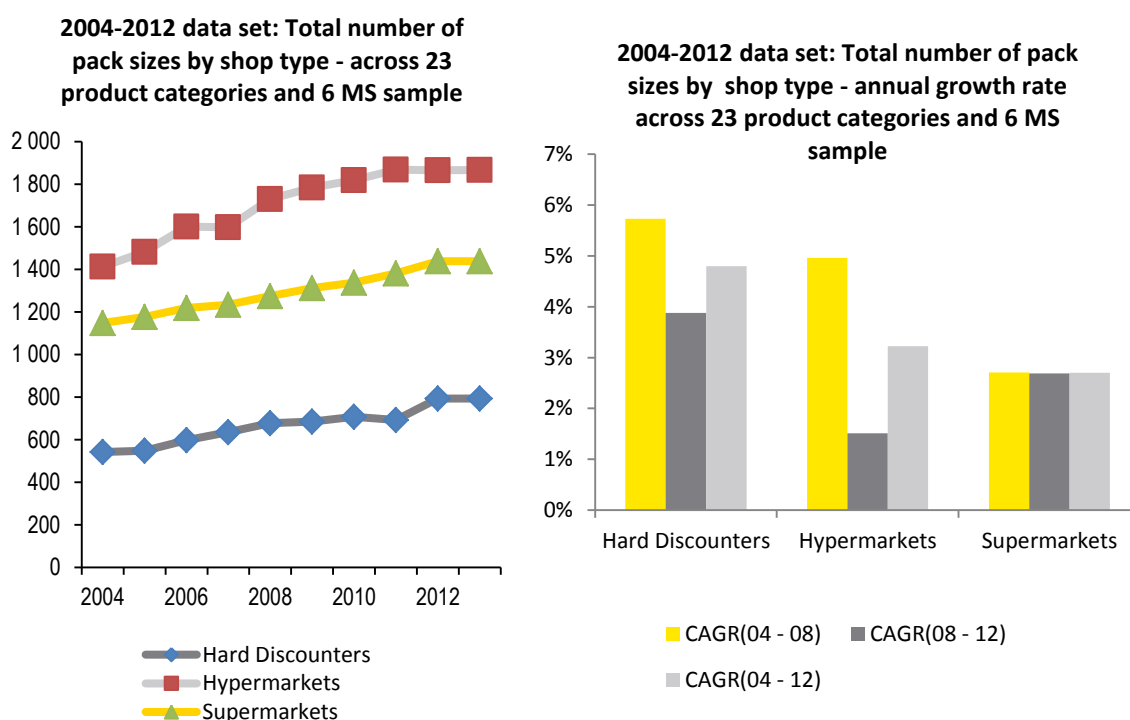
Figure 33: 2008-2012 sample: Total number of pack sizes by product category (local level) - average CAGR across 9 MS (source: EY analysis based on © Nielsen Opus)



Variations in the choice trend have also been observed across the three shop types. When looking at the 2004-2012 shop sample covering 6 MS in Figure 34 below, choice

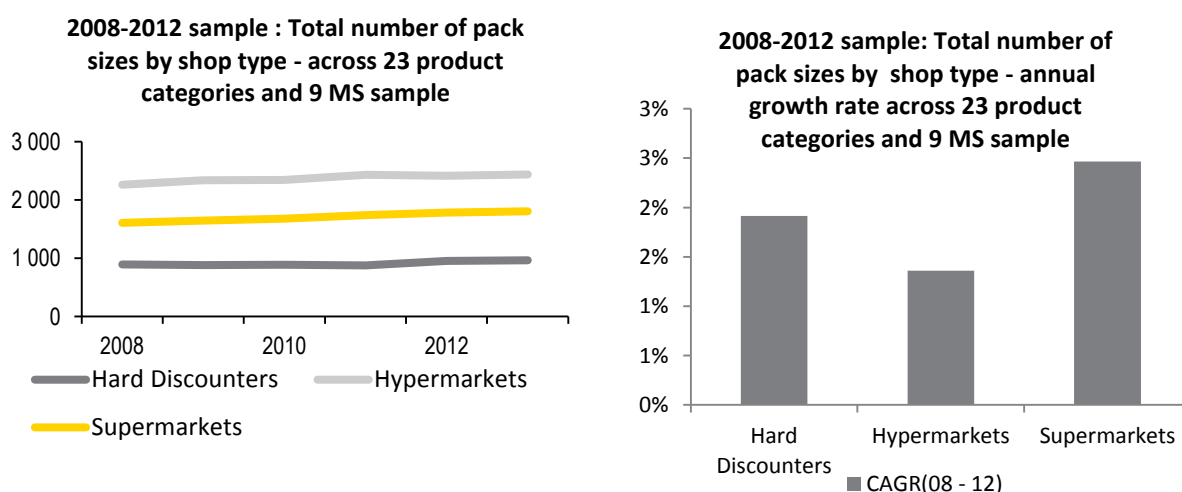
has grown differently across shop types. During the pre-crisis period, choice in discount stores grew at the fastest rate, followed closely by hypermarkets, with supermarkets much lower. During the crisis period, growth for discount stores slowed, for supermarkets growth levels remained constant, and the growth for hypermarkets decreased to a greater extent (1.5% for 2008-2012 compared to 5% for 2004-2008).

Figure 34: 2004-2012 data set: Total number of pack sizes by shop type (local level)
(source: EY analysis based on © Nielsen Opus)



These trends slightly differ across shop types when looking at the 2008-2012 shop sample covering 9 MS. As can be seen in Figure 35 below, during the crisis period the growth for discount stores was greater than for hypermarkets, however supermarkets registered the highest growth rate.

Figure 35: 2008-2012 sample: Total number of pack sizes by shop type (local level)
(source: EY analysis based on ©Nielsen Opus)



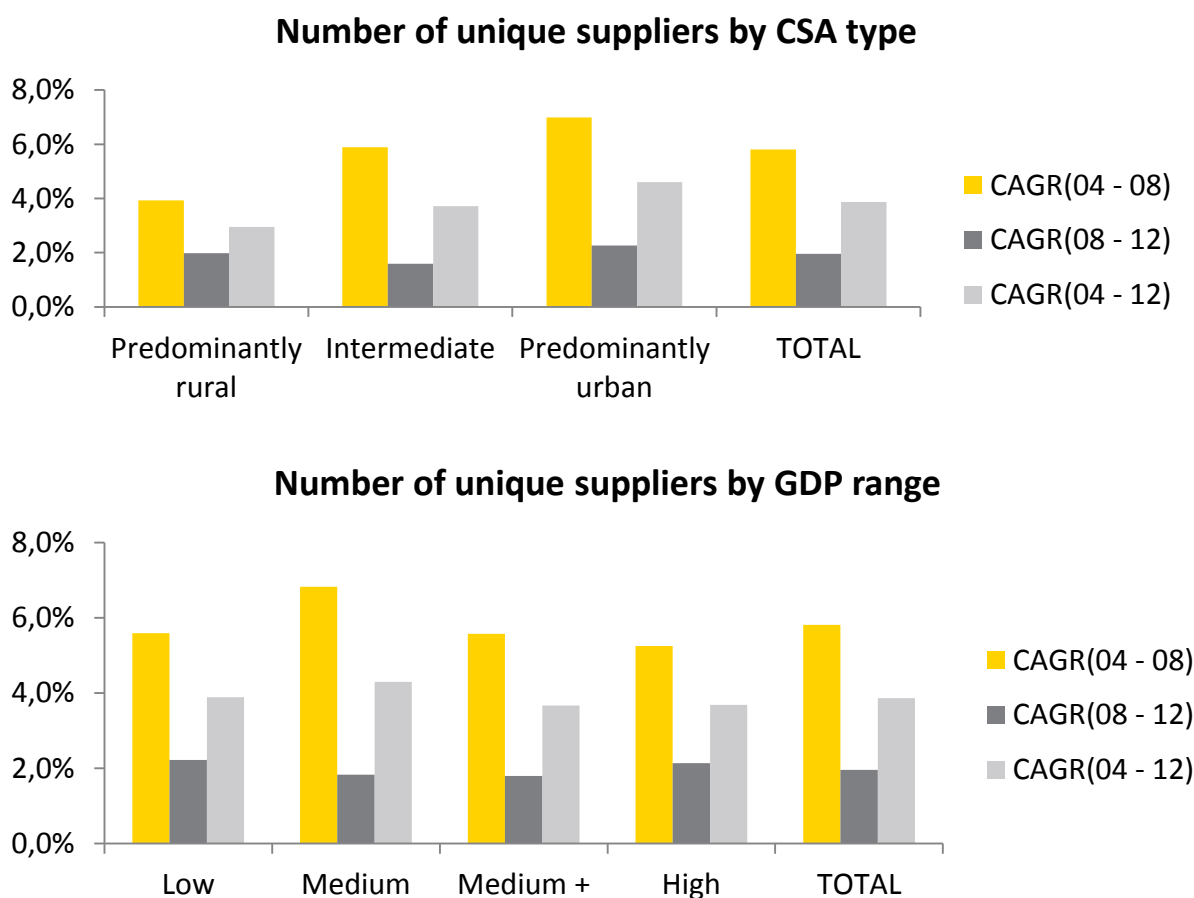
Choice in suppliers

The number of different suppliers within each product category, on the whole, has observed a positive trend.

The total number of different suppliers increased by 3.9% annually on average across the sampled shops and CSAs. During the pre-crisis period (2004-2008) the annual growth was higher (5.8%) than during the crisis period since 2008 (2%).

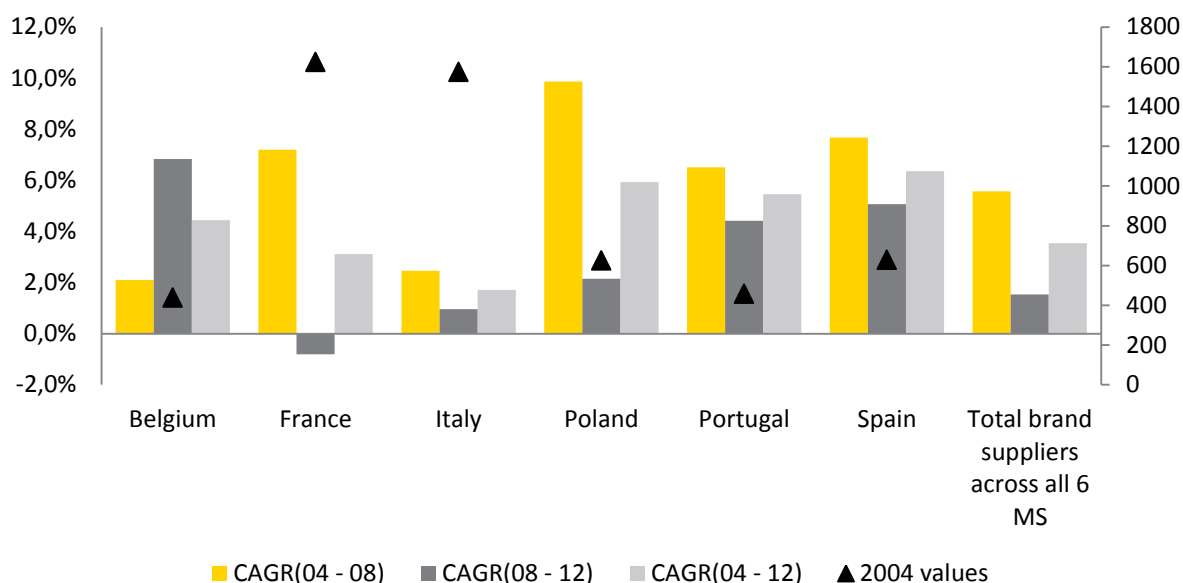
More than for other choice measures, differences among CSAs were noticed: less prosperous predominantly rural areas experienced the lowest growth in the number of suppliers available (0.4%) whereas predominantly urban areas with medium range of GDP experienced the highest growth.

Figure 36: Number of suppliers by CSA type and GDP range (local level) – average CAGR across 23 product categories (source: EY analysis based on © Nielsen Opus)



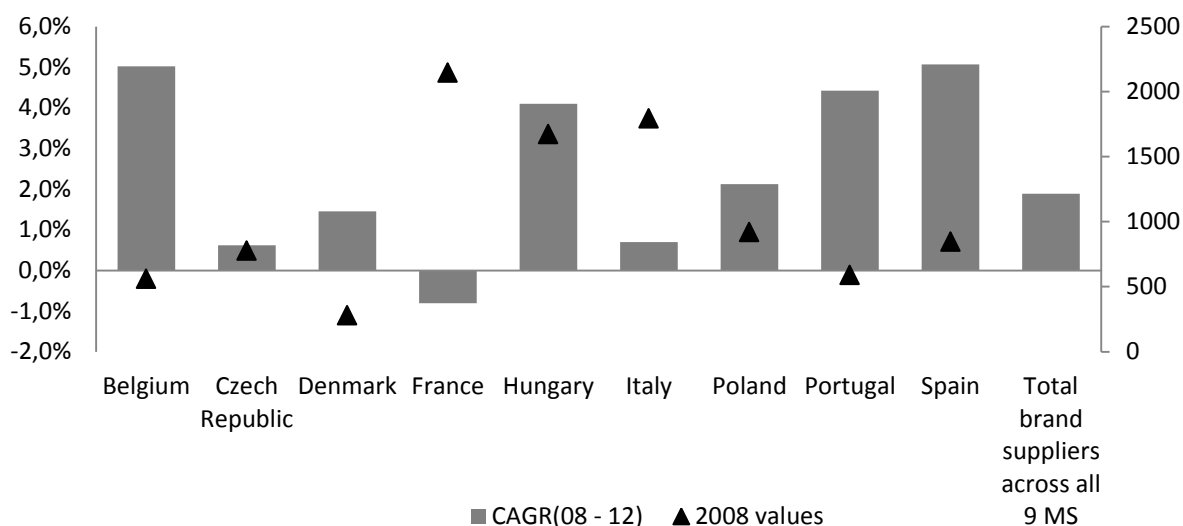
When aggregating the data for the sampled shops by MS, for the 2004-2012 data set as shown in Figure 37 below, choice increased over time in all MS, ranging from 1.7% to 6.4% annual growth over the 2004-2012 period. Similarly to trends observed in other indicators, the trend over the pre-crisis period was more positive (between 2.1% and 9.9%) than that of the crisis period (between -0.8% and 6.8%). The most significant growth was observed in Spain, followed by Poland and Portugal. Italy, on the other hand, registered the lowest growth at 1.7%.

Figure 37: 2004-2012 data set: Total number of suppliers by Member State (local level) – average CAGR across 23 product categories (source: EY analysis based on © Nielsen Opus)



For the 2008-2012 9 MS sample, as shown in Figure 38 below, the growth levels largely reflect observations for the 2004-2012 data set. Spain, Belgium, Portugal and Hungary accounted for the strongest growth, while France contracted. Of the MS not covered in the 2004-2012 data set, Denmark and Czech Republic recorded growth of 1.5% and 0.6% respectively. It is important to note however that the results for these two latter MS are based on a limited number of observations.

Figure 38: 2008-2012 sample: Total number of suppliers by Member State (local level) – average CAGR across 23 product categories (source: EY analysis based on © Nielsen Opus)

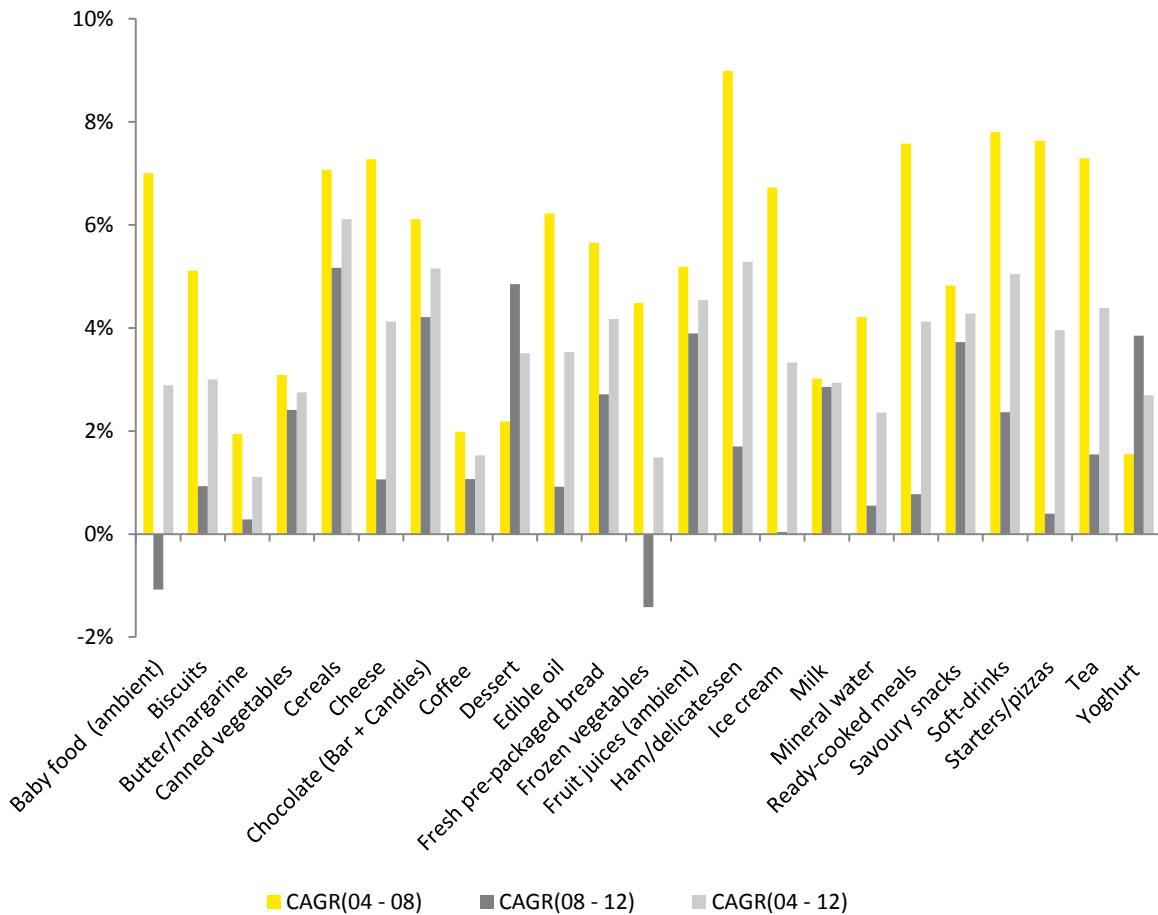


Choice evolutions once again vary to a large extent across the sample product categories, illustrated by figures below.

The 2004-2012 6 MS sample in Figure 39 below shows that 35% of product categories registered greater than 4% compound annual growth over 2004-2012, whilst three

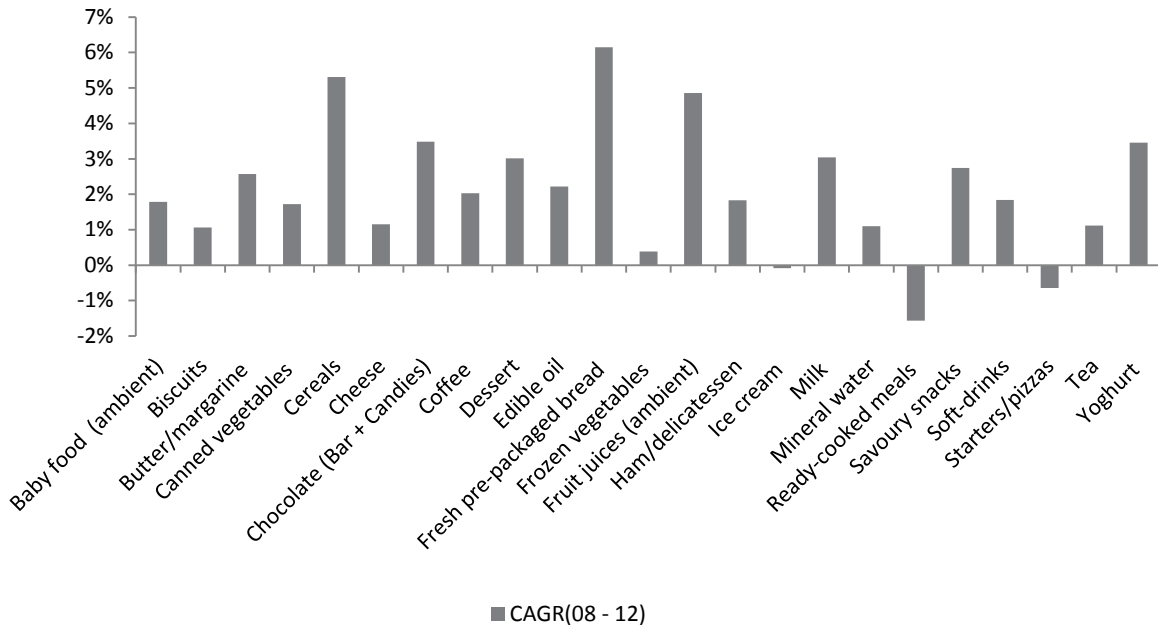
product categories (butter/margarine, coffee, frozen vegetables) saw growth that did not exceed 2%. The figure also demonstrates a more significant positive evolution over the pre-crisis period than the crisis period. The number of suppliers fell in two product categories (frozen vegetables, and baby food) over the crisis period.

Figure 39: 2004-2012 data set: Total number of suppliers by product category (local level) – average CAGR across 6 MS sample (source: EY analysis based on © Nielsen Opus)



In the 2008-2012 9 MS sample in Figure 40 below, three product categories (cereals, fresh pre-packaged bread, and fruit juices) saw greater than 5% annual growth from 2008-2012. Three product categories registered a contraction in choice (ready-cooked meals, starters/pizzas and ice cream). Trends across the two samples are generally similar for the majority of product categories, with some exceptions (such as frozen vegetables, and baby food).

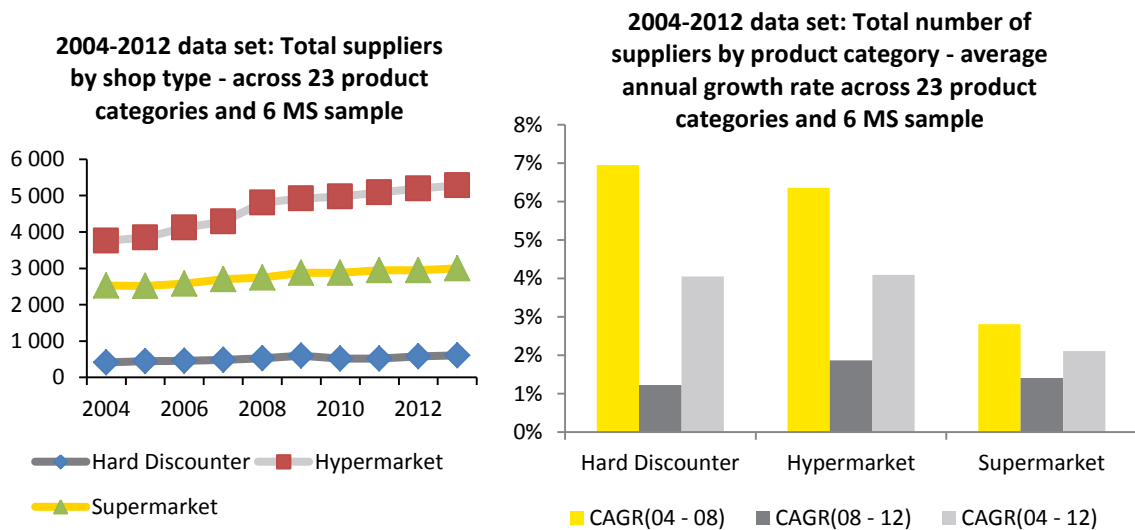
Figure 40: 2008-2012 sample: Total number of suppliers by product category (local level) – average CAGR across 9 MS sample (source: EY analysis based on © Nielsen Opus)



Variations in the choice trend have also been observed across the three shop types.

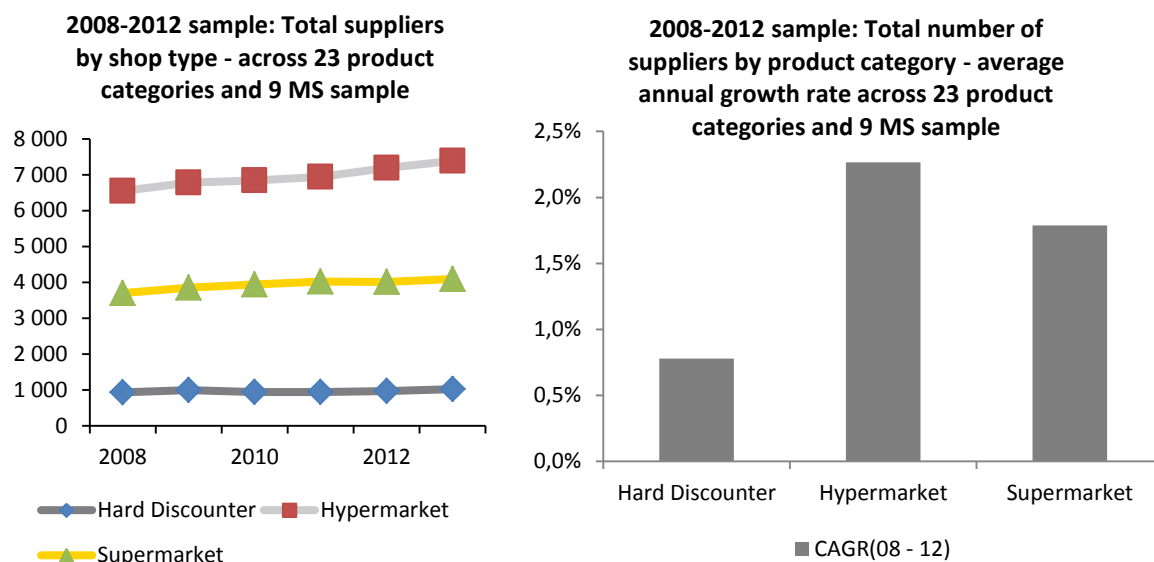
When looking at the 2004-2012 6 MS sample, as shown in Figure 41 below, choice grew differently across the shop types. During the pre-crisis period, choice in discount stores grew at the fastest annual rate, followed closely by hypermarkets, with supermarkets the lowest. During the crisis period, the annual growth for discount stores and hypermarkets slowed significantly, and for supermarkets annual growth levels halved.

Figure 41: 2004-2012 data set: Total number of suppliers by shop type (local level) (source: EY analysis based on © Nielsen Opus)



These trends differ across shop types when looking at the 2008-2012 9 MS sample. As can be seen in Figure 42 below, during the crisis period the growth for discount stores was much lower than for hypermarkets and supermarkets, with hypermarkets registering the highest growth rate.

Figure 42: 2008-2012 sample: Total number of suppliers by shop type (local level)
(source: EY analysis based on © Nielsen Opus)



Choice in price per product category

The variety of different prices within a given product category provides an additional indicator of choice per product category. Unlike the other components of choice, the overall evolution is negative. It is important, however, to emphasise that product price data in © Nielsen Opus has been found to be inconsistent in terms of units and currency across shops and time periods. Nielsen has confirmed this observation. As a result, the findings below should be considered with caution.

Across all shop types, choice in price increased in the pre-crisis period, but contracted to a greater extent in the crisis period, resulting in a decline in the spread of prices over the period 2004-2012. The decline during the crisis period has been confirmed through the results for the 2008-2012 sample.

When aggregating data for the sampled shops by Member States, during the pre-crisis period, spread of prices increased most notably in Spain and Italy, and slightly in Portugal and France. On the other hand, the spread decreased most notably in Belgium, and to a lesser extent in Poland. During the crisis period, the spread of prices was steady or decreased in all but one MS, Czech Republic, where it grew annually by 1.2%.

Results vary across the different shop types:

- For discount stores, in terms of the 2004-2012 data set covering 6 MS, the spread of prices has grown in discount stores particularly over the 2008-2012 period. This trend is particularly due to growth observed in Poland and France, and may be due to the entry into the assortment of national brands at generally higher prices. Similar trends are observed for the 2008-2012 sample covering 9 MS.
- In relation to hypermarkets, the spread of prices contracted slightly over 2004-2012: whilst moderate growth of 3.4% was observed from 2004-2008, a contraction of 3.5% was noted over the 2008-2012 period. Spain and Italy are the MS that experienced the largest growth but also the most significant

contractions. The contraction during the crisis period has been confirmed through the results for the 2008-2012 sample.

- For supermarkets, in terms of the 2004-2012 data set, the opposite trend has been observed, in that the contraction for the pre-crisis period was greater than for the crisis period. Belgium and Spain account for the largest contractions in the pre-crisis period, whilst Belgium contracted the most during the crisis period along with France, Italy and Portugal, which contract by between 1% and 2%.

To assess whether the decrease in price range observed since 2008 was due to any particular identifiable factor, an analysis of the average price for the most common product size per product category per MS was performed.

The way in which the average price across a given product category has evolved over time differs across MS and product categories. The most common trend is an increase in the average price over time, which is logical given retail price inflation, however when looking at individual MS and product categories, several relevant trends become apparent.

In Belgium and Poland, 16 of 23 product categories experienced an observable increase in average prices for the most common package size within the given product category, whilst no product categories (all sizes included) saw an observable increase. The remaining 7 product categories showed no obvious trend.

In France, 13 of 23 product categories experienced an observable increase in average prices for the most common package size within the given product category, whilst the average price of desserts and ice cream was lower in 2012 compared to 2004.

On the other hand in Spain and Portugal, only 9 of 23 product categories experienced an observable increase in average prices over time. In addition, in Spain there were 5 of 23 categories (cereals, cheese, chocolate, fresh pre-packaged bread, and yoghurt) where prices remained relatively stable over the 2004-2012 period; whilst in Portugal, there were 5 of 23 product categories (butter/margarine, edible oil, fresh pre-packaged bread, tea and yoghurt) where the average price increased steadily until 2008, and then in 2010 and 2012 stabilised or decreased.

Finally, in Italy a range of situations was encountered: average prices increased for 10 of 23 product categories, increased between 2004 and 2008 then subsequently stabilised or decreased since 2010 for 4 of 23 product categories (edible oil, ice cream, mineral water and starters/pizzas), whilst decreased for baby food.

Therefore, **no conclusions can be drawn on the overall direction of the price range contraction.**

5.3. Question 2: How has innovation in the EU food sector evolved over time and across MS?

5.3.1. Introduction

This section illustrates the results of analysis of innovation across the selected sample of shops and consuming shopping areas in the EU.

5.3.2. Summary of findings

The growth in innovation for consumers, on the whole, has slowed over the past decade in the EU. The trend was positive pre-crisis between 2006 and 2008, but reversed during the crisis period (2008-2012). The fastest growth in the pre-crisis period was observed in discount stores and hypermarkets, whilst the innovation trend in supermarkets was stable. Between 2008 and 2012, the growth trend slowed in discount stores, and the number in innovations fell in both hypermarkets and supermarkets.

In terms of the trends in the types of innovative products on offer, over the 2004-2012 period there has been an increasing trend towards new packaging and away from new varieties and range extension products in France, Spain, Portugal and Italy. On average across all MS in the sample, new packaging innovations represent approximately 30% of total innovations in 2012 compared to approximately 6% in 2004. This compares to new varieties and range extensions, whose share has decreased from 40% in 2004 to 30% in 2012.

However the trend towards increased new packaging innovations as a proportion of the total was not observed in Poland, Hungary, Belgium, Czech Republic and Denmark, where new product innovations have accounted for a growing proportion of total innovations over time. It is important to note however that these results are based on a limited number of observations.

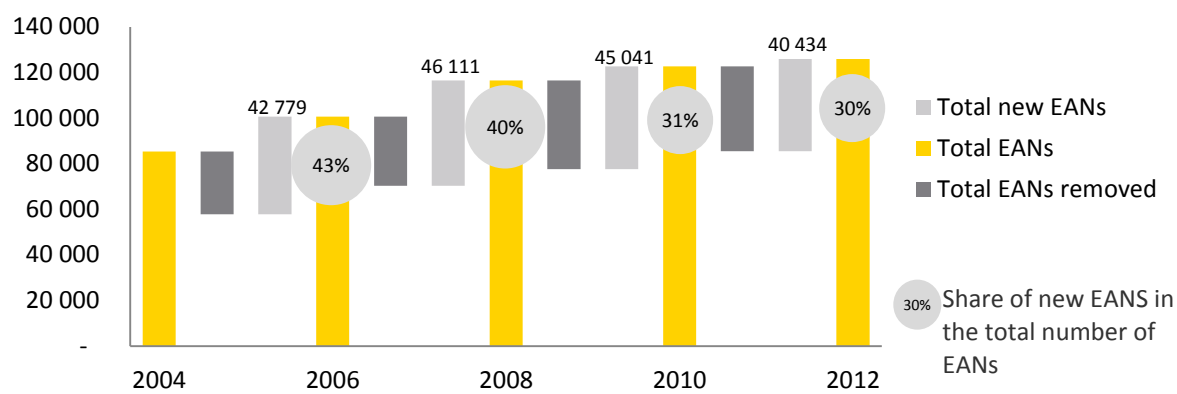
The innovation trends corresponding to each of the categories are developed in the sections below.

5.3.3. Findings by component of innovation

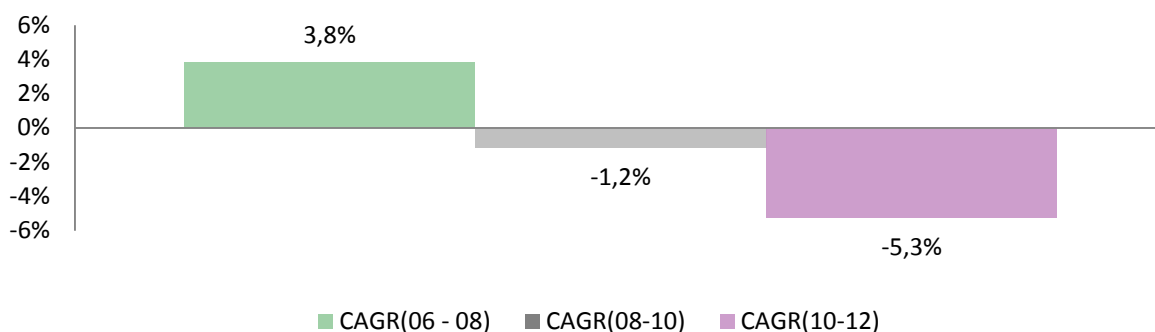
Overall number of innovations

The growth rate of the number of innovations (new EANs) has slowed over the past decade, when analysing the two sets of data (2004-2012 and 2008-2012). As shown in Figure 43 below, innovation increased between 2006 and 2008 (46,111 innovations in 2008 compared to 42,779 innovations in 2006), but declined between 2008 and 2010 (45,014 innovations in 2010), as well as 2010 and 2012 (40,434 innovations in 2012). Therefore, whilst innovations are still being offered to consumers, their number is declining, and represents a lower proportion of the overall number of products available (figures in the circles).

Figure 43: 2004-2012 data set: Evolution of number of EAN codes (local level) – across 23 product categories and 6 MS sample (source: EY analysis based on © Nielsen Opus)

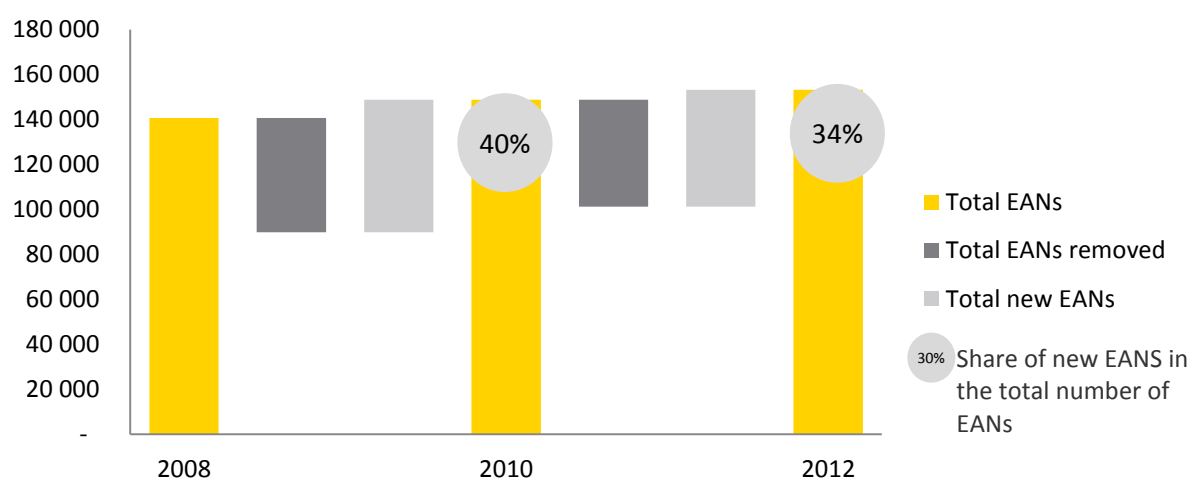


Annual growth in the number of new EANs



In the 2008-2012 period in the 9 MS sample, as shown in Figure 44 below, there were 58,824 innovations in 2010 compared to 52,005 in 2012.

Figure 44: 2008-2012 sample: Evolution of number of EAN codes (local level) – across 23 product categories and 9 MS sample (source: EY analysis based on © Nielsen Opus)



The experience with regard to the number of new EAN products made available in shops varied across different types of CSA. The strongest growth in the pre-crisis period was in more prosperous rural areas, prosperous predominantly rural areas and less prosperous urban areas; during the crisis, the number of innovations only increased in less prosperous urban areas..

Figure 45 : 2004-2012 data set: total number new EAN codes by CSA type and GDP range (local level) (source: EY analysis based on © Nielsen Opus)

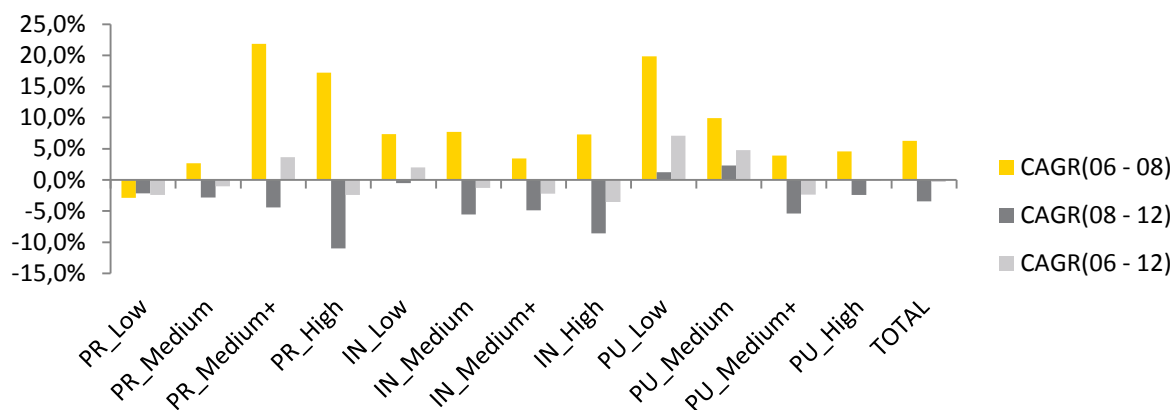
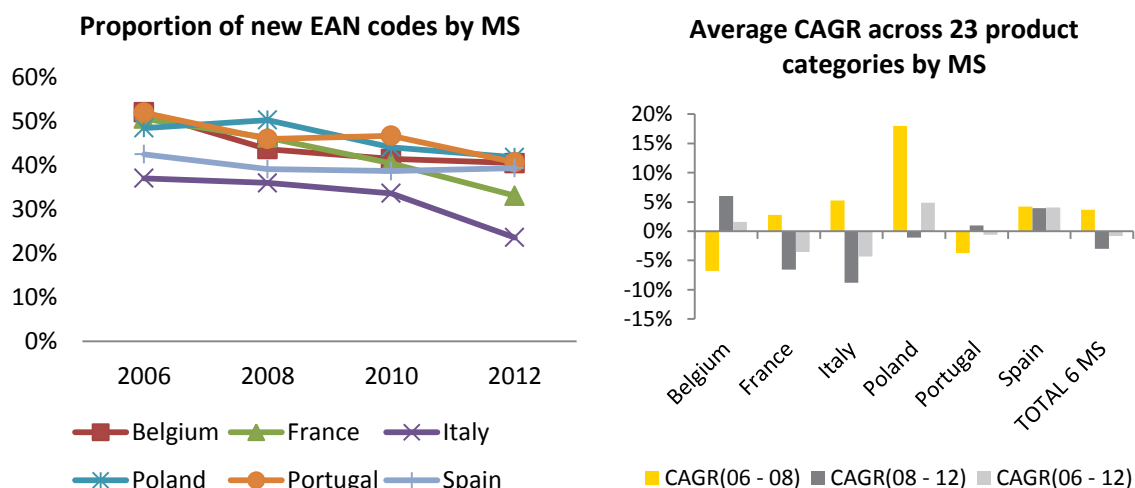


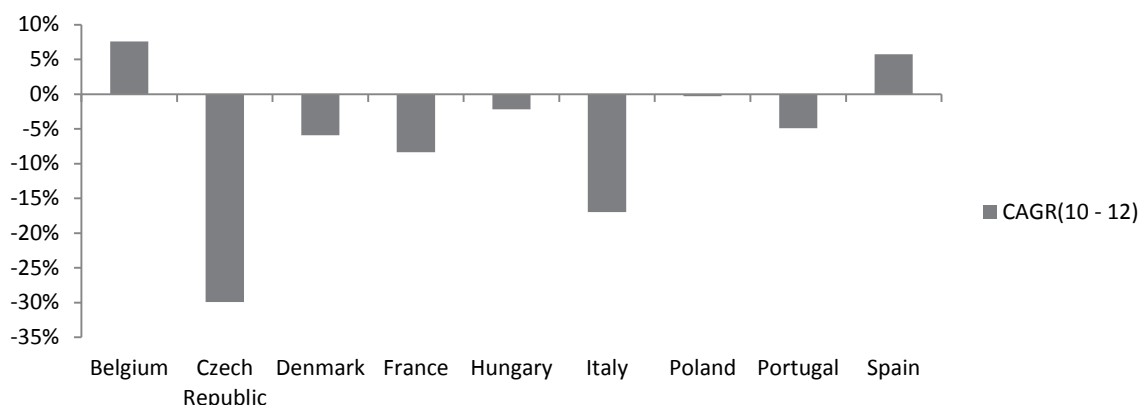
Figure 46 and Figure 47 below confirm that, in spite of a general increase of EAN codes in CSAs of each MS, the share of innovative products tended to decrease. For the 2004-2012 6 MS sample below, the proportion of innovations (new EAN codes) dropped from 47% to 36% of total EAN products in average. In terms of CAGR over the period, growth in innovation has been positive over 2006-2012 in Poland, Spain, and to a lesser extent in Belgium; whereas the number of innovations fell in Italy and France, and to a lesser extent in Portugal.

Figure 46: 2004-2012 data set: Evolution of innovations (new EAN codes) by MS (local level) – average CAGR across 23 product categories (source: EY analysis based on © Nielsen Opus)



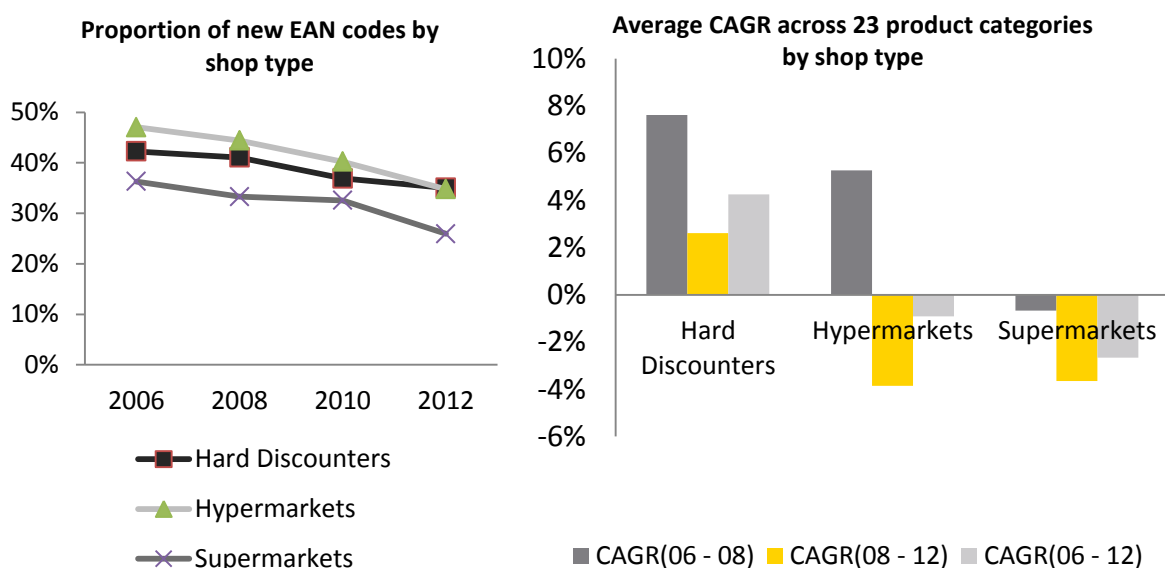
For the 2008-2012 9 MS sample below, the crisis period is highlighted. Only Belgium registered positive growth from 2010 to 2012. On the other hand, Czech Republic and Italy recorded notable negative growth in innovations. It is important to note however that results for Belgium and Czech Republic are based on a limited number of observations.

Figure 47: 2008-2012 data set: Total number of innovations (new EAN codes) by MS (local level) – average CAGR across 23 product categories (source: EY analysis based on © Nielsen Opus)



Variations in the innovation trend have also been observed across the three shop types. In all types of shops, proportion of innovation (new EAN codes) fell over the period 2006-2012 from 42% to 32% of all EAN codes (in average) in a context of increasing number of overall EAN codes. When looking at the CAGR, in discount stores, innovations grew throughout 2006-2012 (+4.3%), however growth slowed between 2008 and 2012 (+2.6%). For supermarkets, the number of innovations fell over 2006-2012 (-2.7%), modestly over 2006-2008 (-0.7%) but more significantly over 2008-2012 (-3.6%). Finally for hypermarkets, despite growth from 2006 to 2008, the overall trend from 2006 to 2012 is a slight contraction of -0.7% annual growth. These trends can be observed in Figure 48 and Figure 49 below representing the 2004-2012 6MS sample– the same trend was observed for the 2008-2012 9 MS sample.

Figure 48: 2008-2012 data set: Evolution of innovations (new EAN codes) by shop type (local level) –6 MS sample (source: EY analysis based on © Nielsen Opus)



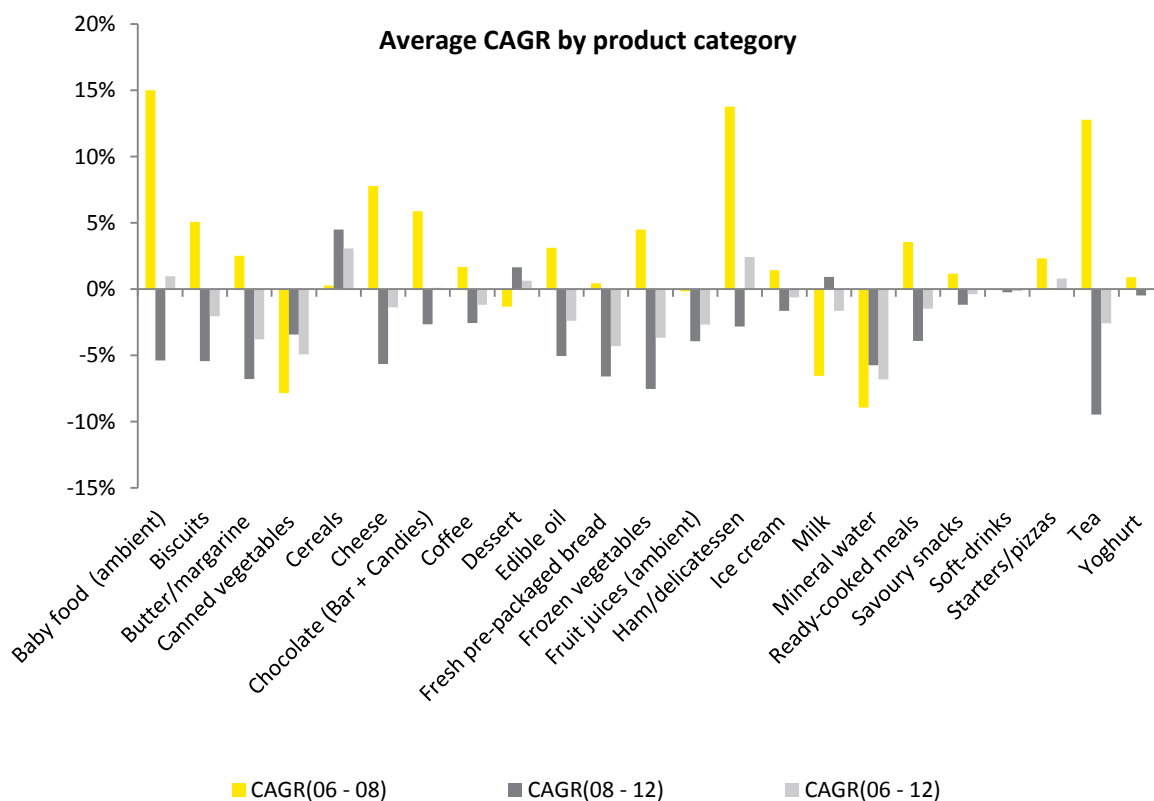
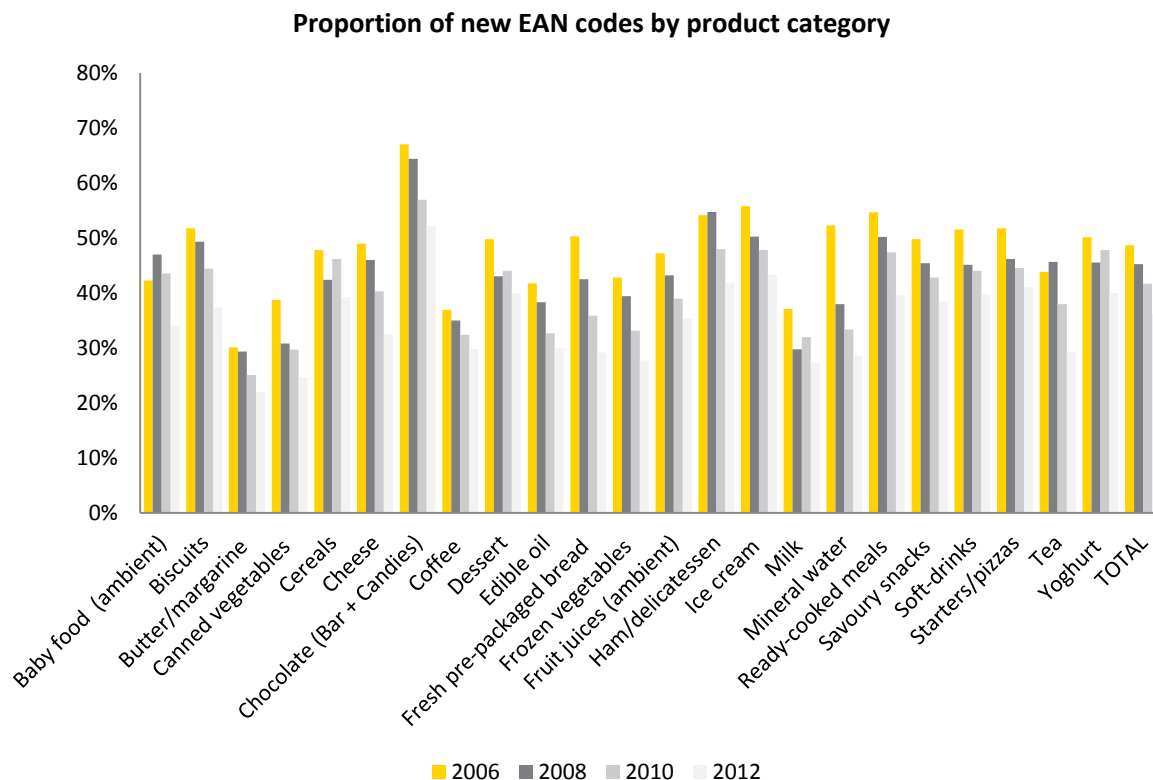
Number of innovations per product category

The proportion of innovations in total number of products tends to decrease over the period for all categories of products, falling from 48 to 35% of the total number of EAN codes available in average across all product categories between 2006 and 2012.

In terms of CAGR over the period, evolutions vary significantly across the sample product categories, illustrated by figures below.

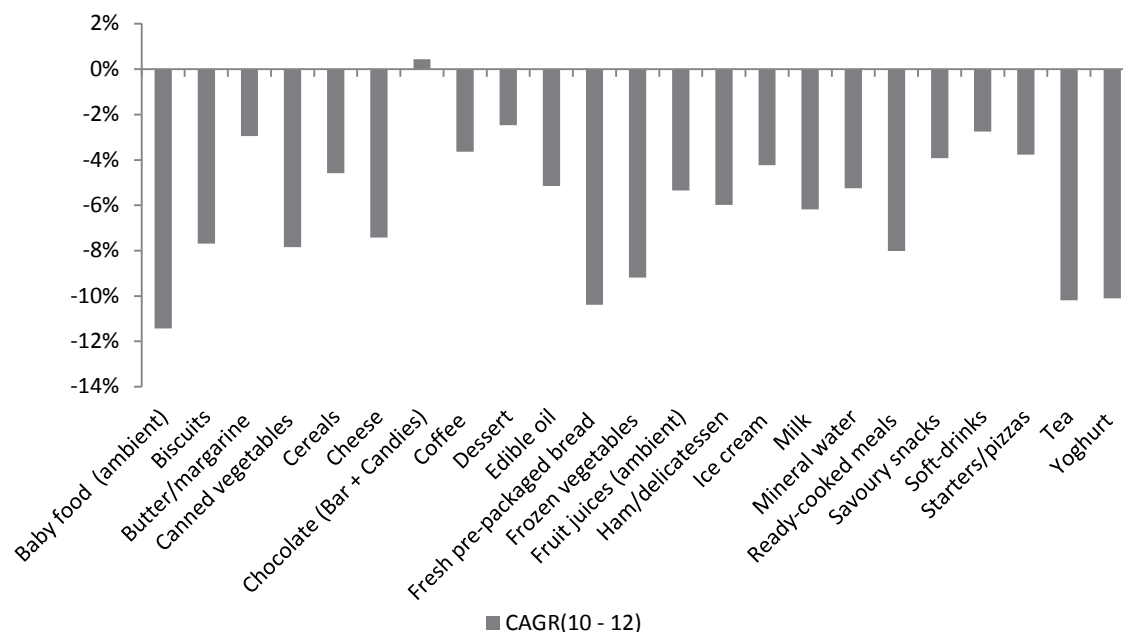
In the 2006-2012 sample, as shown in Figure 49 below, only three product categories (baby food, cereals, ham/delicatessen) registered notable positive annual growth over the period, another three (chocolate, soft drinks, yoghurt) were stable, and the remainder registered negative annual growth over this period. The categories where the growth in new products contracted the most are mineral water (-6.8%), canned vegetables (-4.9%) and fresh pre-packaged bread (-4.3%).

Figure 49: 2006-2012 sample: Evolution of innovations (new EAN codes) by product category (local level) –across 6 MS sample (source: EY analysis based on © Nielsen Opus)



The 2008-2012 9 MS sample in the figure below confirms the recent negative trend. All but one product category (chocolate) saw negative growth over 2008-2012, the most significant being baby food, fresh pre-packaged bread, tea and yoghurt.

Figure 50: 2008-2012 data set: Total number of innovations (new EAN codes) by product category (local level) – average CAGR across 9 MS sample (source: EY analysis based on © Nielsen Opus)



Overall evolution by type of innovation

Trends have been observed in the evolution of the different types of innovation. On the whole, there has been a trend toward more new packaging, and away from new varieties and range extensions particularly in France, Spain, Portugal and Italy. On the other hand, new product innovations account for an increasing share over time in CSAs in Poland, Hungary, Belgium, Czech Republic and Denmark⁶⁸. In most recent years, there has also been an increase in relaunches compared to other types of innovations. These trends have been generally observed across all shop types and are illustrated in Figure 52 and Figure 53 below. Although new packaging used to represent a small proportion of the overall number of innovation (less than 5% in 2004), it represents the majority of innovations in our sample in 2012.

⁶⁸ Although these results are based on a limited number of observations

Figure 51 : 2004-2012 data set: Proportion of types of innovations by MS (local level)
 (source: EY analysis based on © Mintel GNPD and © Nielsen Opus)

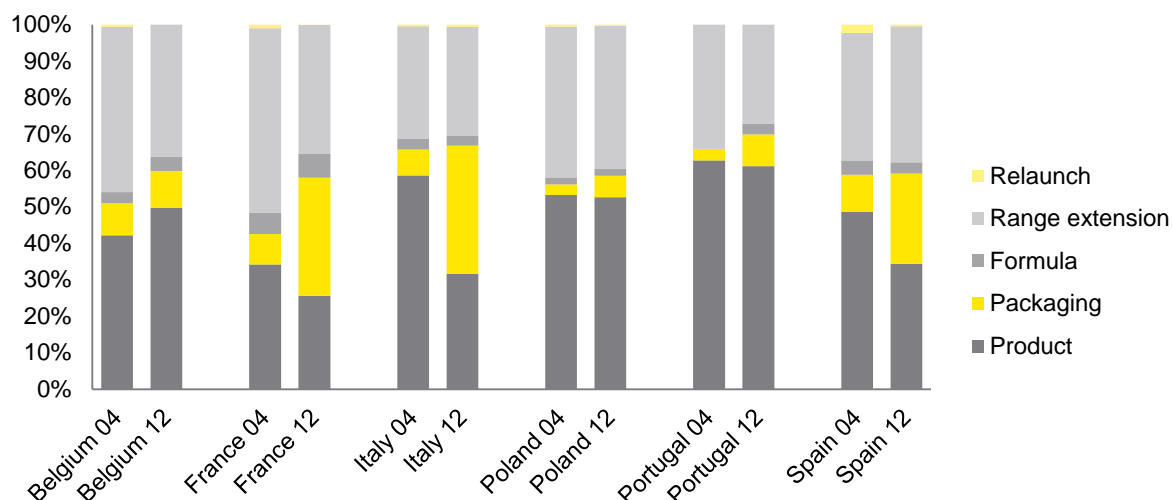


Figure 52: 2004-2012 data set: Proportion of types of innovations by shop type (local level) – average % across 6 MS sample
 (source: EY analysis based on © Mintel GNPD and © Nielsen Opus)

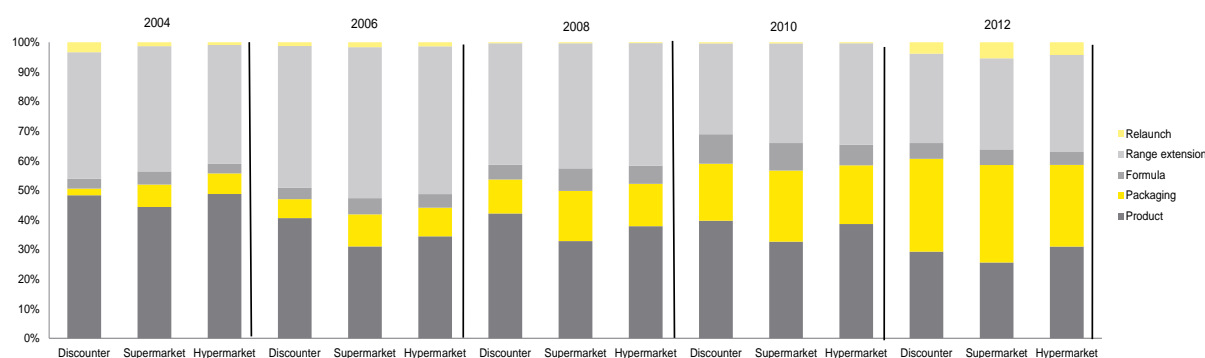
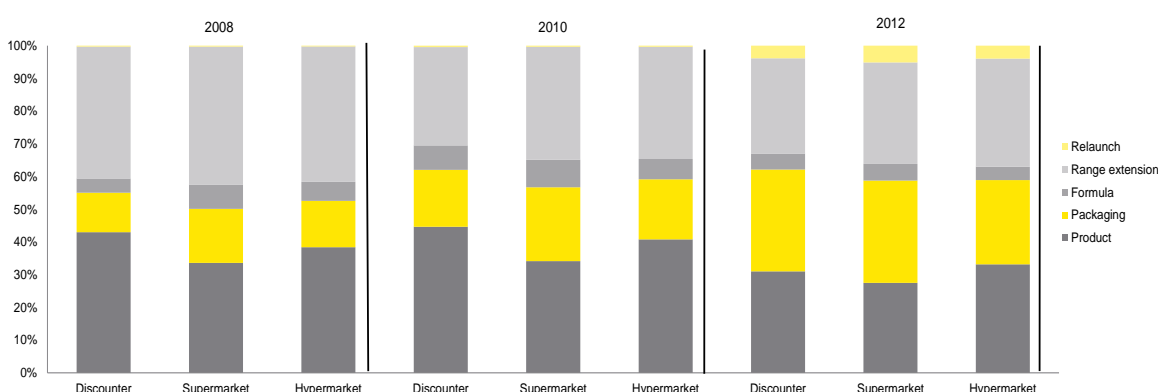


Figure 53: 2008-2012 data set: Proportion of types of innovations by shop type (local level) – average % across 9 MS sample
 (source: EY analysis based on © Mintel GNPD and © Nielsen Opus)



Type of innovation per product category

Evolutions in the types of innovation are heavily dependent on the product category in question. Below an illustrative sample of product categories are presented to demonstrate the trends in each innovation type.

There has been a declining trend in innovations classified as new products from 2004 to 2012; it has gone from the most common innovation type in 2004 to second place (after range extension) in 2012. Cereals and cheese are two representative examples of this trend, as illustrated below. In both examples, new packaging has increased its share.

Figure 54: 2004-2012 data set: Proportion of innovations by type for cereals (local level) – average % across 6 MS sample (source: EY analysis based on © Mintel GNPD and ©Nielsen Opus)

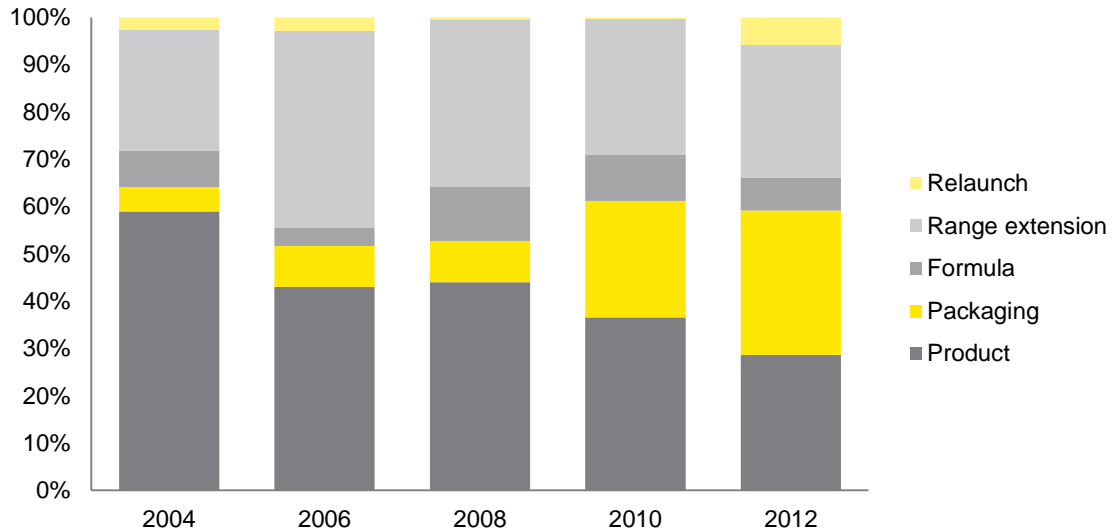
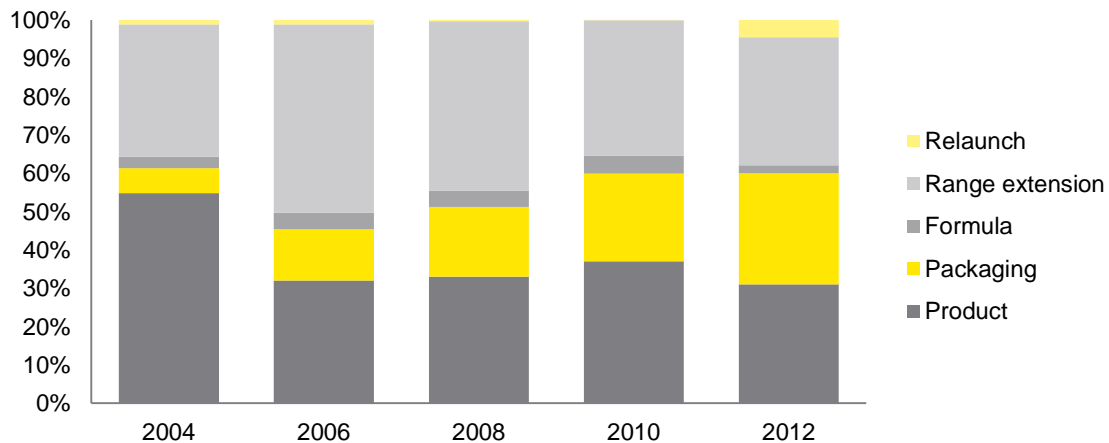
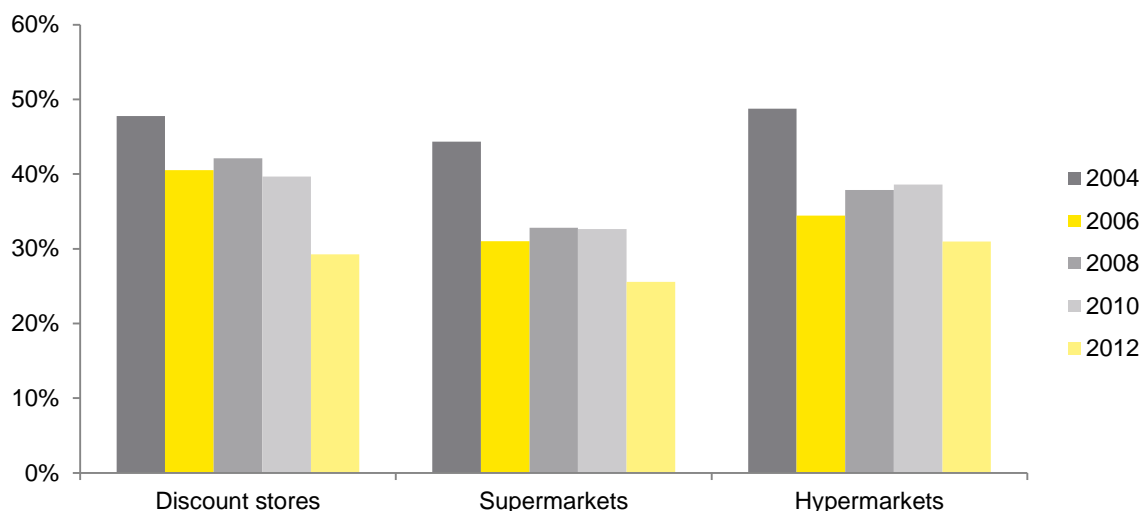


Figure 55: 2004-2012 data set: Proportion of innovations by type for cheese (local level) – average % across 6 MS sample (source: EY analysis based on © Mintel GNPD and ©Nielsen Opus)



Innovations classified as new products have become less common across all shop types. In 2012, new products as a proportion of total innovations were highest in hypermarkets, followed by discount stores. Very similar trends were observed in the results of the 2008-2012 9 MS sample.

Figure 56: 2004-2012 data set: Proportion of innovations classified as “new products” by © Mintel GNPD (local level) – average % across 23 product categories and 6 MS sample (source: EY analysis based on © Mintel GNPD and © Nielsen Opus)



New variety/range extensions increased in terms of total innovations from 2004 to 2006, but between 2006 and 2012 lost share to below 2004 levels. Nevertheless it has gone from the second most common type of innovation in 2004 to the most common in 2012. The increase from 2004 to 2006 is best represented by canned vegetables, whilst the loss in share in more recent years is illustrated by chocolate.

Figure 57: 2004-2012 data set: Proportion of innovations by type for canned vegetables (local level) – average % across 6 MS sample (source: EY analysis based on © Mintel GNPD and © Nielsen Opus)

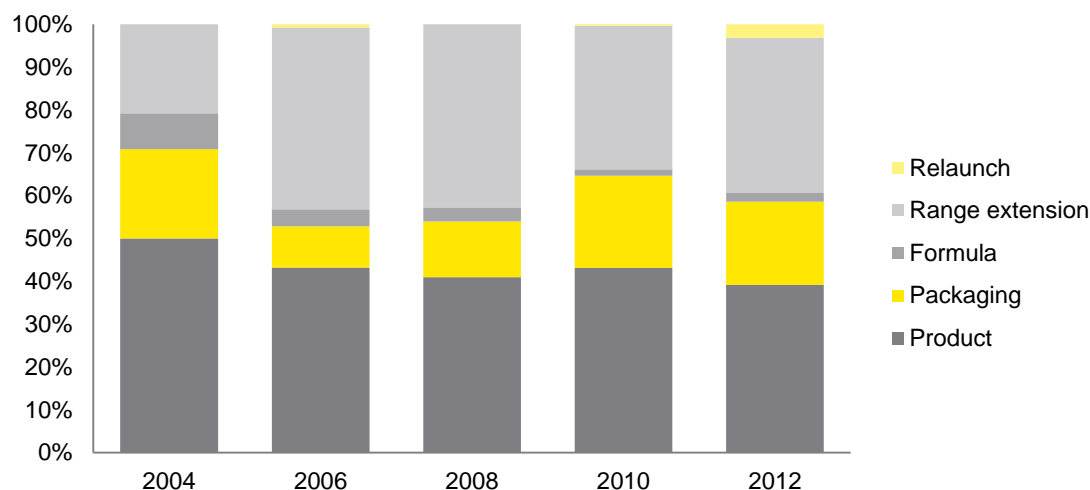
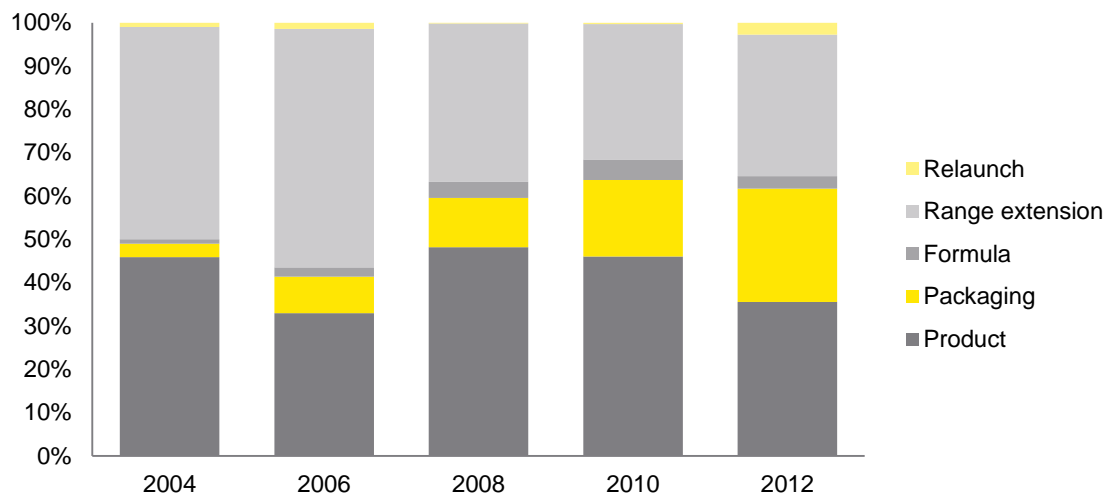
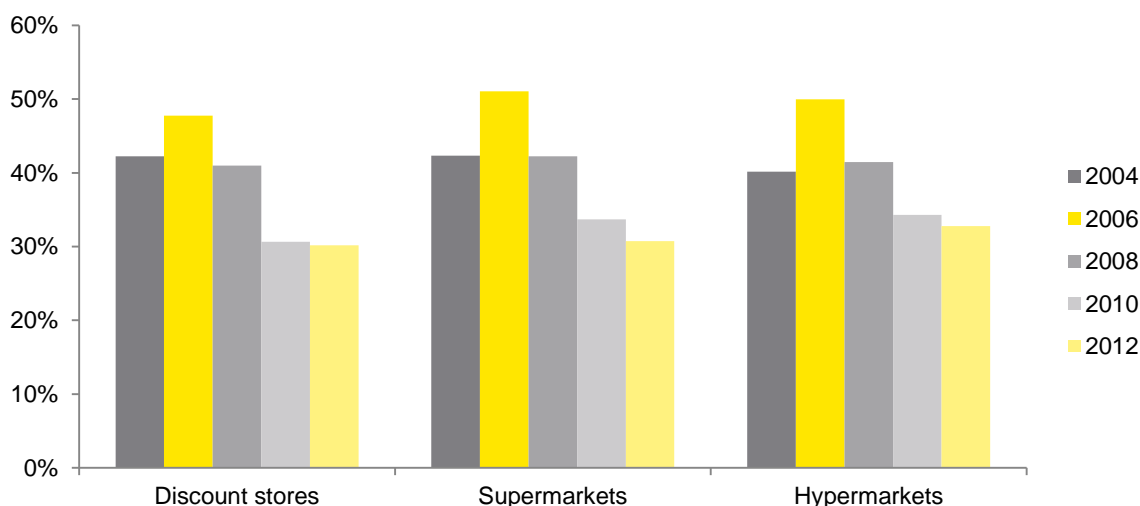


Figure 58: 2004-2012 data set: Proportion of innovations by type for chocolate (local level) – average % across 6 MS sample (source: EY analysis based on © Mintel GNPD and © Nielsen Opus)



Innovations classified as new variety/range extensions have followed a simple trend across all shop types. In 2004, they accounted for between 40% and 43% of innovations across the three shop types, but by 2012, the proportion has reduced to between 30% and 35%. In 2012, the proportion of new variety/range extensions is highest in hypermarkets. Very similar trends were observed in the results of the 2008-2012 9 MS sample.

Figure 59: 2004-2012 data set: Proportion of innovations classified as “new variety/range extension” by © Mintel GNPD (local level) – average % across 23 product categories and 6 MS sample (source: EY analysis based on © Mintel GNPD and © Nielsen Opus)



New packaging has grown the most relative to other innovations, and is the third most common type of innovation (after new variety/range extension and new product). Its noticeable growth has best been exemplified by mineral water and edible oil, as illustrated in Figure 60 below.

Figure 60: 2004-2012 data set: Proportion of innovations by type for mineral water (local level) – average % across 6 MS sample (source: EY analysis based on © Mintel GNPD and © Nielsen Opus)

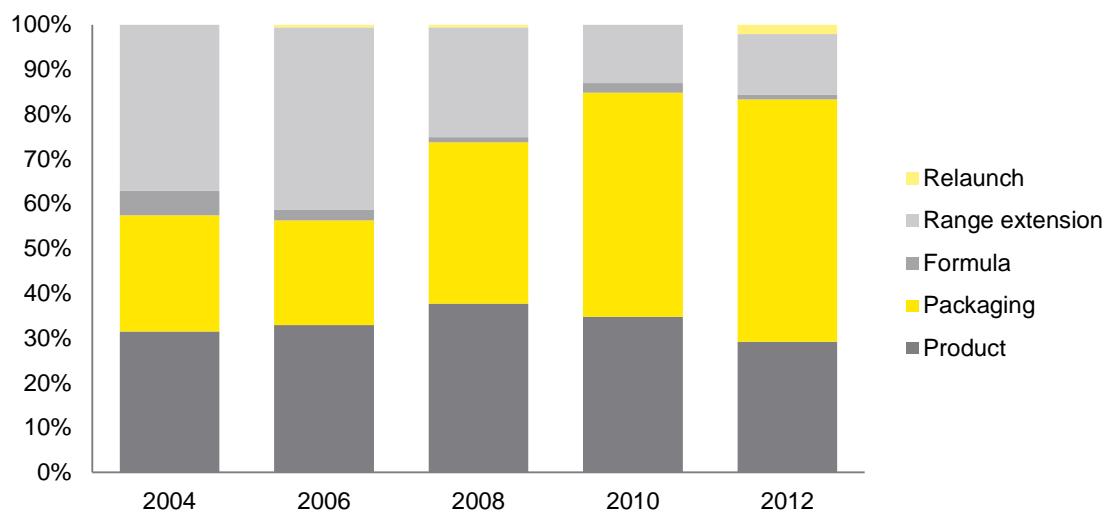
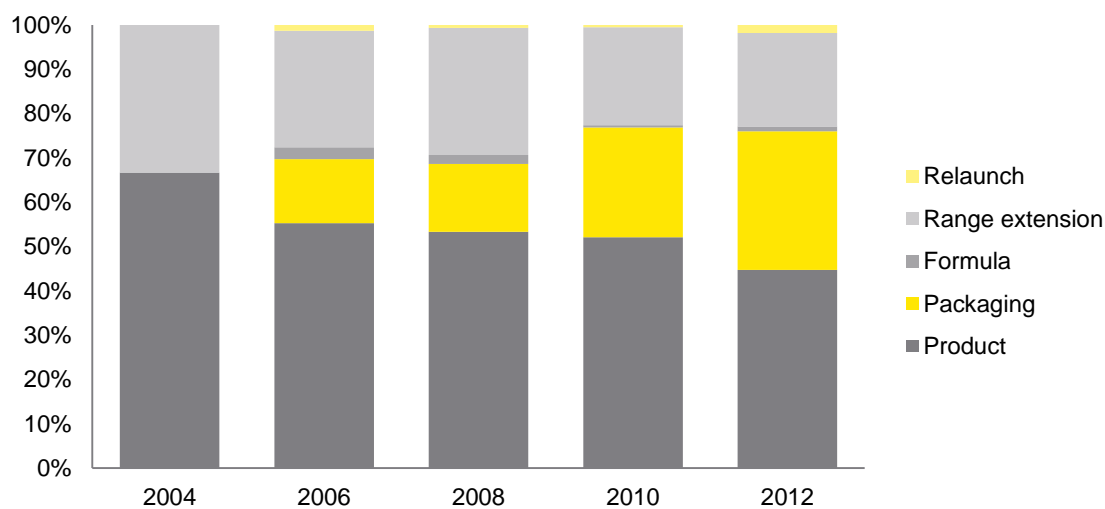
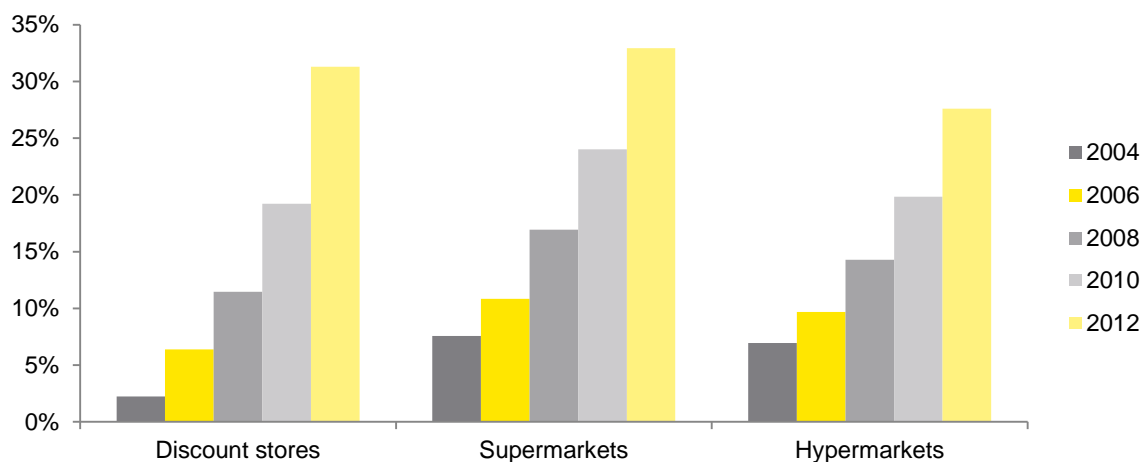


Figure 61: 2004-2012 data set: Proportion of innovations by type for edible oil (local level) – average % across 6 MS sample (source: EY analysis based on © Mintel GNPD and © Nielsen Opus)



Innovations classified as new packaging have become more common across all shop types. The increase has been most noticeable in discount stores, followed by supermarkets. In 2012, new packaging as a proportion of total innovations was highest in supermarket, followed by discount stores. The same trends were observed in the results of the 2008-2012 9 MS sample.

Figure 62: 2004-2012 data set: Proportion of innovations classified as “new packaging” by © Mintel GNPD (local level) – average % across 23 product categories and 6 MS sample (source: EY analysis based on © Mintel GNPD and © Nielsen Opus)



New formulations account for a very small proportion of innovations, and despite increasing their share from 2004 to 2010, this trend has been reversed from 2010 to 2012. This type of innovation has been most common in ready cooked meals and starters/pizzas.

Figure 63: 2004-2012 data set: Proportion of innovations by type for ready-cooked meals (local level) – average % across 6 MS sample (source: EY analysis based on © Mintel GNPD and © Nielsen Opus)

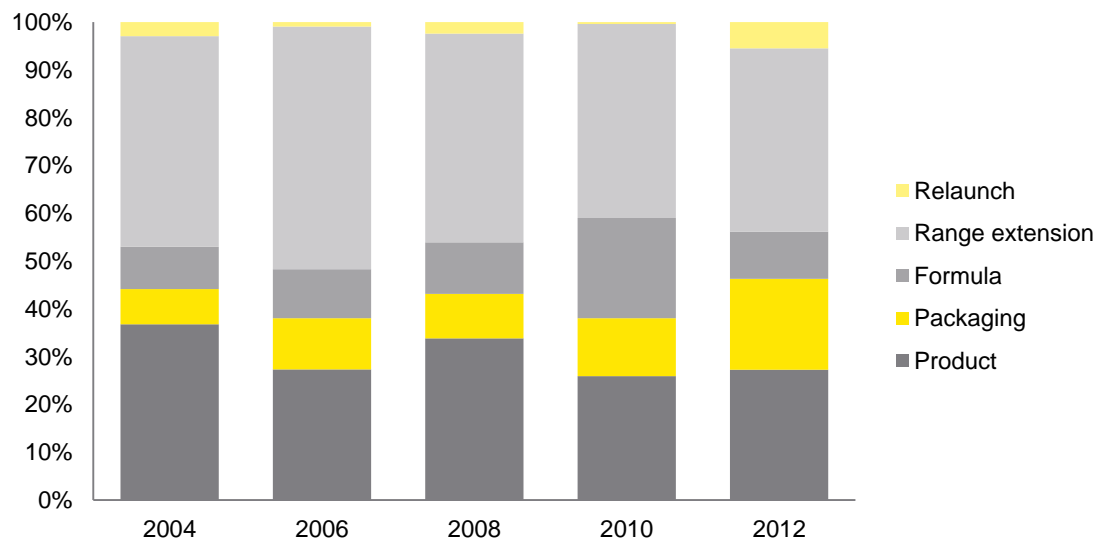
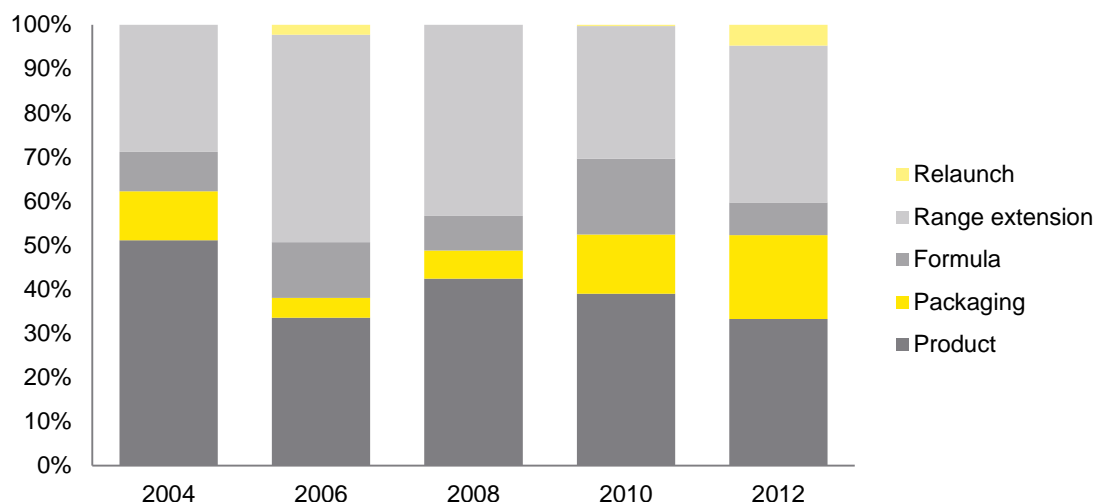
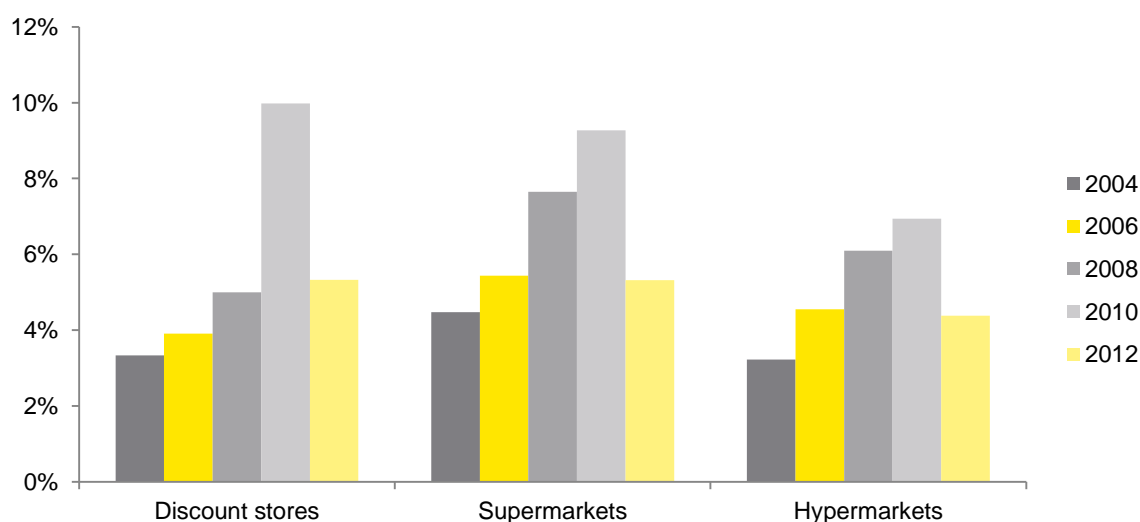


Figure 64: 2004-2012 data set: Proportion of innovations by type for starters/pizzas (local level) – average % across 6 MS sample (source: EY analysis based on © Mintel GNPD and © Nielsen Opus)



Innovations classified as new formulations have followed a similar trend across all shop types. The peak in 2010 was most evident in discount stores, and the reversal from 2010 to 2012 of the historical increasing trend was noticed across all shop types. According to the sample, new formulations are generally less common in hypermarkets than in discount stores and supermarkets. Very similar same trends were observed in the results of the 2008-2012 9 MS sample.

Figure 65: 2004-2012 data set: Proportion of innovations classified as “new formulation” by © Mintel GNPD (local level) – average % across 23 product categories and 6 MS sample (source: EY analysis based on © Mintel GNPD and © Nielsen Opus)



Relaunches have been the least common of innovation types but have increased proportionally in most recent years. The particular growth from 2010 to 2012 is most evident in baby food and tea, as illustrated in the Figure 66 and Figure 67 below.

Figure 66: 2004-2012 data set: Proportion of innovations by type for baby food (local level) – average % across 6 MS sample (source: EY analysis based on © Mintel GNPD and © Nielsen Opus)

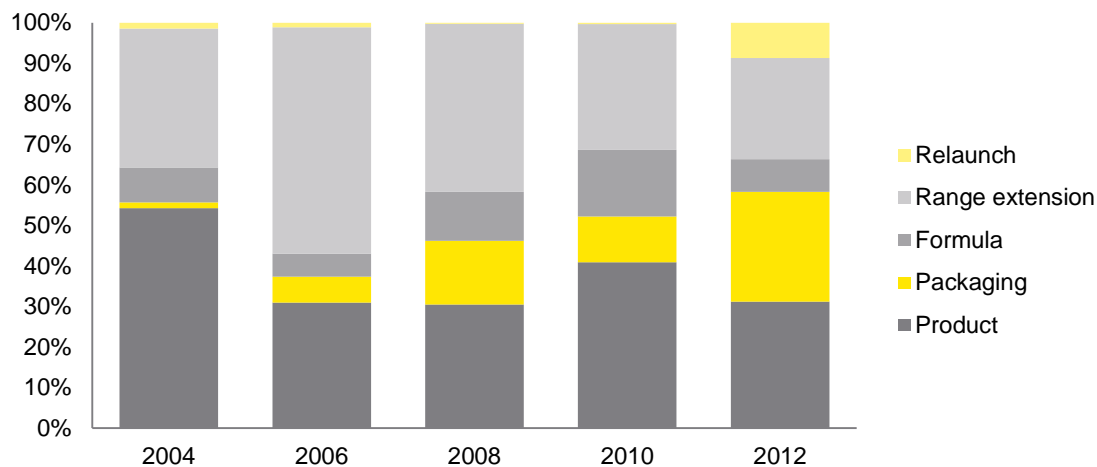
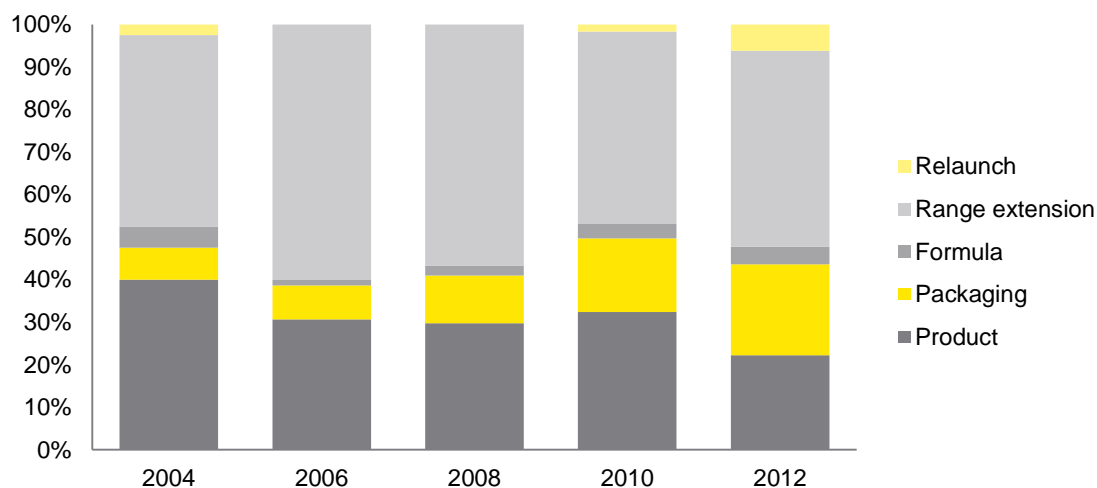
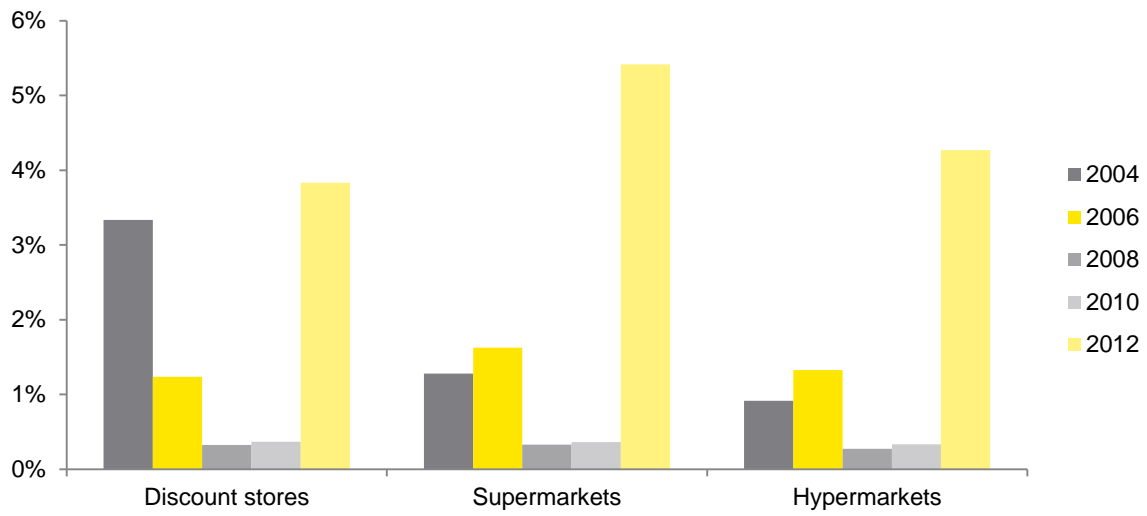


Figure 67: 2004-2012 data set: Proportion of innovations by type for tea (local level) – average % across 6 MS sample (source: EY analysis based on © Mintel GNPD and © Nielsen Opus)



Innovations classified as relaunches followed a relatively similar trend. Discount stores accounted for the majority of the proportion in 2004, whilst supermarkets saw a significant increase in proportion in 2012 from historically low levels. The same trends were observed in the results of the 2008-2012 9 MS sample.

Figure 68: 2004-2012 data set: Proportion of innovations classified as “relaunch” by © Mintel GNPD (local level) – average % across 23 product categories and 6 MS sample (source: EY analysis based on © Mintel GNPD and © Nielsen Opus)



5.4. Question 3: How have the a priori drivers of retail and supplier concentration evolved over time and across MS?

5.4.1. Introduction

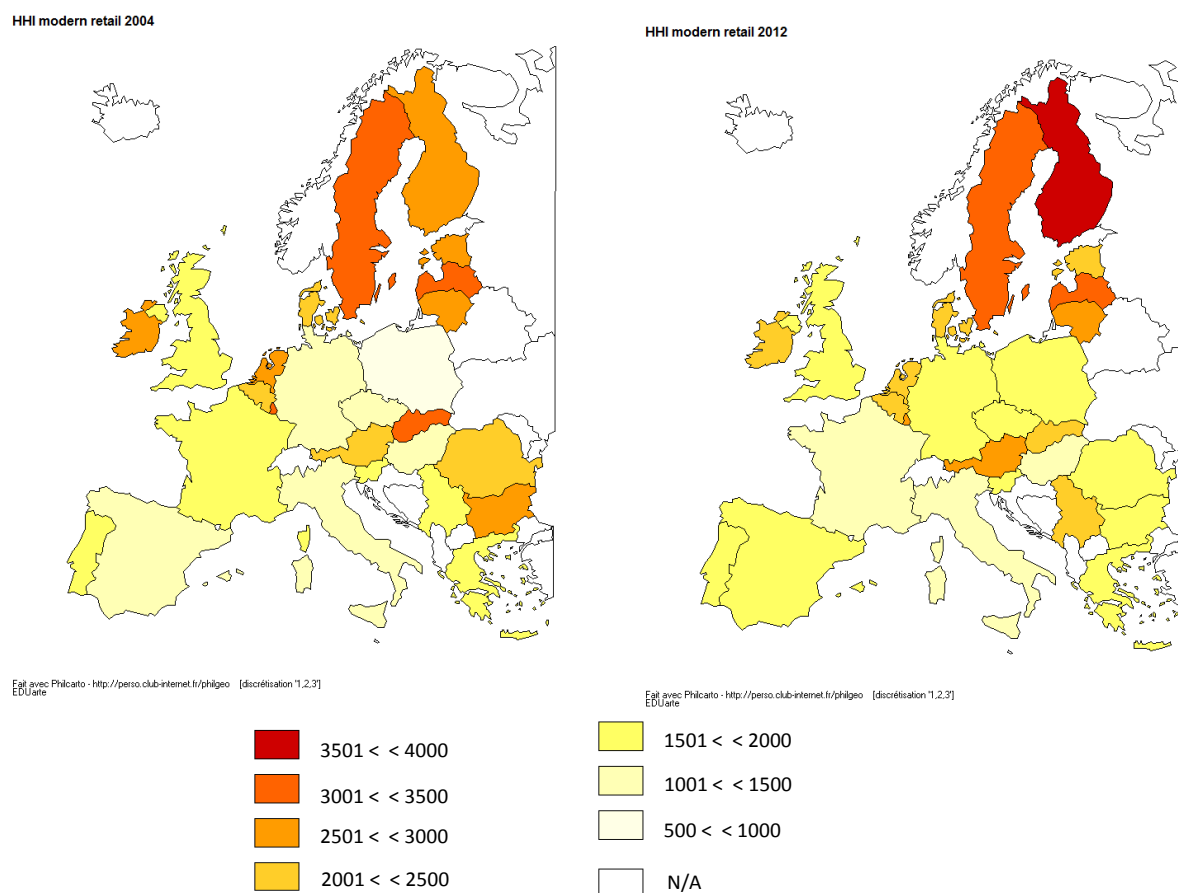
This section illustrates the results of analysis of retail concentration, supplier concentration and the measure of imbalance both at the procurement (national) level and the local CSA level. The procurement level indicator provides an appropriate measure of the interactions between retailers and suppliers at banner and group level. The local level indicator provides an indication of the level of retailer competition within a given CSA.

5.4.2. Retail concentration

Summary of findings

As the figure below illustrates, the evolution of retail concentration, measured by the HHI in modern retail across EU 27 MS between 2004 and 2012 is varied.

Figure 69: comparative map of HHI modern retail across Europe (2004 - 2012)



Source: EY analysis based on © Planet Retail

At national level in terms of sales market share, modern retail concentration decreased annually throughout 2004 to 2012 in 16 of 26 EU MS. This is generally due to the changes in market shares among the main retailers in many Member States, amplified by the growth of retailers who detained a small market share in 2004 or even were not present, like hard discounters.

In the 14 MS sample, retail concentration increased in 7 MS (Finland, Germany, Portugal, United Kingdom, Czech Republic, Spain and Poland) and decreased in 7 MS (Netherlands, Denmark, Belgium, Romania, France, Hungary and Italy).

At local level in terms of retailer share of sales area in the 4 MS sample (France, Italy, Portugal and Spain), retail concentration decreased by -1.1% annually on average over the 2004-2012 period. The decrease was the same for the pre-crisis and crisis periods. This trend was confirmed in the results of the 2008-2012 data set, composed of 6 MS (Belgium and Hungary in addition to the 4 MS sample), where retail concentration fell annually by -1.3%.

Retail concentration at national level: findings by Member States

When considering all EU Member States, the highest concentration levels over the last decade were in Finland (HHI of 3935 in 2012), Latvia (3443 in 2012), Sweden (3305 in 2012) and Cyprus (2878 in 2012, however down from 6530 in 2004); whilst the lowest levels were seen in Italy (1170 in 2012), Hungary (1229 in 2012) and France (1419 in 2012). It is worth noting that the population size of the top 12 MS is lower in general than the MS where retail concentration was at more moderate levels in 2012. As an example, only the Netherlands has a population greater than 10 million inhabitants in this list and the top 5 account for a combined population size of less than 20 million inhabitants.

Notable increases in concentration were seen in Poland (830 in 2004 to 1580 in 2012, CAGR of 8.4%) and Czech Republic (1200 in 2004 to 1780 in 2012); whilst Bulgaria (2940 in 2004 to 1910 in 2012), Cyprus and Slovenia (3180 in 2004 to 2020 in 2012) saw the most notable decreases. These trends are presented in the three figures that follow.

Table 17: Retail group HHI by sales market share, for modern retail only (national level)
(source: EY analysis based on © Planet Retail)

| Member State | 2004 | 2006 | 2008 | 2010 | 2012 | CAGR (04-12) |
|----------------------------|------|------|------|------|------|--------------|
| Finland* | 2881 | 3736 | 3751 | 3862 | 3935 | 4,0% |
| Latvia | 3076 | 3460 | 3590 | 3244 | 3443 | 1,4% |
| Sweden | 3417 | 3261 | 3386 | 3359 | 3305 | -0,4% |
| Cyprus | 6529 | 4049 | 3634 | 3572 | 2879 | -9,7% |
| Luxembourg | 3499 | 3343 | 2998 | 2704 | 2730 | -3,1% |
| Austria | 2261 | 2263 | 2615 | 2598 | 2617 | 1,8% |
| Lithuania | 2795 | 2282 | 2451 | 2525 | 2543 | -1,2% |
| Netherlands* ⁶⁹ | 2972 | 2893 | 2279 | 2043 | 2478 | -2,2% |
| Ireland | 2581 | 2511 | 2451 | 2294 | 2381 | -1,0% |
| Denmark* | 2373 | 2481 | 2458 | 2385 | 2320 | -0,3% |
| Estonia | 2981 | 2522 | 2308 | 2246 | 2225 | -3,6% |
| Slovakia | 1659 | 1772 | 1964 | 2035 | 2127 | 3,2% |
| Belgium* | 2120 | 2060 | 1990 | 2000 | 2020 | -0,6% |
| Slovenia | 3182 | 2838 | 2216 | 2077 | 2015 | -5,6% |
| Germany* | 1384 | 1620 | 1653 | 1927 | 1957 | 4,4% |
| Bulgaria | 2943 | 2047 | 1959 | 1646 | 1907 | -5,3% |
| Portugal* | 1681 | 1652 | 1830 | 1888 | 1901 | 1,5% |
| Romania* | 2302 | 1572 | 1394 | 1361 | 1880 | -2,5% |
| United Kingdom* | 1748 | 1745 | 1793 | 1817 | 1811 | 0,4% |
| Czech Republic* | 1199 | 1387 | 1690 | 1701 | 1779 | 5,1% |
| Spain* | 1334 | 1422 | 1686 | 1735 | 1701 | 3,1% |
| Greece | 1707 | 1648 | 1681 | 1603 | 1682 | -0,2% |
| Poland* | 825 | 926 | 1228 | 1353 | 1580 | 8,4% |
| France* | 1533 | 1528 | 1492 | 1482 | 1410 | -1,0% |
| Hungary* | 1250 | 1243 | 1308 | 1198 | 1229 | -0,2% |
| Italy* | 1299 | 1220 | 1188 | 1192 | 1170 | -1,3% |

*In the 14 MS for which further analyses are conducted, retail concentration is only slightly increasing during the period, pulled by Poland, Germany, Finland and Czech Republic.

⁶⁹ Netherlands encountered major changes in the last ten years: the major retailer market share decreased, another retailer left the national market, and a discounter increased its market share from 2 to 16% when another important stakeholder left the market.

Retail Concentration at local level: general trends

Retail concentration at local level is based on the 4 MS analysis over the 2004-2012 period and completed by the 6 MS analysis over the 2008-2012 period. The results show a relative de-concentration trend of retailer at local level, based on the HHI. Apart from Spain, Belgium, Portugal and to a minor extent Italy, the trends at a local level are similar to those observed at national level.

Retail Concentration at local level: findings by Member State

At local level using © Nielsen Trade Dimensions data, the level and evolution of retail concentration has differed moderately across the sample MS. During the pre-crisis period (sample of 4 MS), the most significant de-concentration was in Portugal (-3.8%), followed by Italy (-1.3%), whilst other MS were relatively stable. By comparison, during the crisis period, the greatest de-concentration was in Belgium (-5.0%), followed by Spain (-2.8%). During the crisis period (6 MS sample), Portugal was the only MS in the sample that became more concentrated (0.5%). In terms of the level of retail concentration, France, Italy and Portugal were consistently the highest over the decade, followed by Belgium, Spain and Hungary.

Figure 70: 2004-2012 data set: Retail concentration HHI per MS by retail group sales area (local level) - 4 MS sample (source: EY analysis based on © Nielsen Trade Dimensions)

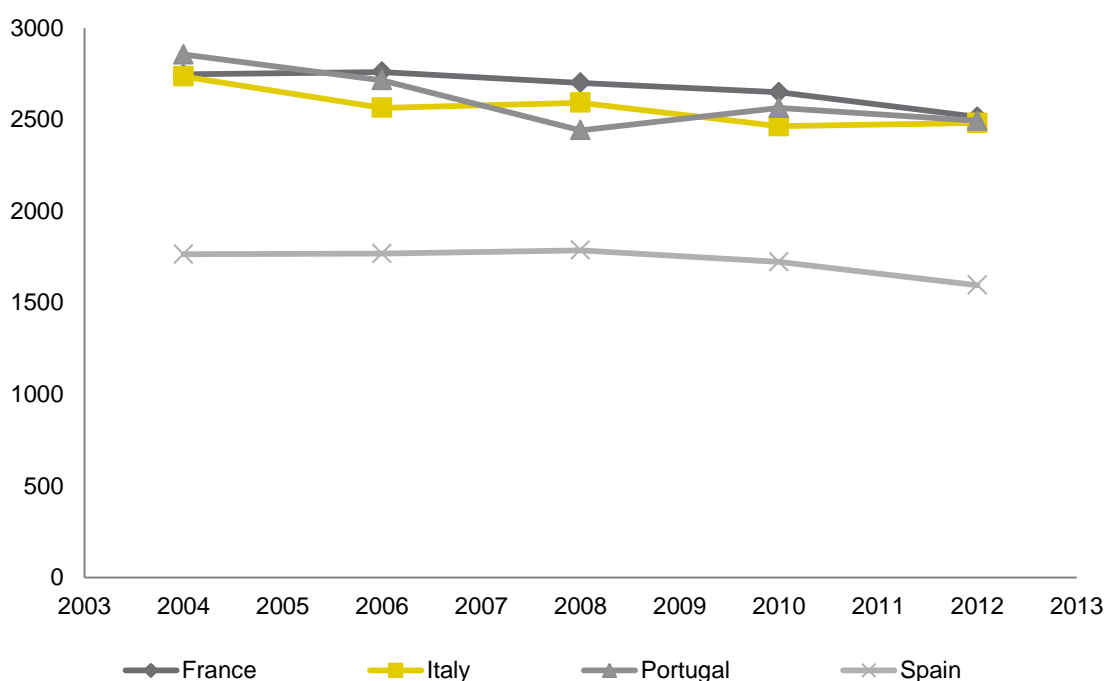
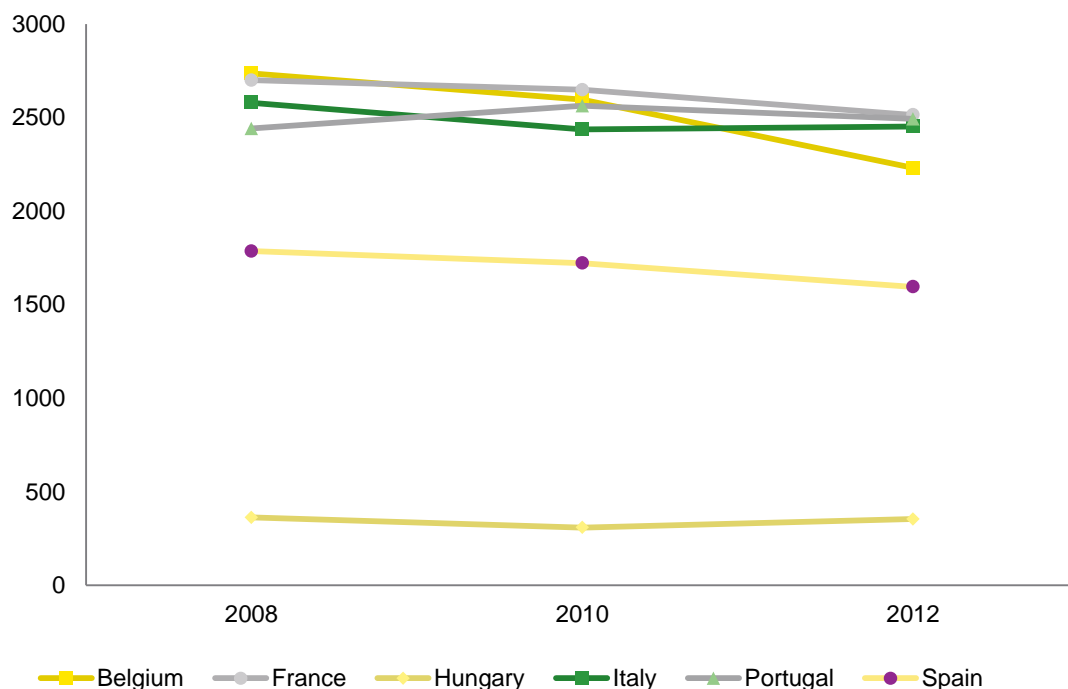


Figure 71: 2008-2012 data set: Retail concentration HHI per MS by retail group sales area (local level) - 6 MS sample (source: EY analysis based on © Nielsen Trade Dimensions)



Retail concentration at local level: findings by consumer shopping area type

At local level, retail concentration decreased slightly over the 2004-2012 period. The level of retail concentration differs across the various types of living areas.

The types that have been most concentrated over the past decade are primarily high GDP per capita areas in Predominantly Urban or Intermediate living zones. On the other hand, predominantly rural areas had the lowest levels of retail concentration. These trends for the 2004-2012 data set in Figure 72 below have been generally confirmed by the results of the 2008-2012 data set, in the second figure.

Figure 72: 2004-2012 data set: Retail concentration HHI per CSA type by retail group sales area (local level) - 4 MS sample (source: EY analysis based on © Nielsen Trade Dimensions)

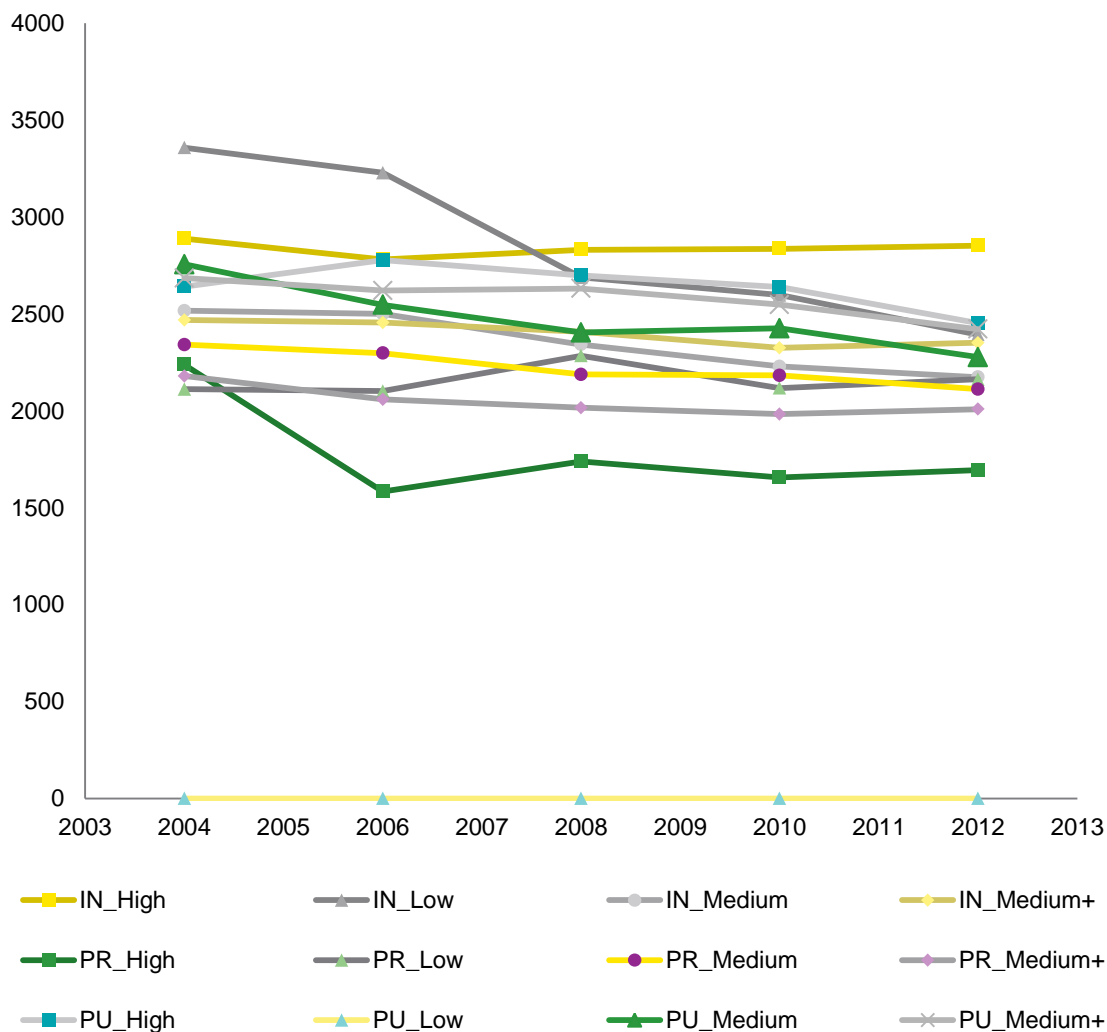
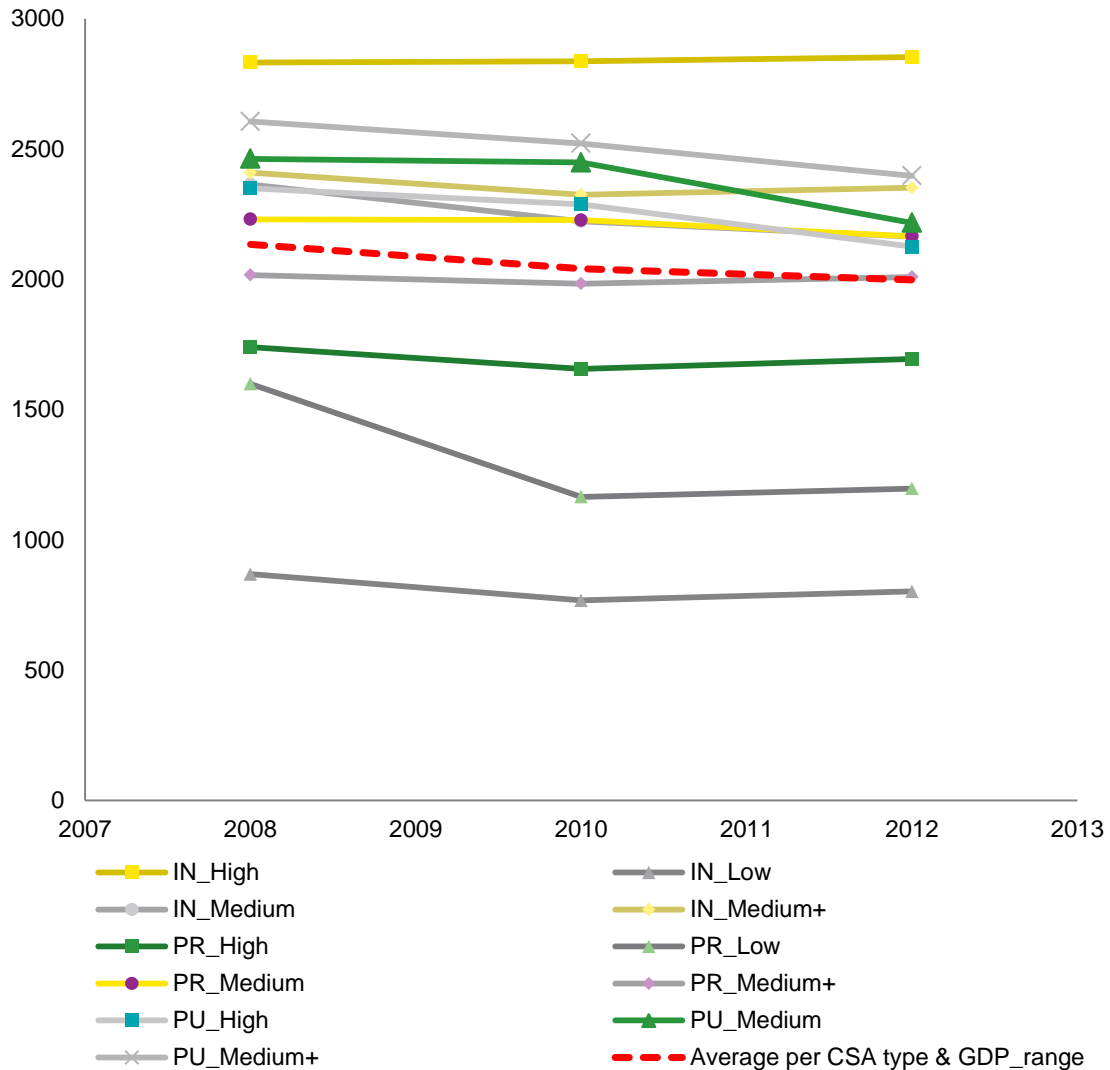


Figure 73: 2008-2012 data set: Retail concentration HHI per CSA type by retail group sales area (local level) - 6 MS sample (source: EY analysis based on © Nielsen Trade Dimensions)



In terms of evolution of retail concentration, it is not possible to draw general conclusions for types of living areas, as the results in the 2004-2012 data set and 2008-2012 vary significantly.

For example, for 2004-2012 in Figure 74 below, areas that are intermediate / low GDP per capita and predominantly rural / high GDP per capita have experienced the greatest decrease in retail concentration. Only predominantly rural / low GDP per capita areas have slightly concentrated over this period.

On the other hand, the 2008-2012 data set, in Figure 75 below, shows that predominantly rural / low GDP per capita areas have seen the largest decrease, following by predominantly urban and intermediate areas.

Figure 74: 2004-2012 data set: Retail concentration HHI per CSA type by retail group sales area (local level) – average CAGR across 4 MS sample (source: EY analysis based on © Nielsen Trade Dimensions)

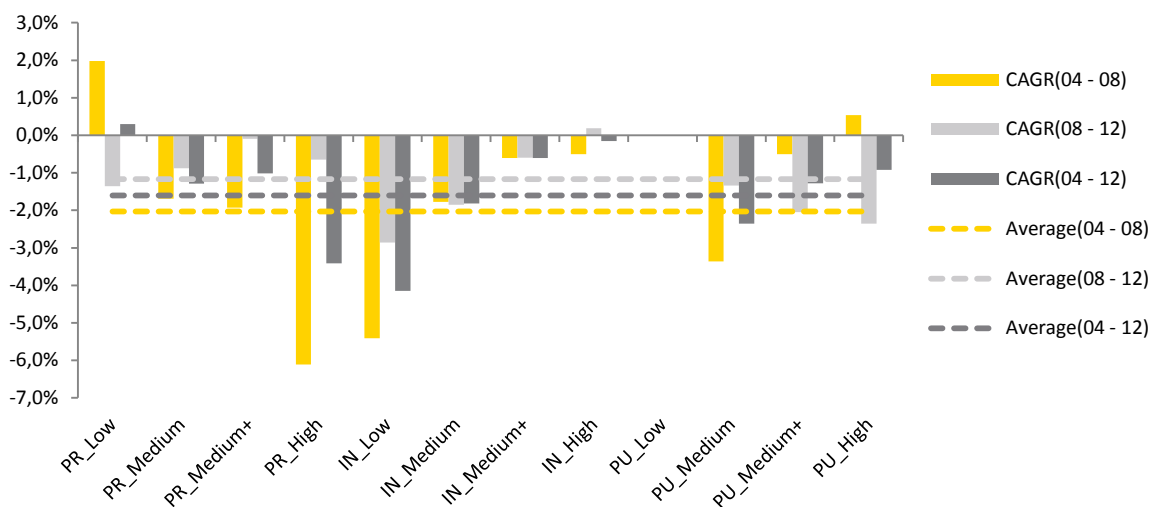
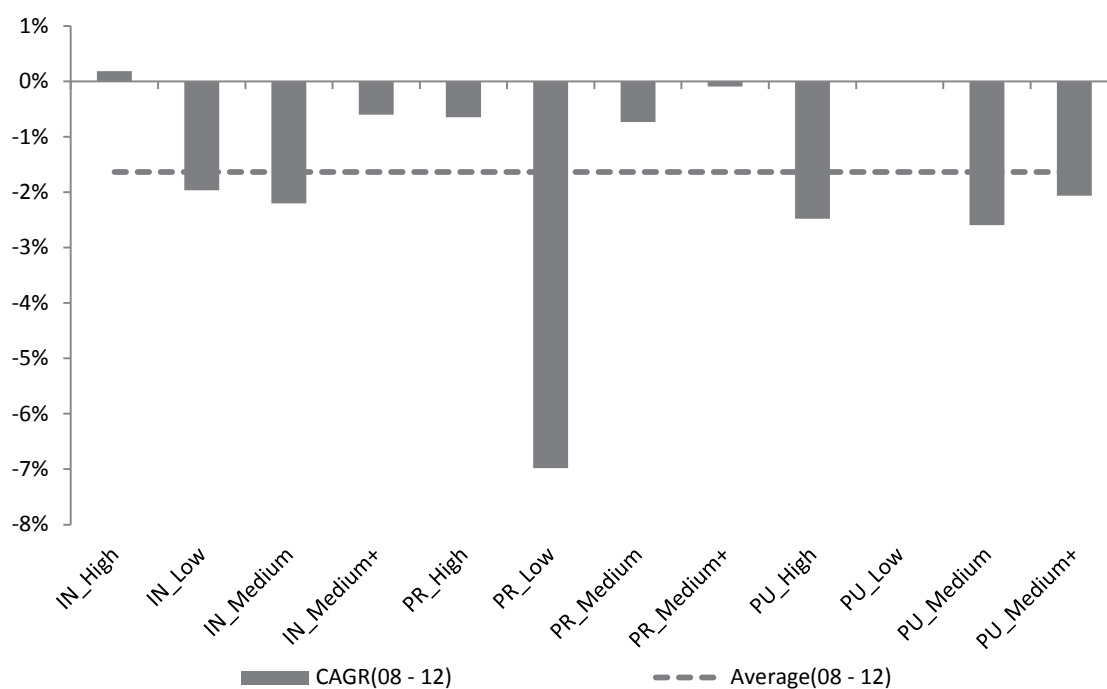


Figure 75: 2008-2012 data set: Retail concentration HHI per CSA type by retail group sales area (local level) – average CAGR across 6 MS sample (source: EY analysis based on © Nielsen Trade Dimensions)



5.4.3. Supplier Concentration

Summary of findings

Similar to retail concentration, trends in supplier concentration over the last time period depend on the level of analysis. Two levels of supplier concentration have been measured: supplier concentration at procurement or national level, measured by sales market share (brand only), and concentration at local CSA level (or assortment concentration) reflecting shop choices to stock certain suppliers. It is essential to consider supplier concentration in terms of product categories as suppliers tend to focus

on one or a limited number of categories. Nevertheless, overall conclusions across product categories are presented below in order to illustrate indicative average trends.

At procurement (national) level, data are available for 14 MS. Supplier concentration increased over the 2004-2012 period across 13 of the 14 MS and for 20 of the 23 product categories. Concentration increased more during the pre-crisis period (22 of 23 product categories becoming more concentrated), than after 2008 (17 of 23 product categories becoming more concentrated).

In terms of the level of supplier concentration at national level, the product categories with the highest concentration levels over the last decade are baby food, frozen ready cooked meals, cereals and coffee. The categories with the lowest concentration levels are ham, bread and cheese. Regarding the evolution of supplier concentration at procurement level, the product categories that have concentrated the most between 2004 and 2012 are Frozen pizzas/starters, butter/margarine and desserts. The product categories where supplier concentration has decreased the most over this same period are mineral water, soft drinks and biscuits.

At local CSA level, the trend in assortment concentration⁷⁰ changed over the period 2004-2012. During the 2004-2008 period, assortment concentration decreased in all 6 MS⁷¹ in the sample by -1.3% annually on average and for most product categories (15/23). After 2008, the decrease in assortment concentration slowed down reaching -0.4% annually on average, with even a concentration trend in two MS (France and Portugal) and 13 product categories becoming more concentrated. A wide range of situations in measure of imbalance has been observed depending on the MS and the product category. This trend was confirmed in the results of the 2008-2012 data set, where average supplier concentration across the 23 product categories and 9 MS sample fell by -0.3% (11 of 23 product categories becoming less concentrated).

At local level, the product categories with the highest concentration levels over the last decade are baby food, fresh pre-packaged bread, frozen vegetables and ready cooked meals. The categories with the lowest concentration levels are cheese, chocolate and butter/margarine. Regarding the evolution of supplier concentration at local level, the product categories that have de-concentrated the most between 2004 and 2012 are chocolate, mineral water and tea. The product categories where supplier concentration has increased the most over this same period are frozen vegetables, starters/pizzas and savoury snacks. This result is directly linked with the increasing choice described in the previous chapter: supplier concentration at local level measures the assortment available on the shelves, equivalent to measuring choices in supplier.

Supplier concentration at national level

When considering the largest sample for which data was available, Denmark (HHI of 2840 in 2012, excluding private label), the Netherlands (2839 in 2012) and Finland (2594 in 2012) have been the most concentrated on average over the past decade across the 23 product categories, whilst Italy (1590 in 2012) and Germany (1359 in 2012) have been the least concentrated on average. In terms of the evolution over time, supplier concentration has the most on average in Spain (1776 in 2004 to 2179 in 2012), Poland (1439 in 2004 to 1743 in 2012), and Czech Republic (1700 in 2004 to 2456 in 2012). On the other hand, supplier concentration has decreased on average in Finland only (2792 in 2004 to 2594 in 2012).

⁷⁰ Assortment concentration is the measure at local level which reflects the concentration of suppliers in the assortment on shop shelves, which is impacted by shop decisions to stock certain products and not others.

⁷¹ Belgium, France, Italy, Poland, Portugal, Spain

Table 18: Supplier concentration HHI (national level) by market share per product category – average across 23 sample product categories (source: EY analysis based on © Euromonitor International)

| Rank | Member State | Population (m) | 2004 | 2006 | 2008 | 2010 | 2012 | CAGR (04-12) |
|------|----------------|----------------|------|------|------|------|------|--------------|
| 1 | Denmark | 5.6 | 2433 | 2438 | 2706 | 2779 | 2840 | 2,0% |
| 2 | Netherlands | 16.7 | 2575 | 2636 | 2926 | 2890 | 2839 | 1,2% |
| 3 | Finland | 5.4 | 2792 | 2729 | 2768 | 2741 | 2594 | -0,9% |
| 4 | Portugal | 10.6 | 2123 | 2167 | 2289 | 2339 | 2427 | 1,7% |
| 5 | Belgium | 11.0 | 2096 | 2240 | 2325 | 2397 | 2337 | 1,4% |
| 6 | Spain | 46.2 | 1776 | 1914 | 1958 | 2018 | 2179 | 2,6% |
| 7 | France | 65.2 | 1839 | 1955 | 1999 | 2123 | 2130 | 1,9% |
| 8 | Czech Republic | 10.5 | 1700 | 1801 | 2042 | 2057 | 2057 | 2,4% |
| 9 | Hungary | 10.0 | 1964 | 2107 | 2035 | 2055 | 2017 | 0,3% |
| 10 | United Kingdom | 62.3 | 1717 | 1707 | 1715 | 1795 | 1766 | 0,4% |
| 11 | Romania | 21.4 | 1751 | 1758 | 1721 | 1721 | 1747 | 0,0% |
| 12 | Poland | 38.5 | 1440 | 1529 | 1648 | 1725 | 1743 | 2,4% |
| 13 | Italy | 60.7 | 1407 | 1461 | 1500 | 1519 | 1590 | 1,5% |
| 14 | Germany | 81.8 | 1202 | 1226 | 1268 | 1384 | 1359 | 1,5% |

Calculations based on C5 are in line with these observations for all 14 MS.

Findings at national level by product category

There is significant variation in the concentration of suppliers across the different product categories and Member States as illustrated in Table 19 below, questioning the relevance of product categories analysis, based on an average for the 14 MS.

Note: Euromonitor bread category covers a wider range of products than fresh prepackaged bread only.

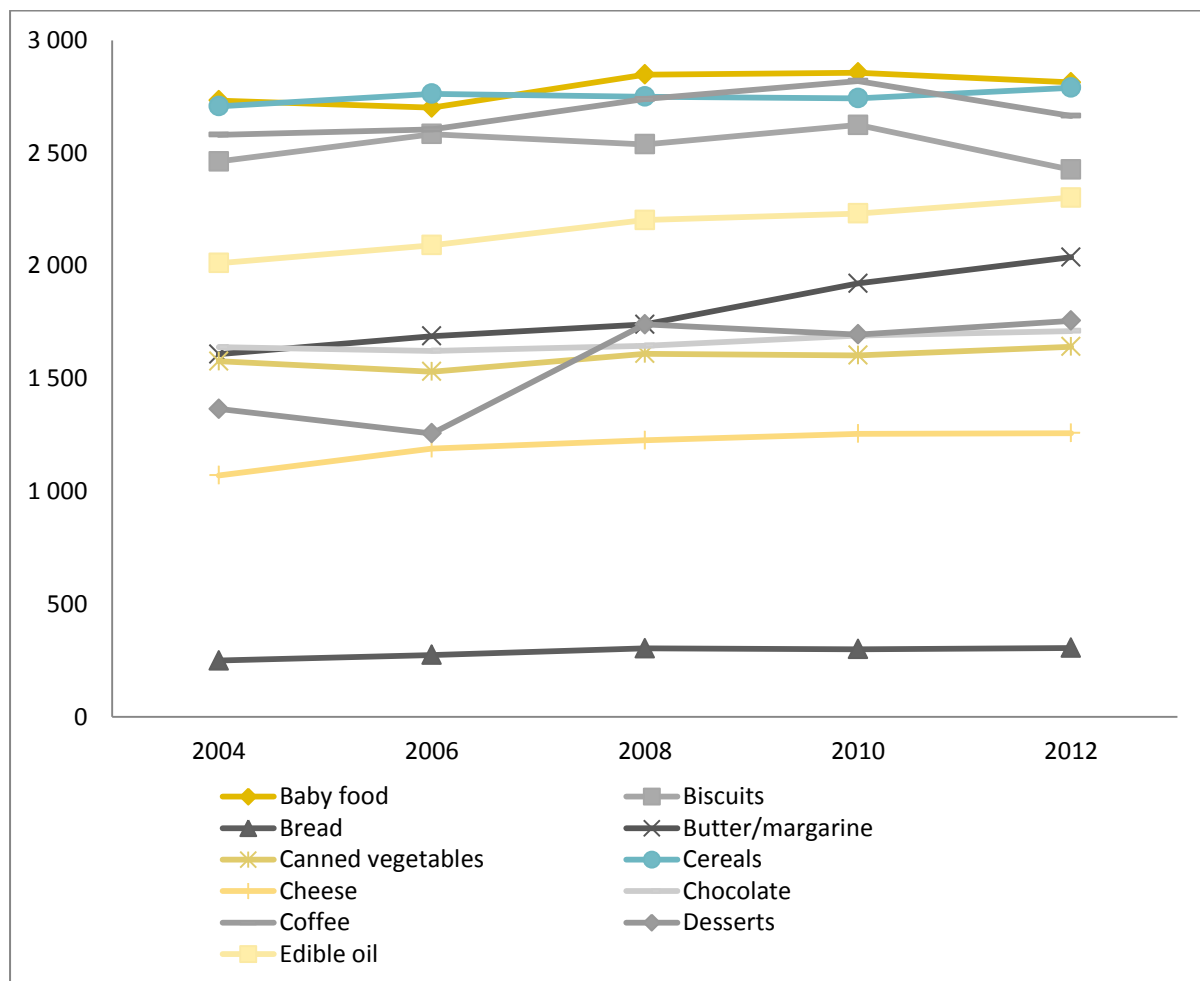
Table 19: Supplier concentration by product categories and by MS – CAGR 2004-2012
 (source: EY analysis based on © Euromonitor International)

| | Belgium | Czech Republic | Denmark | Finland | France | Germany | Hungary | Italy | Netherlands | Poland | Portugal | Romania | Spain | United Kingdom | Average 14 MS |
|-------------------------------|---------|----------------|---------|---------|--------|---------|---------|-------|-------------|--------|----------|---------|-------|----------------|---------------|
| Baby food | 1,1% | 0,0% | -2,0% | -1,1% | 0,5% | -0,1% | -1,1% | 1,6% | 0,2% | 2,4% | 2,3% | -1,0% | 1,0% | 2,3% | 0,4% |
| Biscuits | 0,5% | -0,7% | -1,1% | -5,8% | 3,7% | -0,8% | -3,0% | 2,3% | 4,1% | 0,3% | 6,8% | 2,1% | 5,0% | 2,0% | -0,2% |
| Bread | 4,0% | 18,4% | -2,9% | 2,1% | -0,8% | 1,3% | 6,4% | 8,3% | -3,7% | 9,4% | -1,9% | 25,6% | 10,7% | 8,0% | 2,6% |
| Butter/margarine | -0,2% | 0,8% | 1,2% | 6,2% | 1,9% | 1,1% | -1,1% | 3,7% | 5,3% | 9,9% | 1,3% | 3,0% | -1,0% | 8,2% | 3,0% |
| Canned vegetables | 7,7% | -3,5% | 8,3% | -17,8% | 2,0% | 7,4% | -6,7% | 2,8% | -0,6% | 0,0% | -5,8% | 4,3% | 5,0% | 1,7% | 0,5% |
| Cereals | -1,3% | 1,6% | 3,0% | 1,5% | -0,4% | -1,0% | 1,4% | 0,5% | 0,5% | -1,2% | 4,5% | -1,9% | 1,0% | -2,5% | 0,4% |
| Cheese | 1,7% | 1,9% | -0,9% | 3,1% | 2,6% | 3,0% | 2,2% | 5,8% | 6,0% | 1,4% | 5,9% | 1,6% | 5,8% | 2,4% | 2,0% |
| Chocolate | 1,2% | 0,2% | 0,9% | 0,2% | 2,3% | 1,7% | -1,1% | 0,7% | 1,5% | -0,1% | -0,7% | -0,9% | 1,9% | 0,7% | 0,5% |
| Coffee | 3,6% | -0,3% | 0,2% | -6,1% | 0,7% | -0,7% | -0,2% | -1,3% | 2,9% | 2,6% | 2,2% | 3,0% | 4,5% | -4,8% | 0,4% |
| Desserts | -2,6% | 3,1% | 94,6% | -1,6% | -4,7% | 4,3% | -1,3% | 9,6% | 5,5% | 6,2% | -4,2% | 5,3% | -4,3% | -3,5% | 3,2% |
| Edible oil | -3,4% | 3,8% | 2,3% | 1,5% | 4,0% | -8,3% | -0,5% | 7,2% | 7,4% | 9,7% | 2,7% | -1,0% | 5,2% | -2,8% | 1,7% |
| Frozen pizzas/starters | 2,7% | 15,0% | 6,7% | 0,8% | 2,4% | 0,9% | 9,1% | 0,8% | 3,1% | -1,7% | 4,3% | 5,1% | -3,2% | 2,7% | 4,6% |
| Frozen ready cooked meals | 0,3% | 5,5% | 4,8% | 0,8% | -5,6% | 3,2% | -8,3% | 4,0% | 0,5% | -0,3% | -1,0% | 0,0% | -0,2% | -0,3% | 0,5% |
| Frozen vegetables | -1,2% | 2,2% | 5,4% | -1,3% | 2,4% | 9,5% | 1,4% | 3,5% | 0,0% | 0,7% | 0,6% | -5,2% | 7,5% | -0,6% | 1,8% |
| Fruit Juices | -0,4% | 2,0% | -1,6% | 2,8% | 5,1% | 6,8% | 10,7% | -0,2% | -2,7% | 3,0% | 3,0% | -3,3% | 4,2% | 8,5% | 1,6% |
| Ham | 2,6% | 2,1% | 9,2% | 1,2% | 2,8% | 5,3% | 13,0% | 2,4% | -1,1% | 0,1% | 1,6% | -6,7% | 2,8% | 1,3% | 2,8% |
| Ice Cream | 2,0% | 1,0% | 1,7% | 2,8% | 1,9% | 0,5% | -4,9% | -9,3% | 5,0% | -1,2% | 3,9% | 0,0% | 2,1% | 1,4% | 1,8% |
| Milk | 2,3% | 3,9% | -0,9% | -3,0% | 0,4% | 9,6% | -0,8% | -3,2% | 3,4% | 9,7% | 1,9% | 1,7% | 2,4% | -5,3% | 0,5% |
| Mineral water | 1,2% | 2,7% | -0,2% | 0,9% | 2,9% | -0,4% | -3,0% | 0,6% | -9,0% | 9,3% | 1,2% | 0,9% | -1,0% | -1,3% | -0,5% |
| Savoury snacks | 7,2% | 0,9% | 2,3% | -2,6% | 8,0% | 3,4% | 1,7% | 2,9% | 7,9% | 2,0% | 1,9% | -1,5% | 3,6% | -0,9% | 2,7% |
| Soft drinks | -1,5% | -0,2% | 1,0% | -2,5% | 2,1% | -2,0% | -3,4% | 2,7% | -1,2% | 1,3% | 3,6% | -1,4% | 0,7% | -0,7% | -0,1% |
| Tea | 4,3% | -2,0% | -1,1% | 1,1% | 0,2% | 2,6% | -0,4% | 0,9% | -4,1% | 11,0% | 1,8% | 3,5% | 0,6% | -0,8% | 0,6% |
| Yoghurt | 4,9% | -3,7% | -0,8% | -1,8% | 6,2% | 0,3% | 2,7% | -0,6% | -4,2% | 6,3% | 0,9% | 1,4% | 7,8% | -0,9% | 1,4% |
| Average 23 product categories | 1,4% | 2,4% | 2,0% | -0,9% | 1,9% | 1,5% | 0,3% | 1,5% | 1,2% | 2,4% | 1,7% | 0,0% | 2,6% | 0,4% | 1,3% |

The analysis below considers the 14 MS studied 14 separate markets, to reflect the fact that procurement of FMCGs is done on a national basis (as results from the treatment of FMCG procurement markets in competition cases). Figure 76 and Figure 77 presented below are therefore the arithmetic average of all 14 supplier concentration HHI by market share.

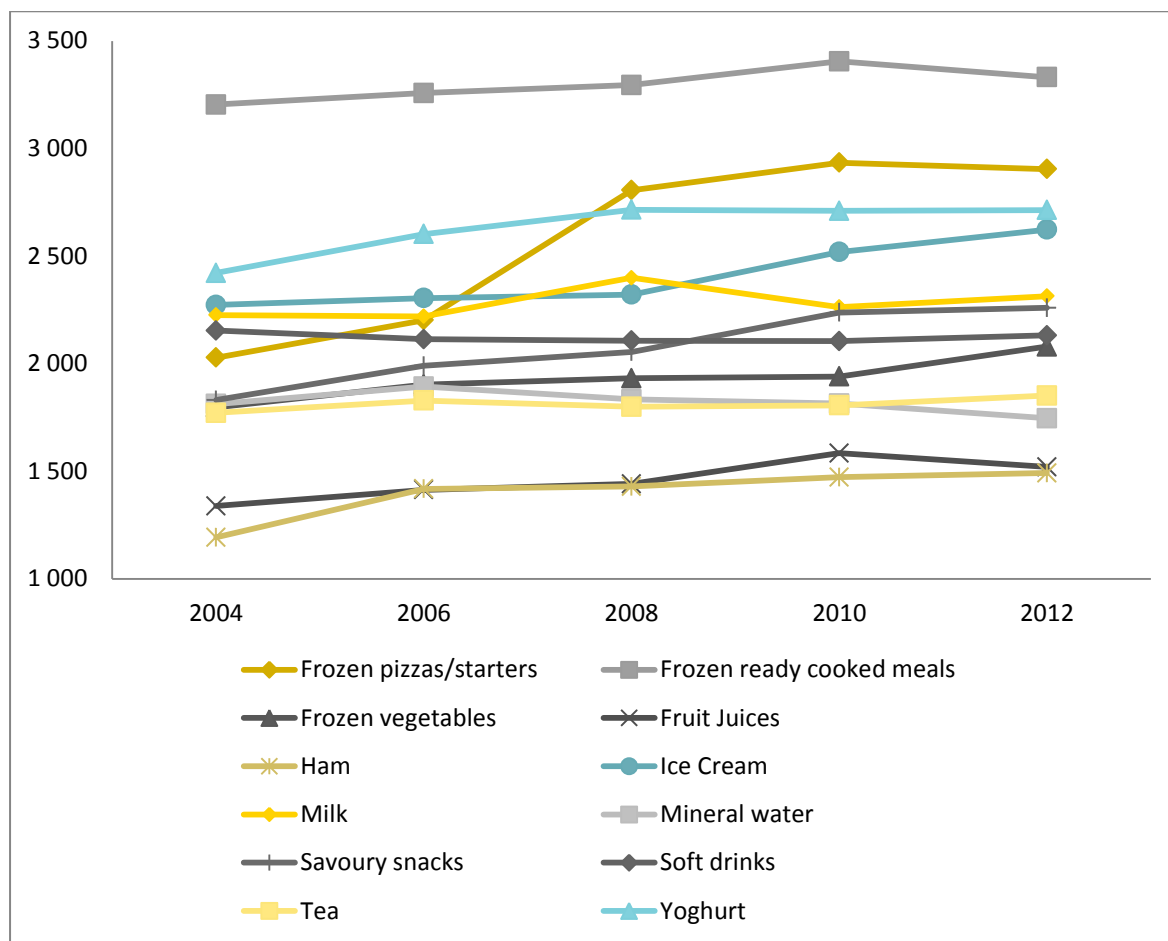
In terms of the level of supplier concentration at national level using © Euromonitor International data, the product categories with the highest concentration levels over the last decade across the 14 MS as a whole are frozen ready cooked meals, baby food, cereals and coffee. Conversely, the categories with the lowest concentration levels across the 14 MS as a whole are ham/delicatessen, cheese and bread.

Figure 76: Supplier concentration HHI by market share per product category (national level) – average across 14 MS sample – first set of categories (source: EY analysis based on © Euromonitor International)



Note: Bread category of EUROMONITOR covers a wider range of products than fresh prepackaged bread.

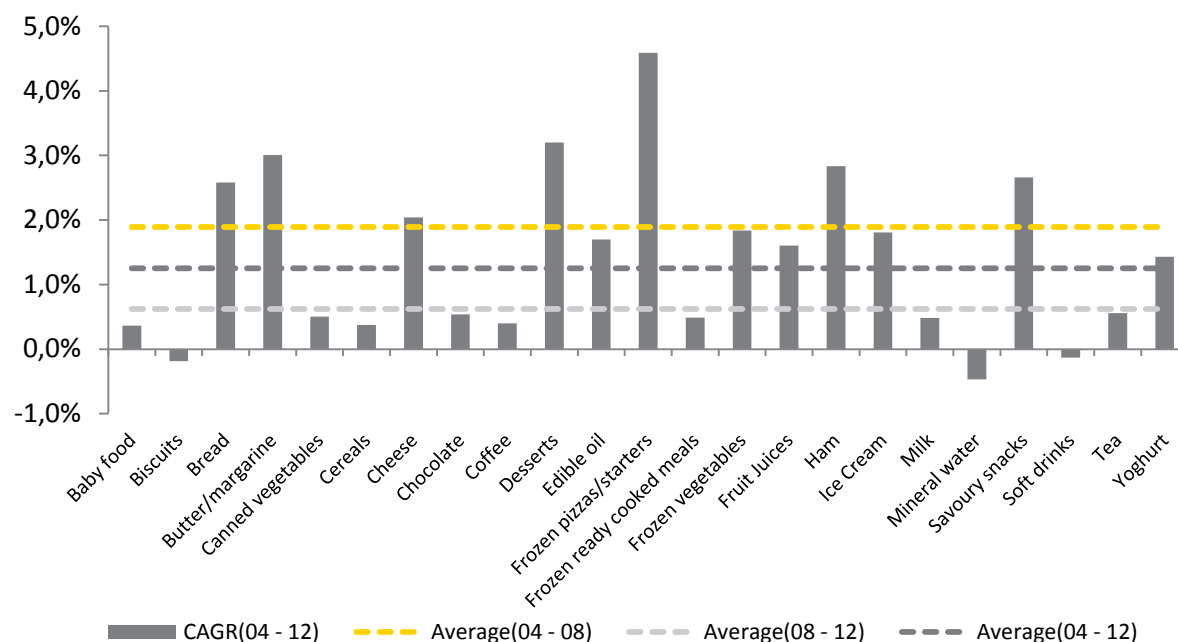
Figure 77: Supplier concentration HHI by market share per product category (national level) – average across 14 MS sample – second set of categories (source: EY analysis based on © Euromonitor International)



Regarding the evolution of supplier concentration at procurement level, as shown in the figure below, the product categories that concentrated the most over 2004-2012 across the 14 MS as a whole are bread, desserts, starters/pizzas. The product categories where supplier concentration decreased the most over this same period across the 14 MS as a whole are mineral water, soft drinks and biscuits.

It is worth noting that supplier concentration occurred at a stronger level during the pre-crisis period 2004-2008 (+1.9% on average) than after 2008 (+0,6% on average).

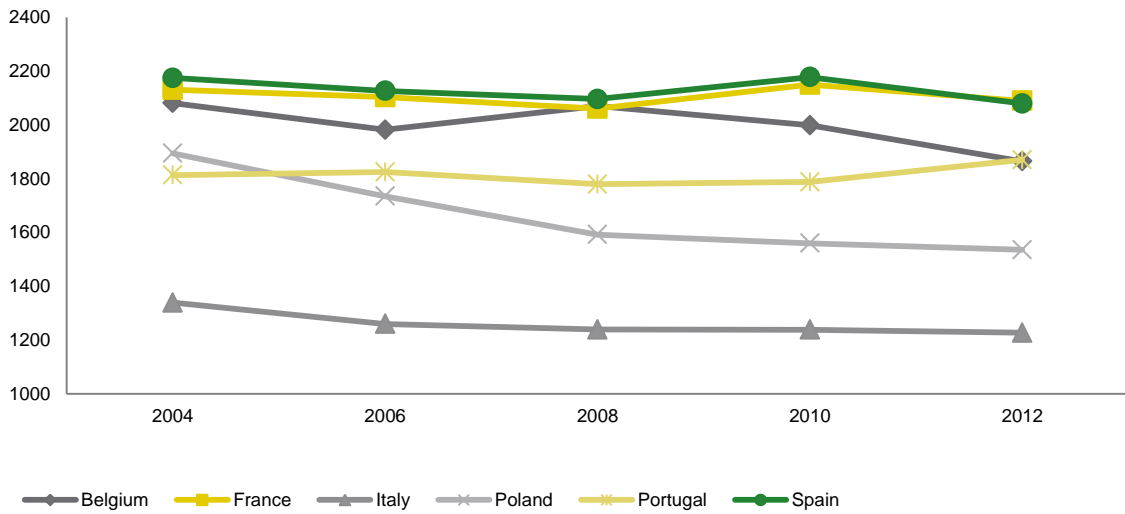
Figure 78: Supplier concentration HHI by market share per product category (national level) – average CAGR across 14 MS sample (source: EY analysis based on © Euromonitor International)



Supplier concentration at local level

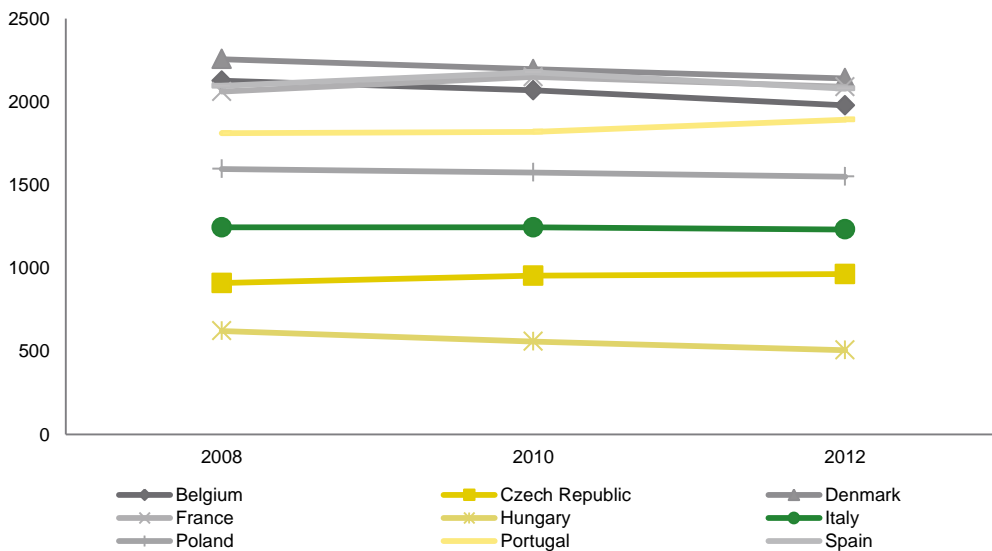
At the local level, in terms of assortment concentration (i.e. supplier share of EAN codes in assortments at local level) the MS that have been most concentrated on average across the 23 product categories over the last decade are Spain, France and Belgium. The least concentrated on average have been Italy and Poland, in line with the observations made at national level. The 2008-2012 data set confirms this situation, and illustrates furthermore that Denmark is also very concentrated on average compared to the other sample MS, and Hungary and the Czech Republic are amongst the least concentrated MS on average. It is important to note however that results for Denmark and the Czech Republic are based on a limited number of observations.

Figure 79: 2004-2012 data set: Supplier concentration by MS across 23 product categories (local level based on HHI) (source: EY analysis based on © Nielsen Opus)



Regarding the evolution of supplier concentration over the last decade, Poland is the MS that has de-concentrated the most on average since 2004, followed by Belgium and Italy. In the 2008-2012 data set, Hungary is the MS that has de-concentrated the most on average since 2008, followed by Belgium and Denmark. Portugal is the only MS where suppliers have concentrated in both the 2004-2012 and 2008-2012 data sets, but supplier concentration has also increased in Czech Republic since 2008. In general, MS de-concentrated on average to a greater extent in the pre-crisis period than the crisis period.

Figure 80: 2008-2012 data set: Supplier concentration by MS across 23 product categories (local level based on HHI) (source: EY analysis based on © Nielsen Opus)



In terms of the level of assortment concentration at local level using © Nielsen Opus data, as shown in Figure 81 and Figure 82 below the product categories with the highest average concentration levels over the last decade across the 6 MS sample are baby food,

fresh pre-packaged bread, frozen vegetables and ready cooked meals. The categories with the lowest average concentration levels across the 6 MS sample are cheese, chocolate and butter/margarine. These situations presented below were confirmed in the results of the 2008-2012 9 MS sample.

Figure 81: 2004-2012 data set: Assortment concentration HHI by share of EANs per product category (local level) – average across 6 MS sample – first set of categories (source: EY analysis based on © Nielsen Opus)

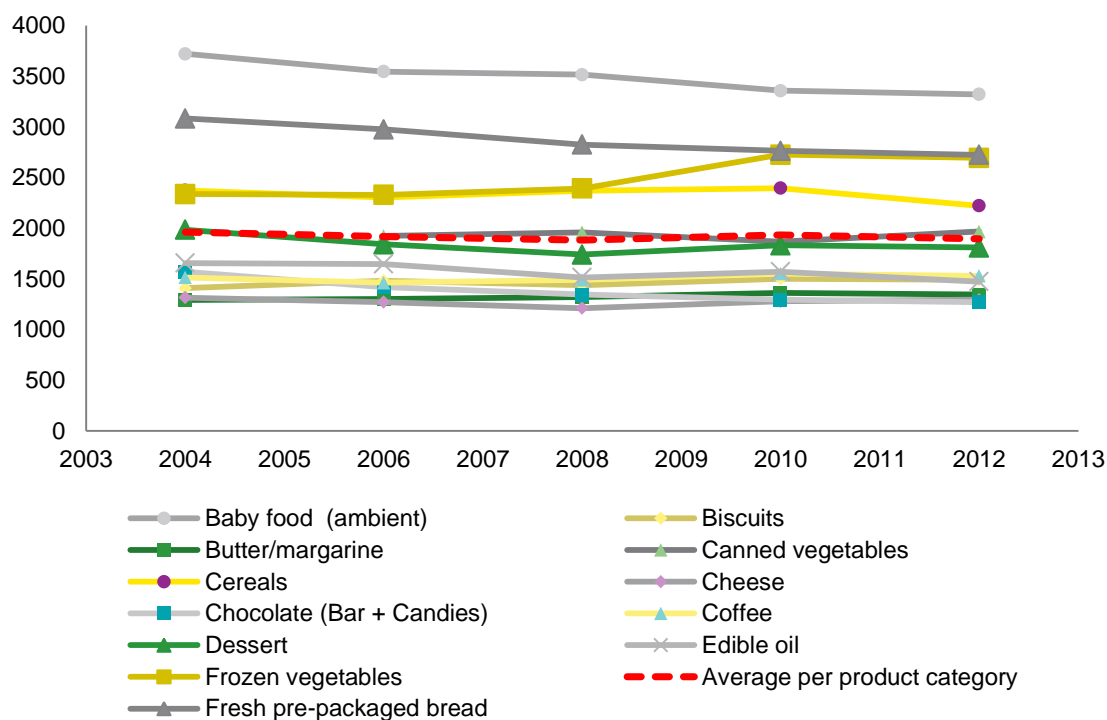
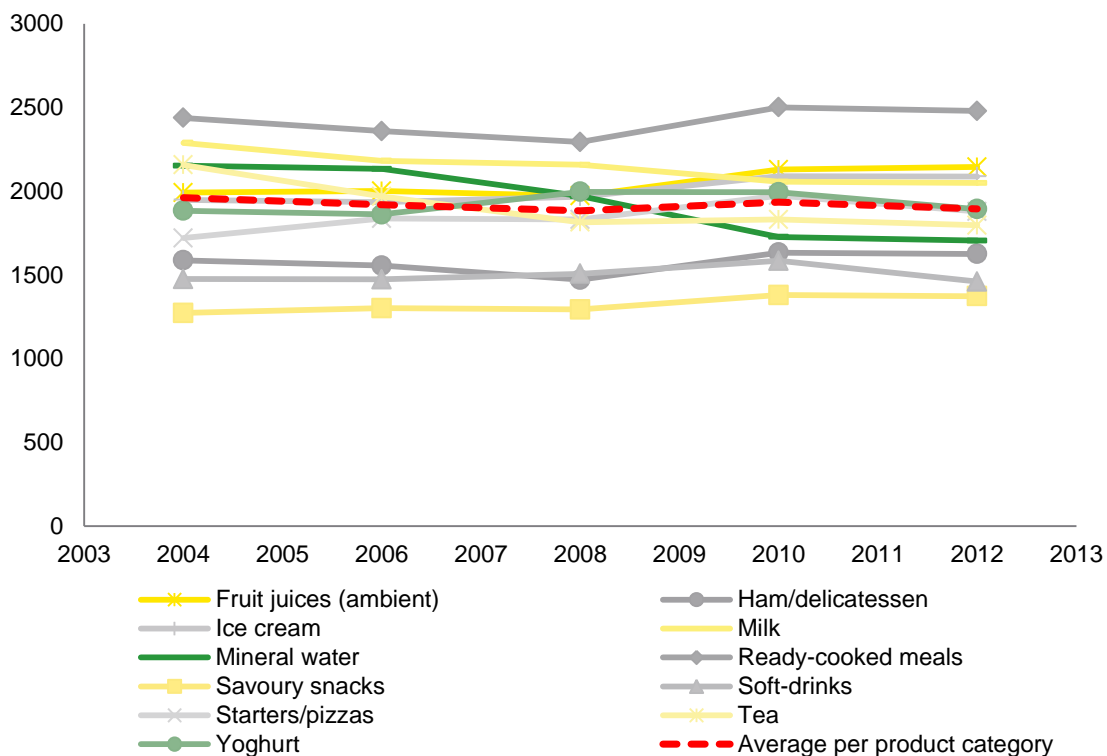
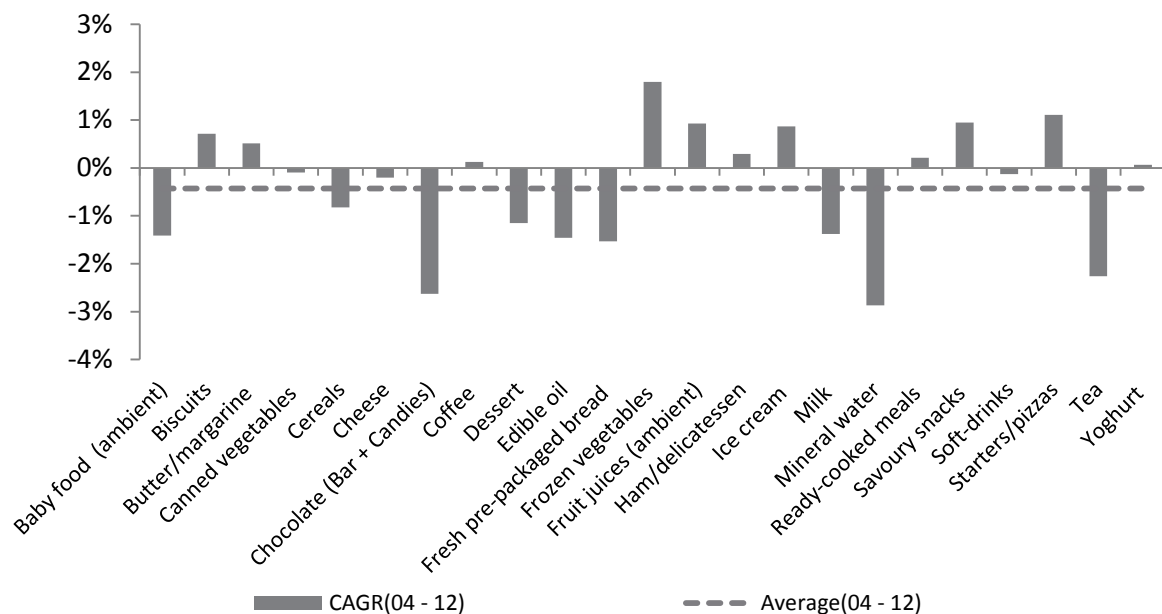


Figure 82: 2004-2012 data set: Assortment concentration HHI by share of EANs per product category (local level) – average across 6 MS sample – second set of categories (source: EY analysis based on © Nielsen Opus)



Regarding the evolution of assortment concentration at local level, as shown in Figure 83 below, the product categories that have de-concentrated the most on average over 2004-2012 across the 6 MS sample are chocolate, mineral water and tea. The product categories where supplier concentration has increased the most on average over this same period across the 6 MS sample are frozen vegetables, starters/pizzas and savoury snacks.

Figure 83: 2004-2012 data set: Assortment concentration HHI by share of EANs per product category (local level) – average CAGR across 6 MS sample (source: EY analysis based on © Nielsen Opus)



The above situations and trends are mainly observed for the 2008-2012 9 MS sample.

5.4.4. Measure of Imbalance

Summary of findings

The balance of the relationship between suppliers and modern retailers was measured at the procurement level, i.e. at national level, considering that negotiations mainly take place at national level. Analyses of situations by product category and Member States attest that they are equal numbers of situations in favour of retailers as they are situations in favour of suppliers.

At national level, modern retail groups are concentrated to a greater extent than brand suppliers in 6 out of 14 MS for the majority of product categories (for example: in Finland, retailers are more concentrated than suppliers for 21 out of 23 product categories). In the other 8 MS, suppliers are more concentrated than modern retailers for the majority of analysed product categories (for example in Hungary: suppliers are more concentrated than modern retailers in 17 product categories out of 23). For 12 product categories, modern retailers are more concentrated than suppliers in a majority of the 14 analysed MS, whereas suppliers are more concentrated than modern retailers in a majority of MS for 11 product categories. For instance, baby food and cereals suppliers are more concentrated than modern retailers in most MS in the sample, whereas the opposite is the case for cheese, ham or bread.

Table 20: Number of situations of imbalance HHI across 23 product category sample (source: EY analysis based on © Planet Retail and © Euromonitor)

| Measure of imbalance | 2004 | 2006 | 2008 | 2010 | 2012 |
|---|------|------|------|------|------|
| In the 14 MS | | | | | |
| Situations in favour of suppliers (MOI below 0) | 168 | 175 | 165 | 173 | 162 |
| Situations in favour of retailers (MOI above 0) | 154 | 147 | 157 | 149 | 160 |
| % of situations in favour of suppliers | 52% | 54% | 51% | 54% | 50% |
| % of situations in favour of retailers | 48% | 46% | 49% | 46% | 50% |

A comprehensive view of the measure of imbalance at procurement level is provided in the analysis below: firstly, trends by MS (averaged over 23 product categories), then by product category (averaged over 14 MS).

The local level measure of imbalance is not presented in this section as the procurement level is where the relationship between suppliers and retailers is most appropriately measured.

Findings by Member State

Going through the 14 MS⁷², across all 23 sampled product categories over the period 2004-2012 diverse trends have been observed. At procurement level, the concentration of retailers has grown to a greater extent than the concentration of suppliers for a majority of product categories in Spain, Czech Republic, Finland and Germany. The opposite trend has been observed in Belgium, France, Italy, Netherlands and Romania where the concentration of suppliers has grown to a greater extent than the concentration of retailers. Finally, in the UK, Hungary and Portugal, the ratio between retail concentration and supplier concentration has remained fairly stable over the last decade.

Of the 14 MS analysed, on average across 23 product categories, retail concentration is higher than supplier concentration to the greatest extent in Finland and Romania. On the

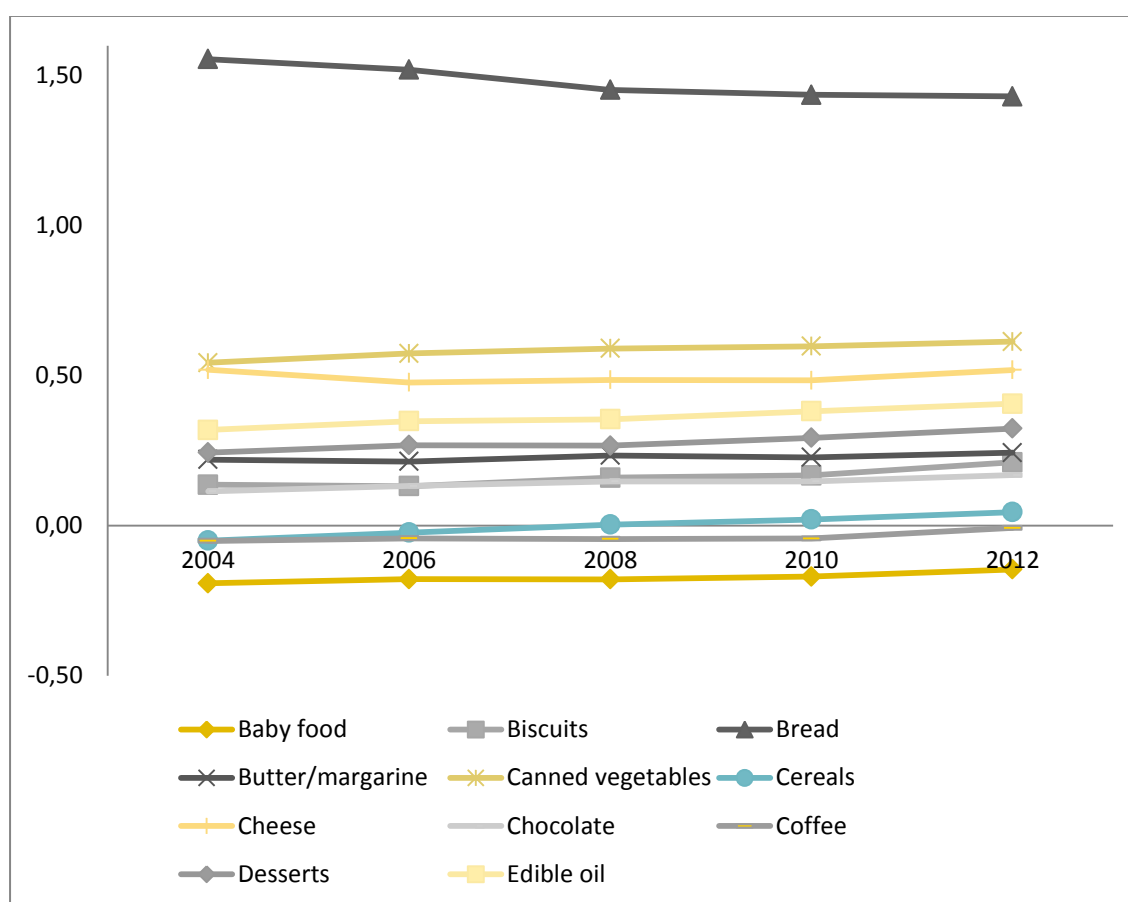
⁷² Supplier concentration is only available for 14 MS, so as the MOI.

other hand, the level of supplier concentration is higher than retail concentration to the greatest extent in France, Denmark and Hungary.

Findings by product category

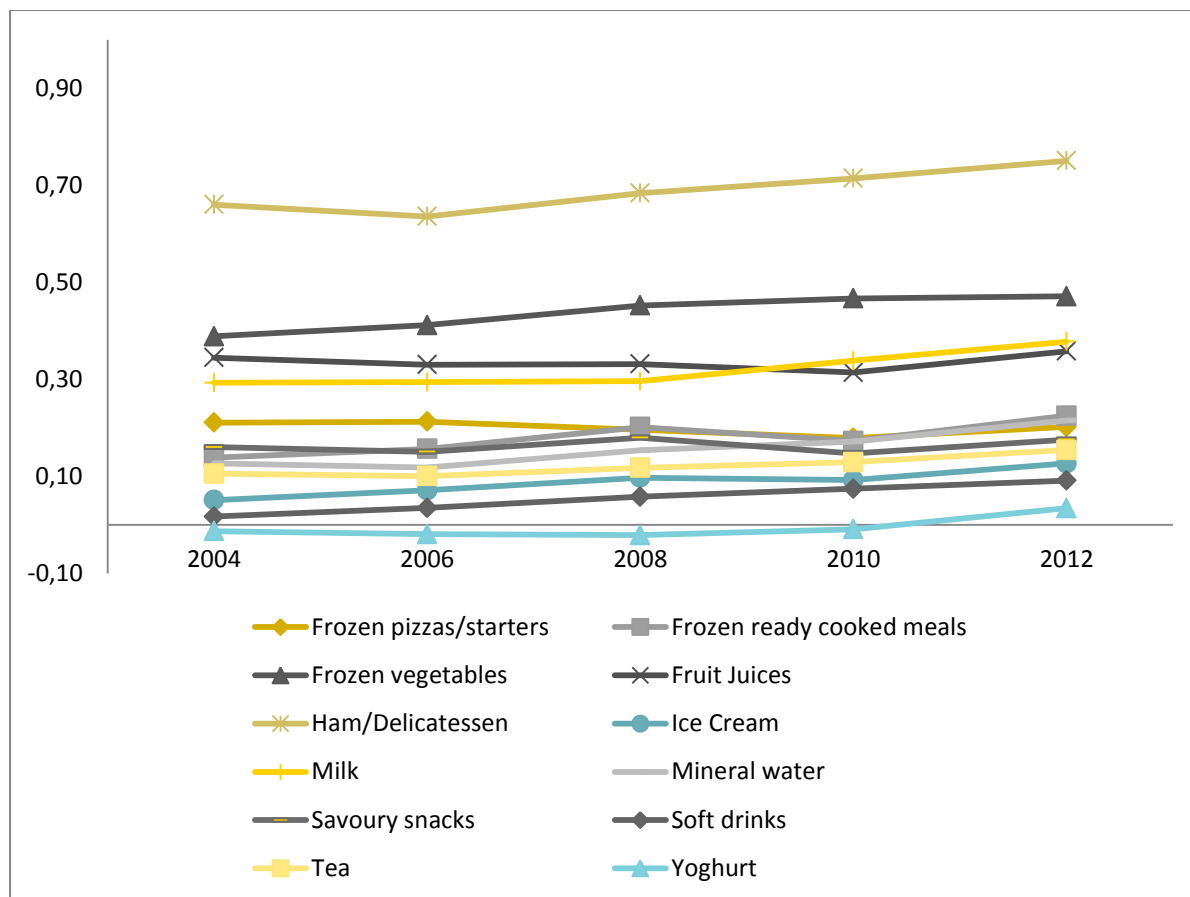
The measure of imbalance at procurement level differs significantly over product categories. Because the 14 MS cannot be considered as a single market (see approach for supplier concentration above), on average, the product categories where retail concentration exceeds supplier concentration most are fresh pre-packaged bread and ham/delicatessen. On the other hand, across the 14 MS the categories where supplier concentration exceeds retail concentration most are cereals, baby food, and savoury snacks.

Figure 84: Measure of imbalance HHI at procurement level per product category (national level) – average across 14 MS – first set of categories (source: EY analysis based on © Planet Retail and © Euromonitor International)



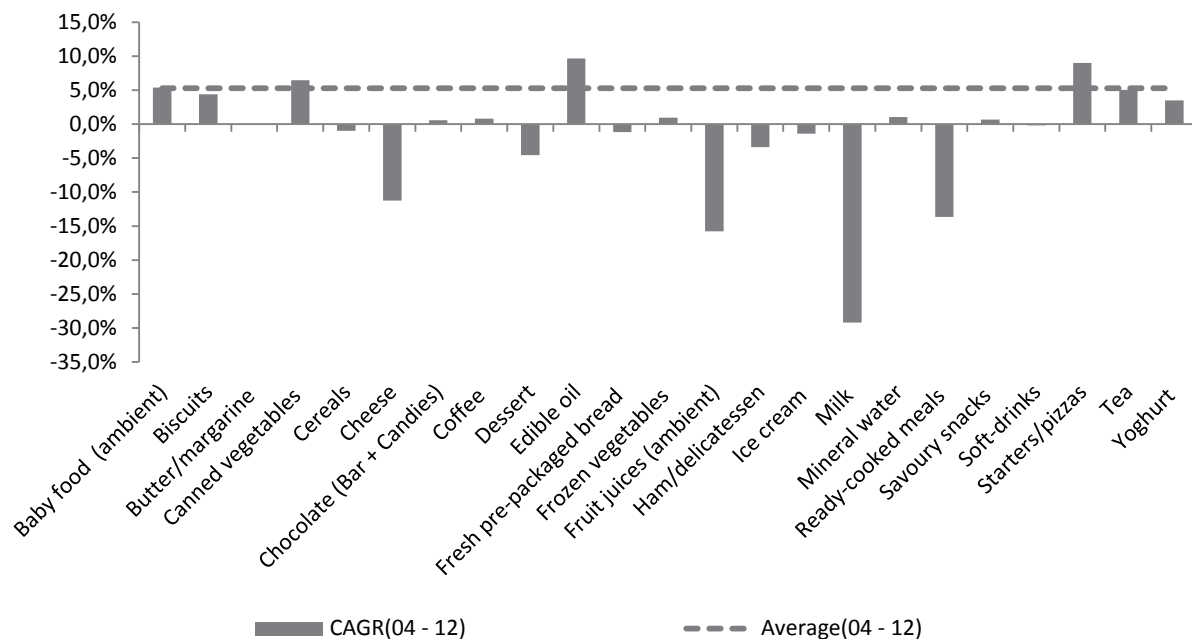
Note: Euromonitor bread category covers a wider range of products than fresh prepackaged bread only.

Figure 85: Measure of imbalance HHI at procurement level per product category (national level) – average across 14 MS – second set of categories (source: EY analysis based on © Planet Retail and © Euromonitor International)



In terms of evolutions of the measure of imbalance, the categories where the rate of retail concentration growth has exceeded the rate of supplier concentration growth to the greatest extent across the 14 MS as a whole are ready cooked meals, cheese and desserts; whilst the categories where supplier concentration growth has exceed retail concentration growth the most are edible oil, canned vegetables, starters/pizzas and milk.

Figure 86: Measure of imbalance HHI at procurement level per product category (national level) – average CAGR across 14 MS (source: EY analysis based on © Planet Retail and © Euromonitor International)



Note: Euromonitor bread category covers a wider range of products than fresh prepackaged bread only.

5.5. Question 4: How have the other a priori drivers of choice and innovation evolved over time and across MS?

5.5.1. Introduction

In addition to concentration factors, a number of other a priori drivers of choice and innovation have been analysed in this study. Drivers that are assessed in this section include:

- Shop type: hypermarket, supermarket or discount store
- Shop size: shop sales area dedicated to grocery items
- Socio-demographic characteristics, including population size and density, GDP per capita, unemployment rate and consumption of food and non-alcoholic beverage;
- Private label share: both the sales share of private label products, and their proportion in shop assortments
- Product category turnover: the market size in terms of edible grocery sales of each sample product category
- Retail business expectations

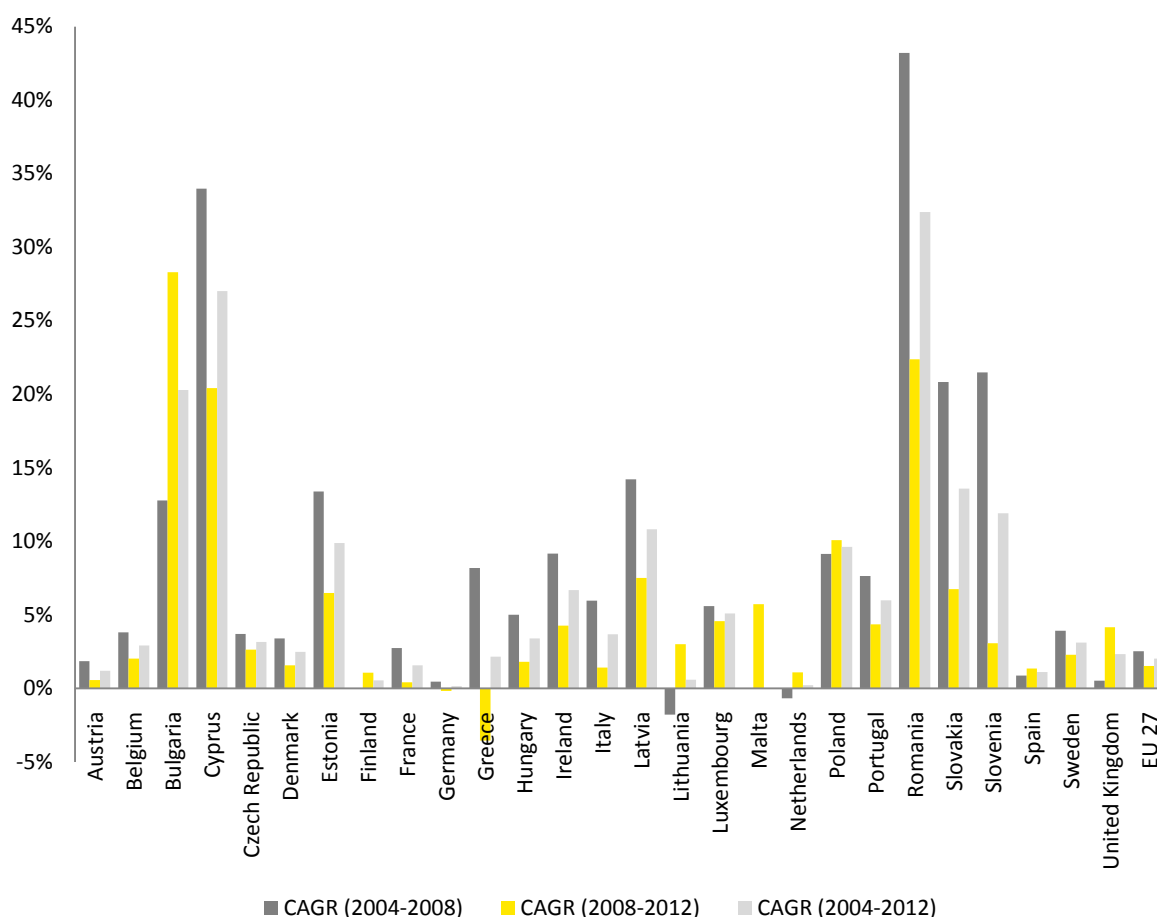
This section presents the evolution of these a priori drivers over the past decade.

5.5.2. Shop type

Summary of findings

In the EU 27 the most common shop formats over the past decade are supermarkets (56% in 2012) and discount stores (38% in 2012), representing around 94% of modern retail outlets in the EU. Hypermarkets represent the remaining 6% of modern retail outlets. There has been growth in all modern retail shop types over the past decade, with higher growth during the pre-crisis period (2.5%) than the crisis period (1.5%).

Figure 87: Growth in total number of modern retail outlets in the EU 27 (national level) - CAGR (source: EY analysis based on © Planet Retail)



In the sample of CSAs and MS, the most common shop format was supermarkets, representing approximately 60% of all modern retail shops, followed by discount stores (around 30%) and hypermarkets (around 10%). There has been growth in all shop types over the past decade, with higher growth during the pre-crisis period than the crisis period.

In terms of trends, during the pre-crisis period, the shop type that grew the most was discount stores, closely followed by hypermarkets, with supermarkets registering lower growth. During the crisis period, the growth of discount stores and hypermarkets was similar, but notably lower than pre-crisis, and supermarket growth only fell marginally. No noticeable differences to this trend were observed in the 2008-2012 data set.

Figure 88: 2004-2012 data set: Total number of modern retail shops across CSAs by shop type (local level) – across 4 MS sample (source: EY analysis based on © Nielsen Trade Dimensions)

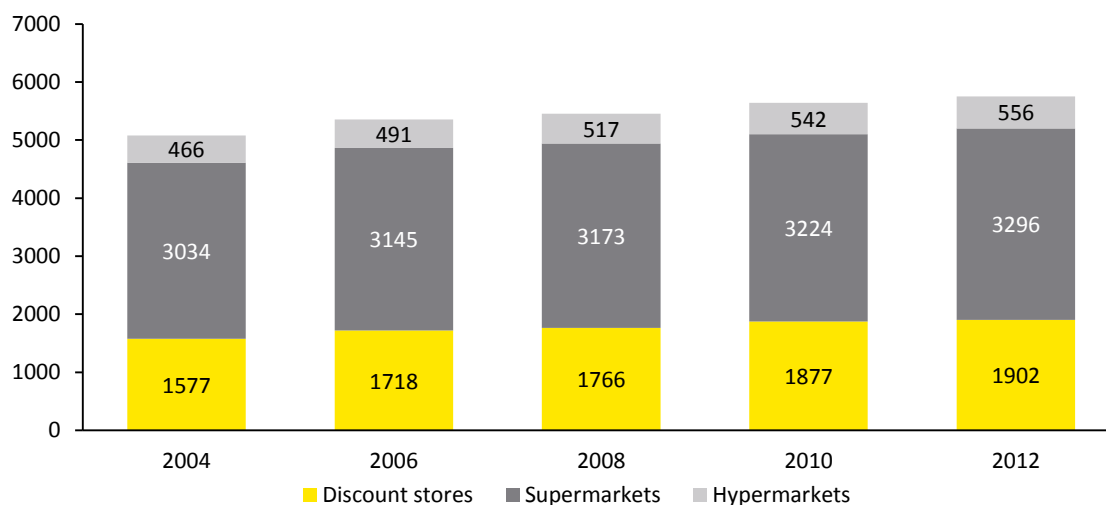
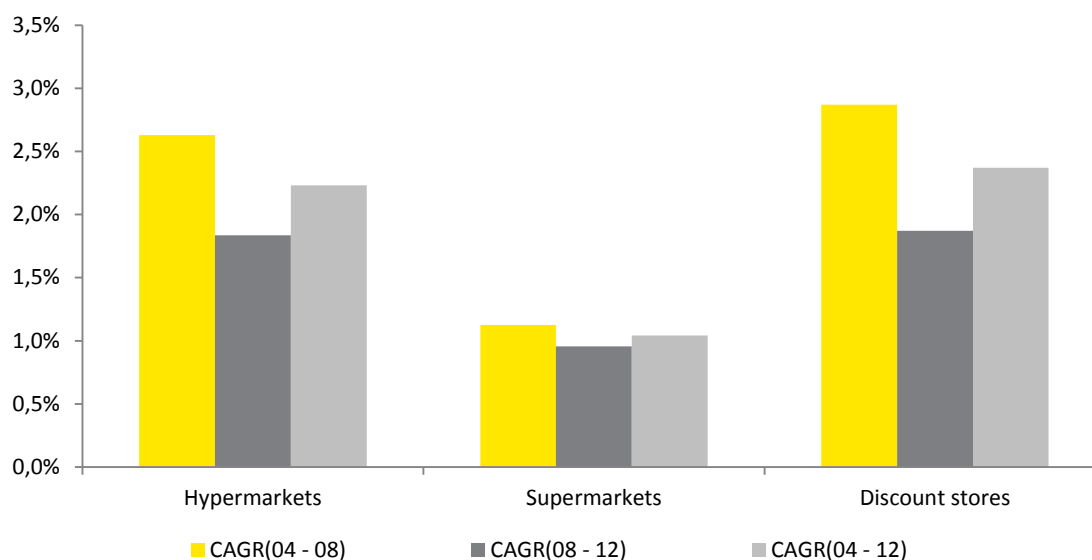


Figure 89: 2004-2012 data set: Total number of modern retail shops across CSAs by shop type (local level) – average CAGR across 4 MS sample (source: EY analysis based on © Nielsen Trade Dimensions)



Findings by Member States

At national level using © Planet Retail data, trends in the growth of each shop type as a whole within each MS have been different across MS.

Hypermarkets

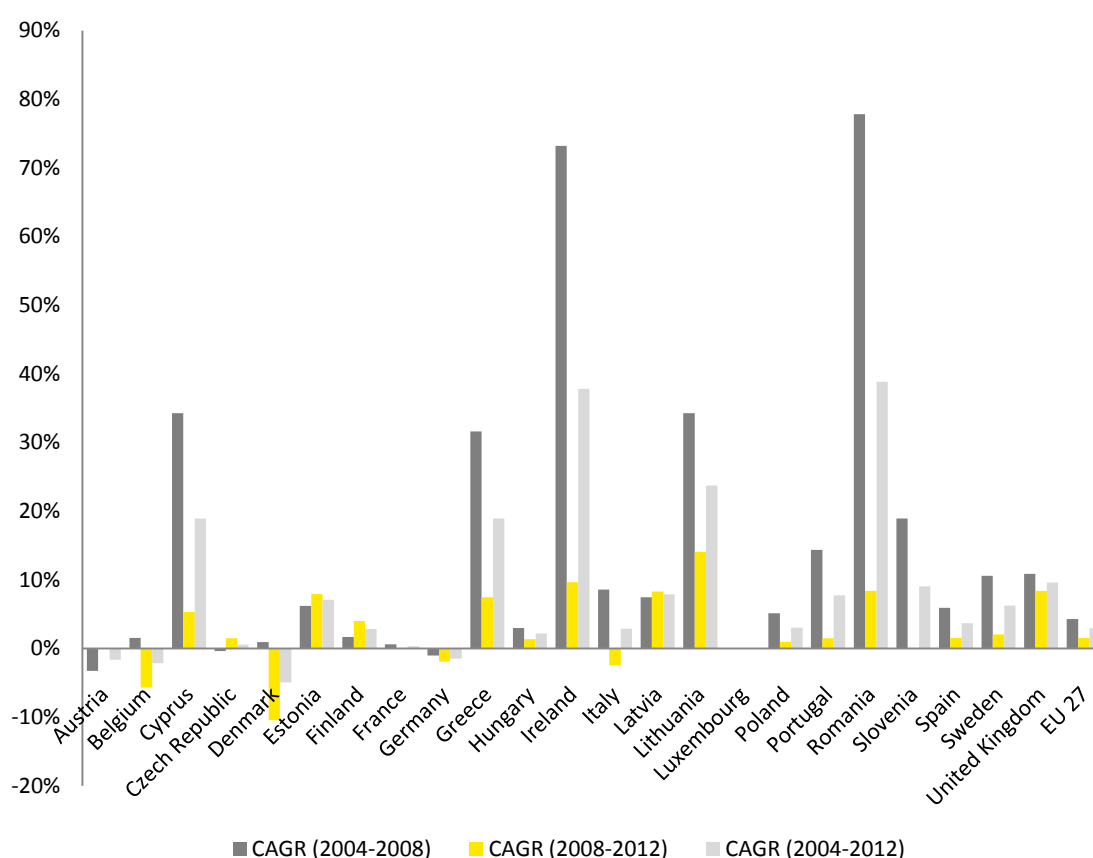
Across the 27 EU MS, hypermarkets grew on the whole by 4.3% annually during the pre-crisis period, and by 1.5% annually during the crisis period. Growth in hypermarkets has been highest in Romania, Ireland, Cyprus, Lithuania and Greece; whilst growth has been lowest or negative in Austria, Belgium, Denmark and Germany.

Across the sample MS over the past decade, hypermarkets also grew on the whole. During the pre-crisis period, growth was highest in Portugal, followed by Italy, whilst it

was lowest in France. By comparison, during the crisis, growth of hypermarkets declined, and only Portugal and Spain registered slightly positive growth, whilst Italy saw a reduction in the number of hypermarkets between 2008 and 2012.

Portugal’s relatively higher growth can possibly be explained by a less restrictive law on new large shop openings in March 2004. Other the other hand, Italy’s reduction in hypermarkets since 2008 could be the result of administrative procedures hindering the expansion of companies operating large-sized outlets. Obtaining authorisation for new large-sized store openings in Italy is characterized by significant administrative procedures designed to protect small shops. In spite of the important growth in hypermarkets over the period, their overall number remains low in comparison with other type of outlets (85 per MS in average in 2004 vs. 107 in 2012 whereas the average number of supermarkets and discount stores are respectively 1632 and 1452).

Figure 90: Growth in hypermarket outlets in the EU 27 (national level) - CAGR (source: EY analysis based on © Planet Retail)

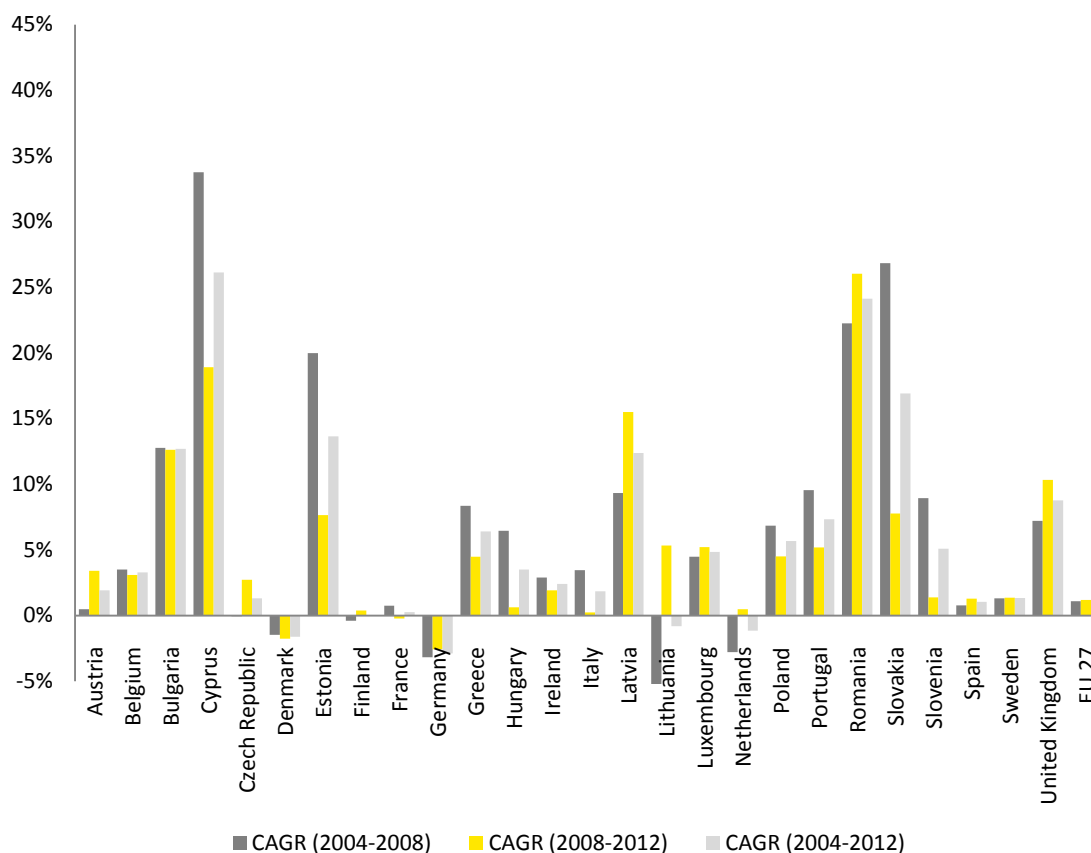


Supermarkets

Supermarkets grew on the whole over the last decade, by 1.1% annually during the pre-crisis period, and by 1.2% annually during the crisis period. Supermarkets accounted for 50% of total modern retail outlets in the EU 27 in 2004 compared to 47% in 2012. Growth in supermarkets has been highest in Cyprus, Romania, Slovakia, and Estonia; whilst growth has been lowest or negative in Denmark, Germany and the Netherlands.

Across the sample MS over the past decade, supermarkets also grew. During the pre-crisis period, growth was highest in Portugal, followed by Italy, whilst it was lowest in France and Spain. By comparison, during the crisis, growth of supermarkets declined markedly. Growth remained relatively high in Portugal, and Spain saw higher growth in the crisis period than the pre-crisis period. Highest growths correspond to MS where initial values were low (under 100 outlets).

Figure 91: Growth in supermarket outlets in the EU 27 (national level) - CAGR (source: EY analysis based on © Planet Retail)

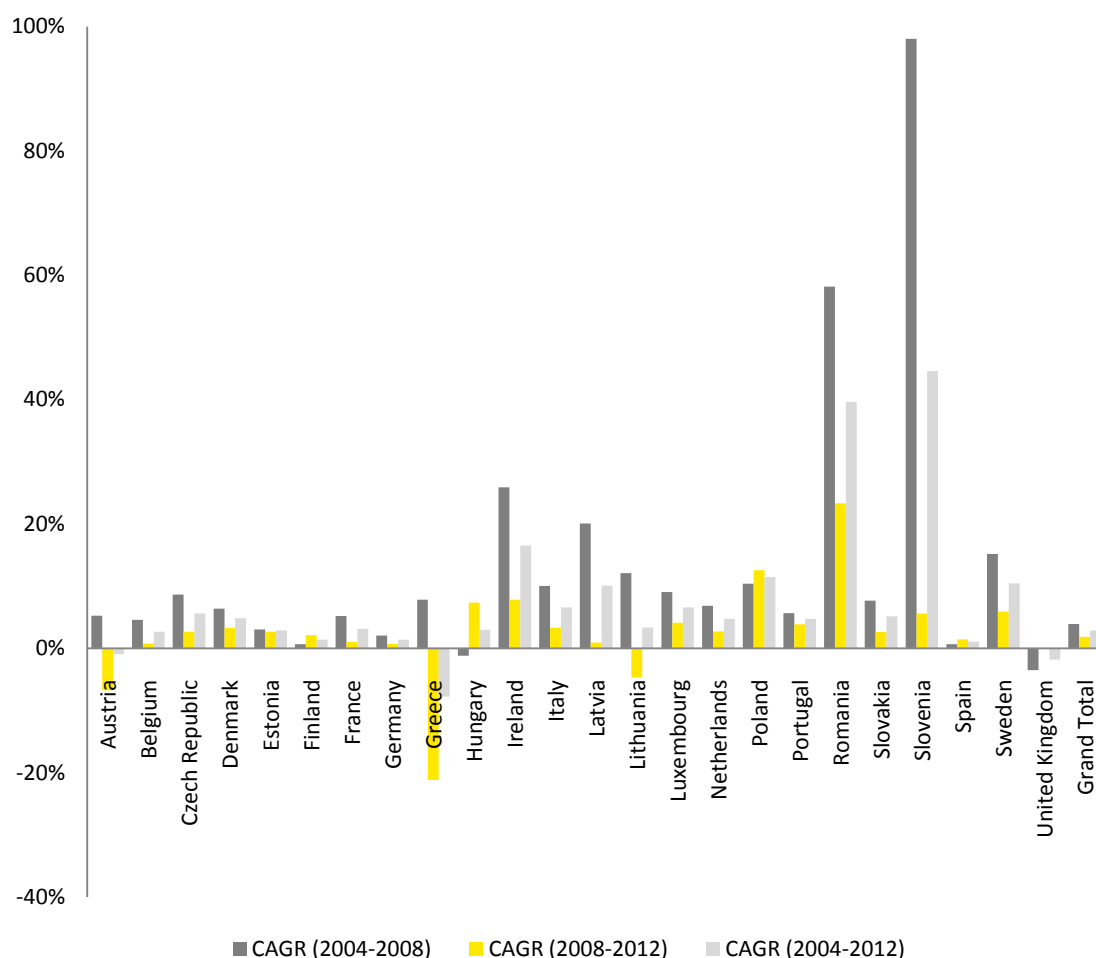


Discount stores

Discount stores grew the most of the modern retail shop types in the EU 27 over the past decade, by 3.9% annually during the pre-crisis period, and by 1.9% annually during the crisis period. Discount stores accounted for 47% of total modern retail outlets in the EU 27 in 2004 compared to 50% in 2012. Growth in discount stores has been highest in Slovenia, Romania, Ireland, and Latvia; whilst growth has been lowest or negative in Austria and Greece.

Across the sample MS over the past decade, discount stores also grew the most of all shop types. During the pre-crisis period, growth was highest in Italy, followed by Portugal, whilst it was lowest in Spain. By comparison, during the crisis, growth of discount stores declined. Growth remained relatively high in Portugal and Italy, and Spain saw higher growth in the crisis period than the pre-crisis period. Highest growths also correspond to MS where initial levels in 2004 were very low (under 100 outlets).

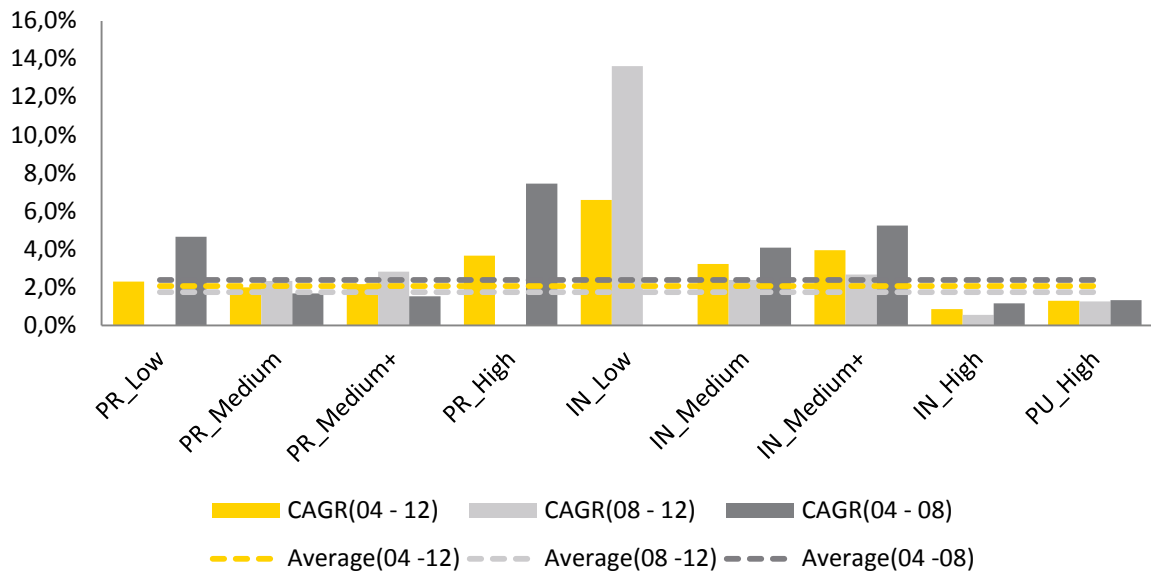
Figure 92: Growth in discount store outlets in the EU 27 (national level) - CAGR (source: EY analysis based on © Planet Retail)



Findings by consumer shopping area type

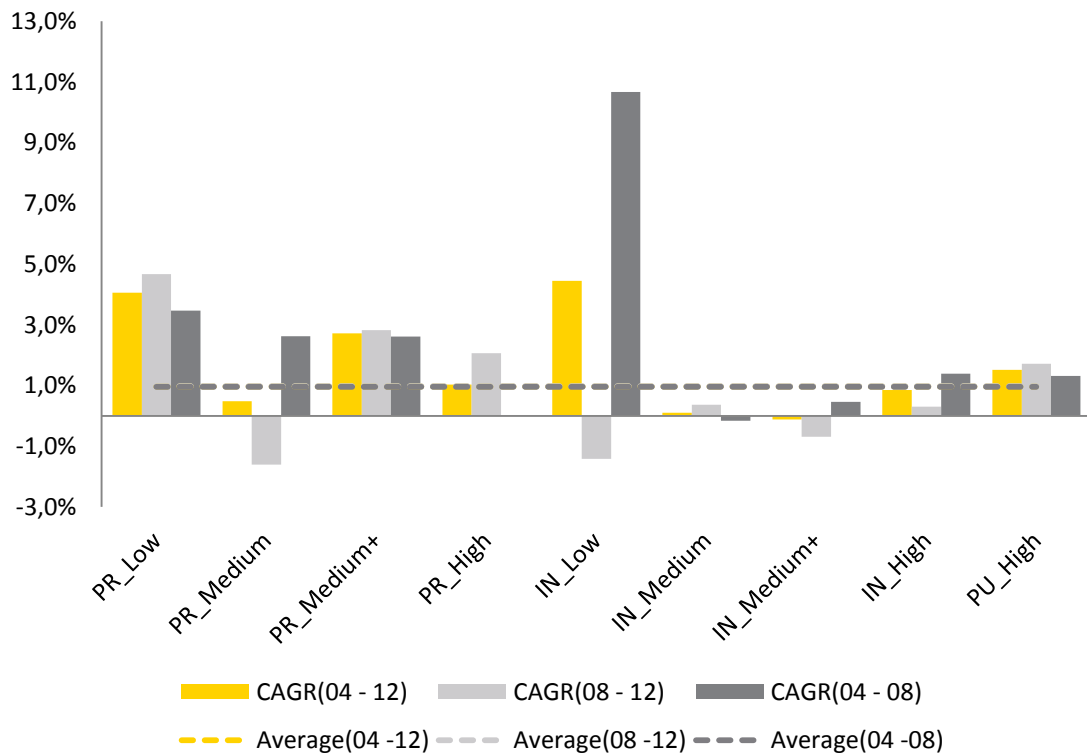
Variations in trends have been observed using © Nielsen Trade Dimensions data across different CSA types in the sample of shops, CSAs and MS. For hypermarkets, the highest growth was observed in intermediate / low GDP areas (due to very high growth in the crisis period), whilst the lowest growth was observed in intermediate / high GDP areas. Figure 93, Figure 94 and Figure 95 below present the trends for the 2004-2012 data set covering 4 MS, as the 2008-2012 data set shows predominantly similar trends.

Figure 93: 2004-2012 data set: Growth of hypermarkets by CSA type (local level) – CAGR across 4 MS sample (source: EY analysis based on © Nielsen Trade Dimensions)



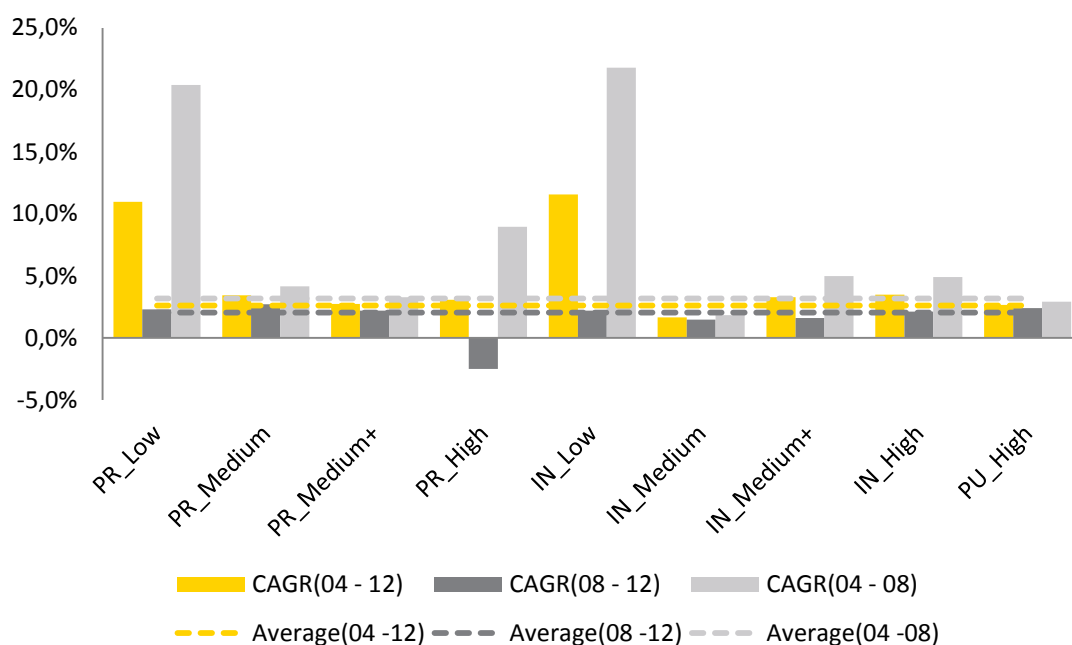
For supermarkets, the highest growth was observed in intermediate / low GDP areas (due to very high growth in the pre-crisis period) and predominantly rural / low GDP areas, whilst the lowest growth was observed in intermediate / medium GDP areas.

Figure 94: 2004-2012 data set: Growth of supermarkets by CSA type (local level) – CAGR across 4 MS sample (source: EY analysis based on © Nielsen Trade Dimensions)



For discount stores, once again the highest growth was observed in intermediate / low GDP areas and predominantly rural / low GDP areas (both due to very high growth in the pre-crisis period), whilst the lowest growth was observed in intermediate / medium GDP areas.

Figure 95: 2004-2012 data set: Growth of discount stores by CSA type (local level) – CAGR across 4 MS sample (source: EY analysis based on © Nielsen Trade Dimensions)



5.5.3. Shop size

Summary of findings

In the sample of CSAs, the average shop size for 2 of the 3 modern retail formats has increased on the whole over the past decade. This figure is confirmed by the average size of shops in the EU 27 which grew by 75% over the last decade. Discount stores have grown on average by 2% over the last decade, with higher growth in the pre-crisis period (2.4%) than during the crisis period (1.5%). Supermarkets have grown on average by 1.1% over the last decade, once again with higher growth in the pre-crisis period (1.6%) than during the crisis period (0.6%). On the other hand, hypermarkets have decreased on average by -0.5% over the last decade, with a higher decrease during the crisis period (-0.8%) than the pre-crisis period (-0.1%). The 2008-2012 largely confirmed these trends however growth is stable for supermarkets in this sample.

Findings by Member State

Variations in trends have been observed across different MS. As shown in the figures below, for hypermarkets, the decrease in average size has mainly been due to Portugal and Spain, and to a lesser extent, France. Average shop size has only grown over the past decade in Italy, and over the 2008-2012 period it grew in Belgium.

Figure 96: 2004-2012 data set: Average sales area for hypermarkets by MS (local level) – CAGR for 4 MS sample (source: EY analysis based on © Nielsen Trade Dimensions)

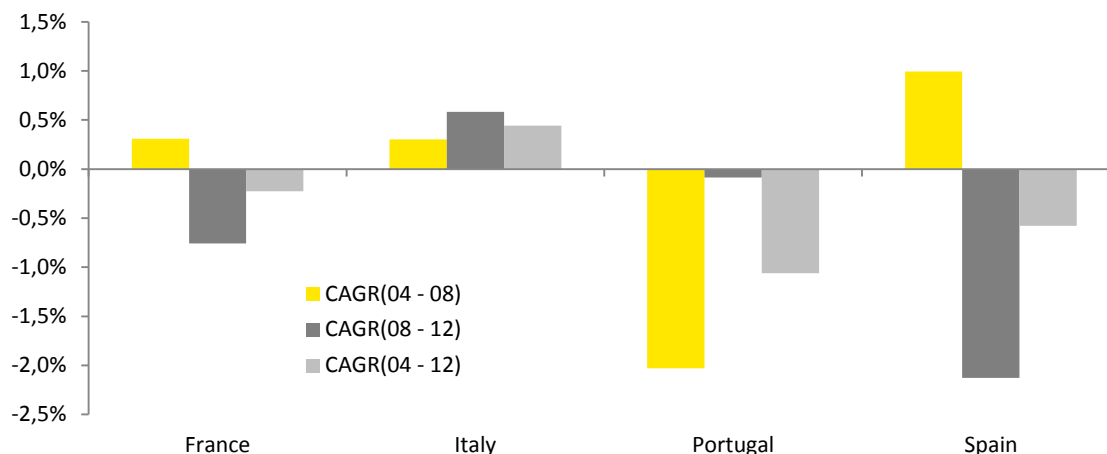
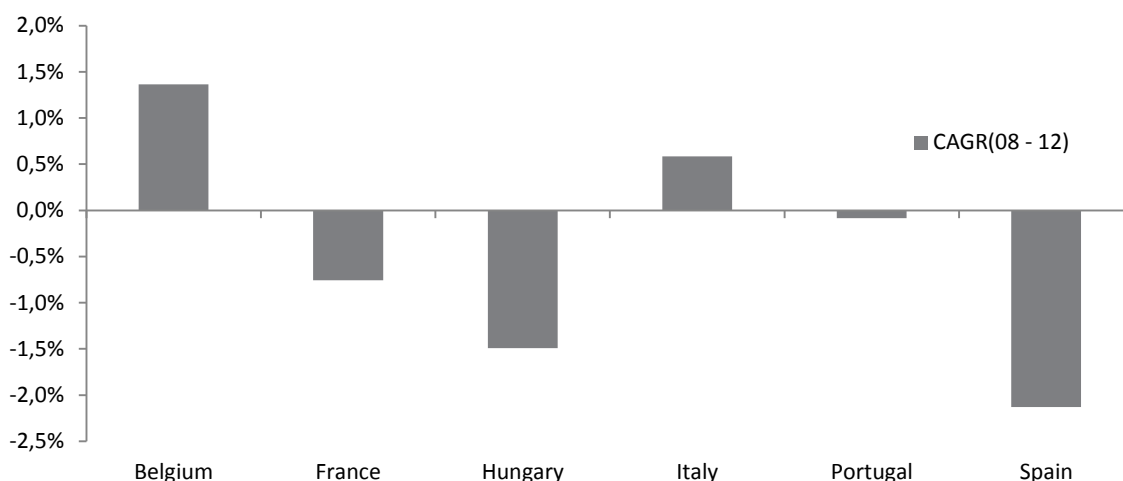


Figure 97: 2008-2012 data set: Average sales area for hypermarkets by MS (local level) – CAGR for 6 MS sample (source: EY analysis based on © Nielsen Trade Dimensions)



The figures observed in the CSAs using © Nielsen Trade Dimensions closely reflect the trends in the wider Member States, using © Planet Retail data. As shown in the Figure 98 and Figure 99 below, on the whole across this sample of MS, the same trend is observed in Portugal, Spain, Hungary and Belgium. Average hypermarket size across France has slightly increased whilst in Italy average size has slightly decreased.

Figure 98: 2004-2012 data set: Average sales area of hypermarkets per MS (national level) – in m² for 4 MS sample (source: EY analysis based on © Planet Retail)

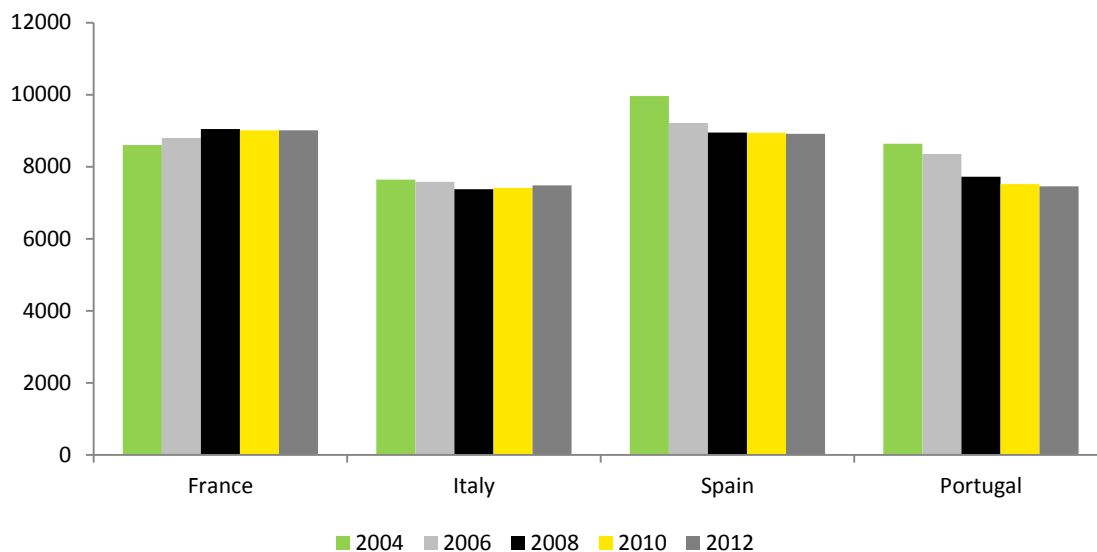


Figure 99: 2008-2012 data set: Average sales area of hypermarkets per MS (national level) – in m² for 6 MS sample (source: EY analysis based on © Planet Retail)

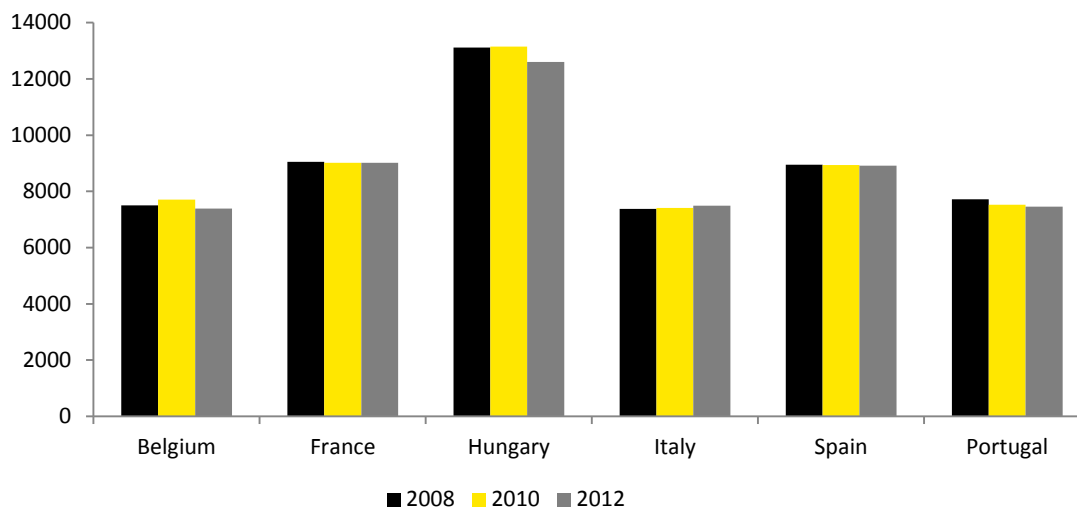


Figure 100 and Figure 101 below illustrate that for supermarkets, the slight growth in average size has been due to Portugal, Spain and Italy. Average shop size decreased in France over this period, and for the 2008-2012 period it decreased in Belgium, France and Hungary.

Figure 100: 2004-2012 data set: Average sales area for supermarkets by MS (local level) – CAGR for 4 MS sample (source: EY analysis based on © Nielsen Trade Dimensions)

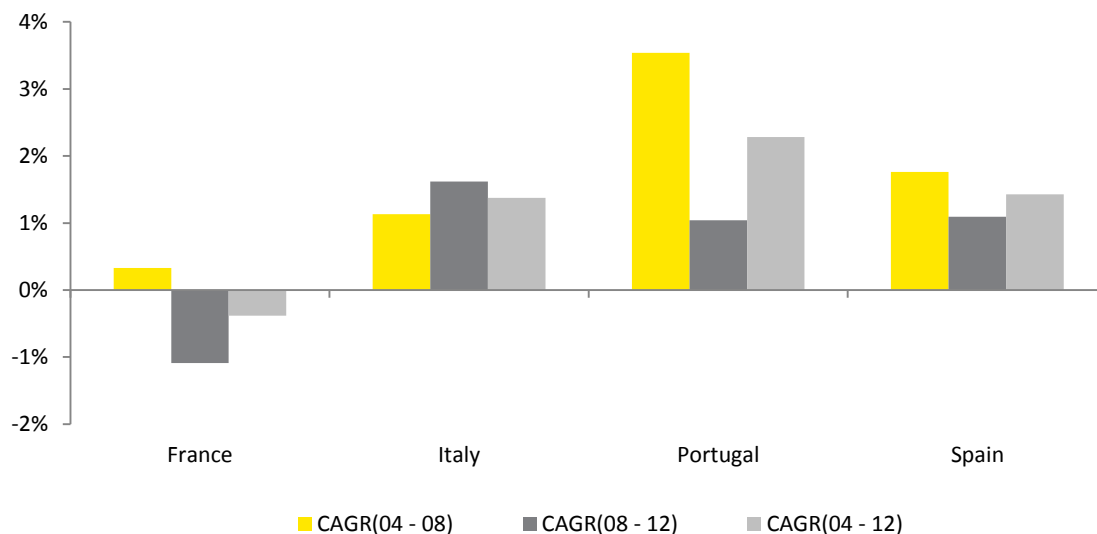
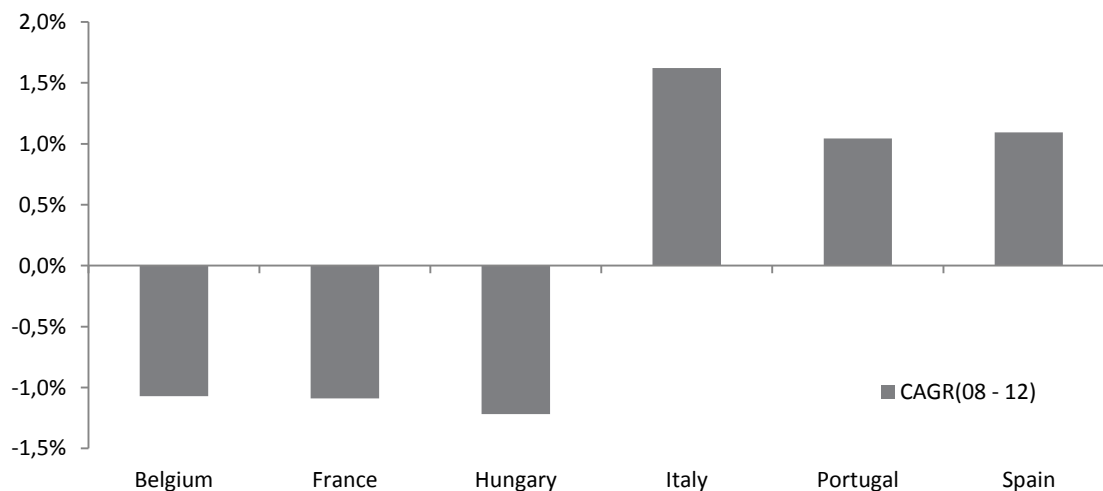


Figure 101: 2008-2012 data set: Average sales area for supermarkets by MS (local level) – CAGR for 6 MS sample (source: EY analysis based on © Nielsen Trade Dimensions)



The figures observed in the CSAs show some differences with national sources. As illustrated in Figure 102 and Figure 103 below, on the whole across this sample of MS, the same trend is observed in Spain, Italy and Belgium. However average supermarket size trends differ for France, Portugal and Hungary, due to the differences between the MS as a whole and the CSAs selected.

Figure 102: 2004-2012 data set: Average sales area of supermarkets per MS (national level) – in m² for 4 MS sample (source: EY analysis based on © Planet Retail)

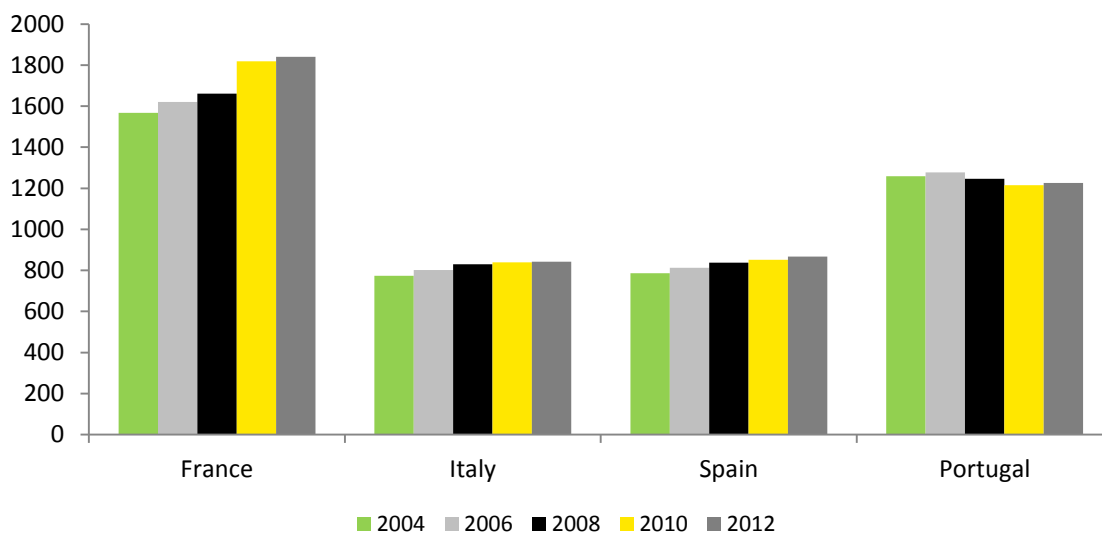
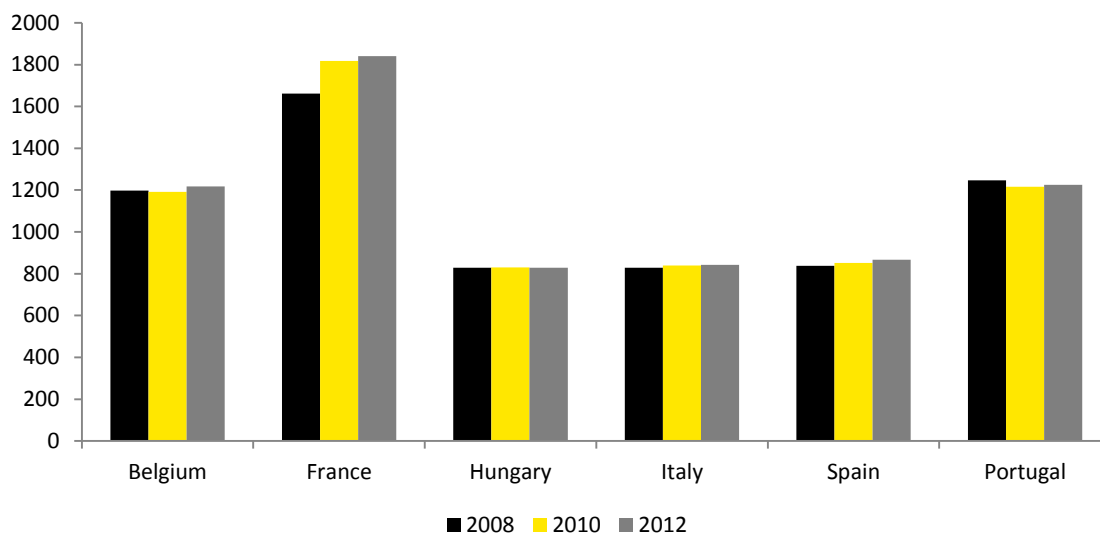


Figure 103: 2008-2012 data set: Average sales area of supermarkets per MS (national level) – in m² for 6 MS sample (source: EY analysis based on © Planet Retail)



As shown in Figure 104 below, for discount stores, the growth in average size has been due to Italy and Spain. Average shop size grew the least in Portugal over this period. In the 2008-2012 period, in Figure 105 below, the two MS that saw the highest growth were Belgium and Hungary.

Figure 104: 2004-2012 data set: Average sales area for discount stores by MS (local level) – CAGR for 4 MS sample (source: EY analysis based on © Nielsen Trade Dimensions)

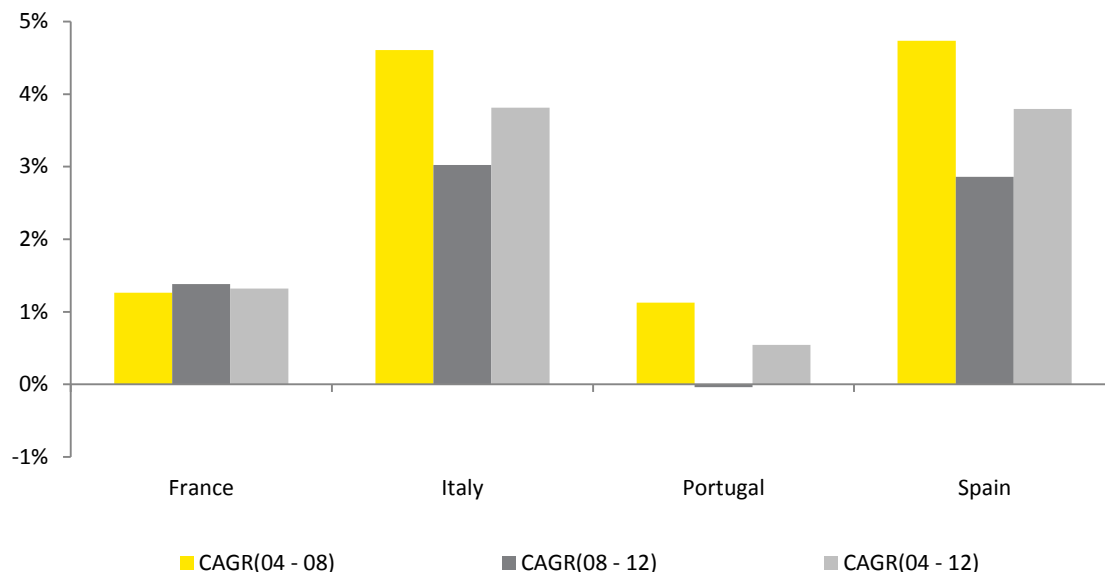
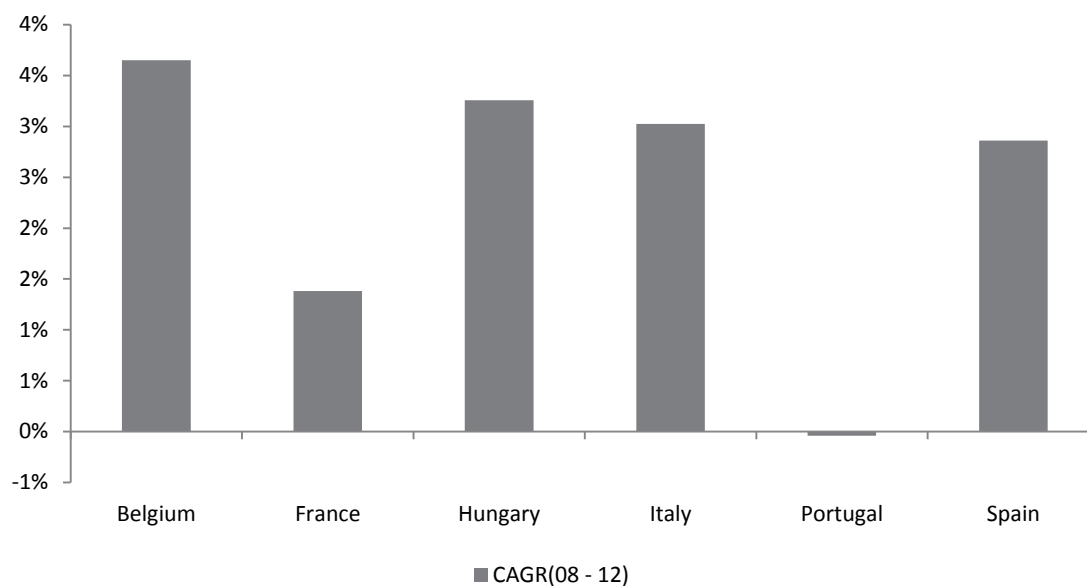


Figure 105: 2008-2012 data set: Average sales area for discount stores by MS (local level) – CAGR for 6 MS sample (source: EY analysis based on © Nielsen Trade Dimensions)



The figures observed in the CSAs above are fully reflected in the wider MS, using © Planet Retail. As shown in Figure 106 and Figure 107 below covering the MS as a whole, average sales area of discount stores increased across all MS in the sample.

Figure 106: 2004-2012 data set: Average sales area of discount stores per MS (national level) – in m² for 4 MS sample (source: EY analysis based on © Planet Retail)

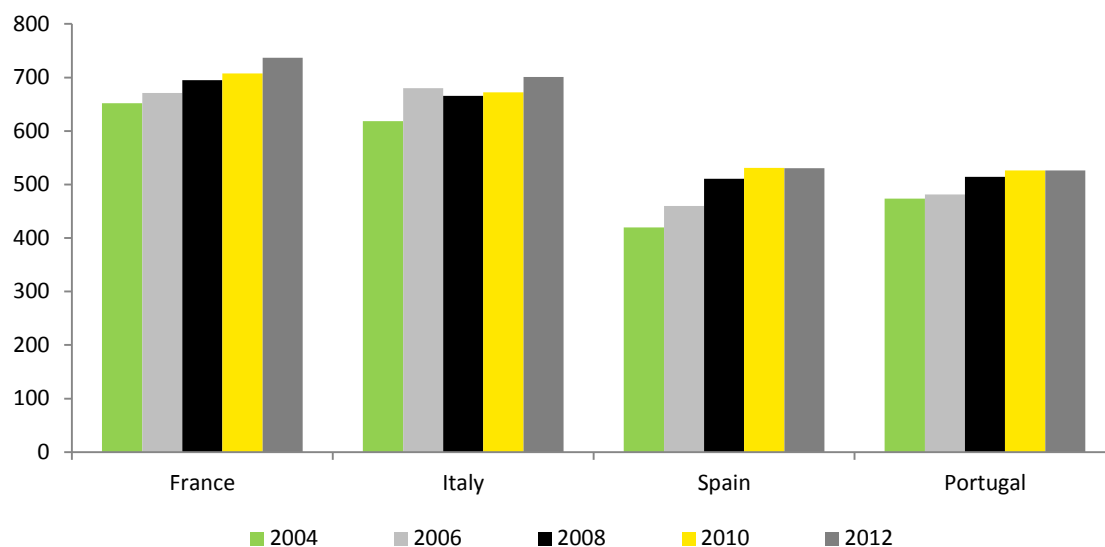
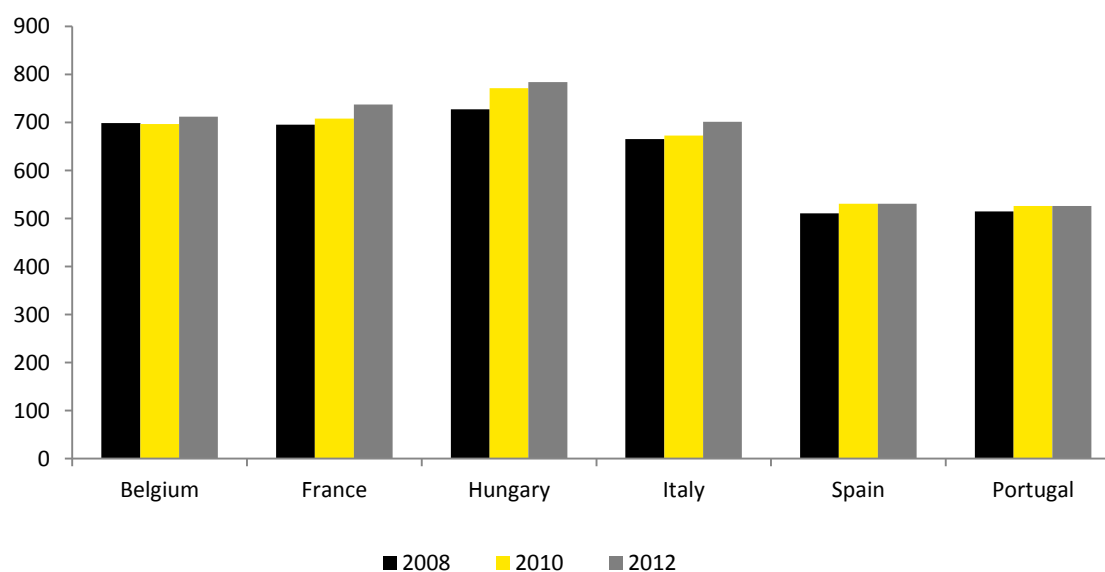


Figure 107: 2008-2012 data set: Average sales area of discount stores per MS (national level) – in m² for 6 MS sample (source: EY analysis based on © Planet Retail)



5.5.4. Private label share

Summary of findings

In this study, private label share has been measured both at national level, in terms of sales market share for private labels products, and at local level, by share of private label EANs on shop shelves.

At local level, there are a higher proportion of private label products on shop shelves, and at national level the market share of private labels has increased. This is the case in all sample MS and across all 23 sample product categories.

Findings by Member State

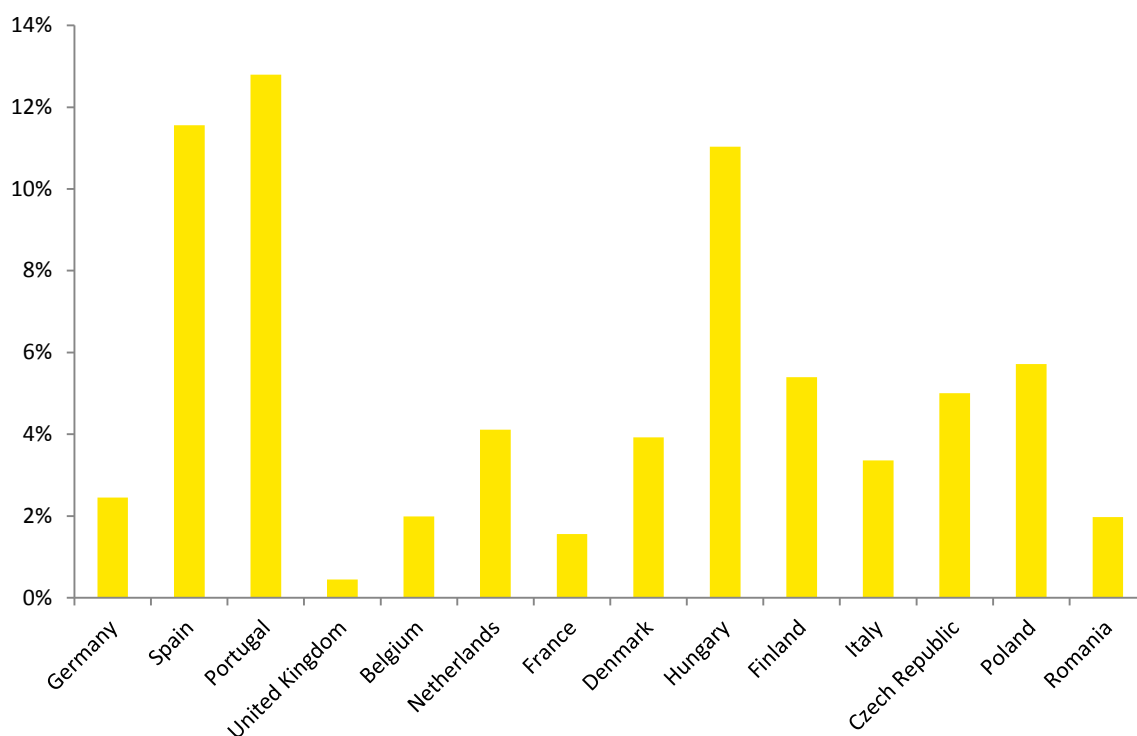
At procurement level, private label share ranges from 4.5% on average in Romania to 32.9% on average in Germany. There are 3 MS where private label share averaged across the 23 product category sample exceeded 30% in 2012 – Germany, Spain, and Portugal. There were an additional 3 MS with an average between 25% and 30% on average – United Kingdom, Belgium and the Netherlands. On the other hand, there were 3 MS with less than 15% private label share on average – Romania, Poland and Czech Republic.

Table 21: Private label sales share (national level) averaged across 23 product category sample (source: EY analysis based on © Euromonitor International)

| Rank | Member State | Population (m) | 2004 | 2006 | 2008 | 2010 | 2012 | CAGR (04-12) |
|------|----------------|----------------|-------|-------|-------|-------|-------|--------------|
| 1 | Germany | 81.797 | 30,48 | 32,18 | 33,38 | 33,54 | 32,93 | 1,0% |
| 2 | Spain | 46.174 | 20,55 | 22,36 | 24,99 | 28,73 | 32,11 | 5,7% |
| 3 | Portugal | 10.557 | 17,26 | 19,66 | 23,56 | 27,37 | 30,05 | 7,2% |
| 4 | United Kingdom | 62.271 | 29,15 | 29,13 | 29,52 | 29,52 | 29,60 | 0,2% |
| 5 | Belgium | 11.047 | 27,51 | 28,61 | 28,98 | 29,25 | 29,51 | 0,9% |
| 6 | Netherlands | 16.693 | 23,75 | 24,87 | 25,37 | 26,76 | 27,86 | 2,0% |
| 7 | France | 65.161 | 23,26 | 24,05 | 24,93 | 25,45 | 24,82 | 0,8% |
| 8 | Denmark | 5.570 | 17,68 | 18,69 | 19,54 | 20,06 | 21,60 | 2,5% |
| 9 | Hungary | 9.971 | 8,65 | 11,88 | 15,89 | 18,51 | 19,68 | 10,8% |
| 10 | Finland | 5.388 | 13,61 | 15,11 | 16,01 | 17,60 | 19,01 | 4,3% |
| 11 | Italy | 60.723 | 12,41 | 13,06 | 13,61 | 14,75 | 15,77 | 3,0% |
| 12 | Czech Republic | 10.496 | 8,22 | 9,81 | 11,71 | 12,44 | 13,22 | 6,1% |
| 13 | Poland | 38.534 | 5,48 | 6,26 | 6,80 | 7,98 | 11,20 | 9,3% |
| 14 | Romania | 21.384 | 2,59 | 3,53 | 3,51 | 3,81 | 4,56 | 7,3% |

Private label share has grown on average across all MS in the 14 MS sample. As shown in Figure 108 below, progression in private label market share over the last decade in terms of average percentage point growth across the 23 categories differed to a large extent amongst MS. Highest growth was observed in Spain, Portugal and Hungary, whilst the lowest growth was seen in the UK, France, Belgium and Romania.

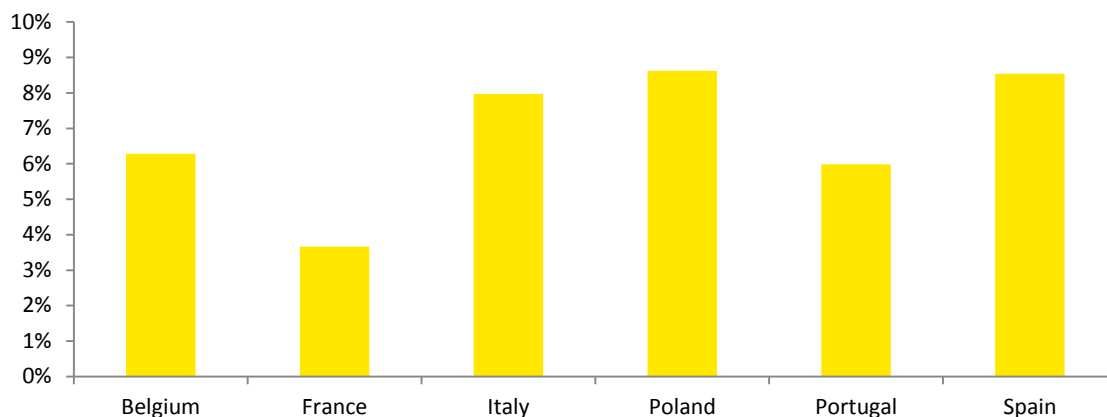
Figure 108: Progression in % points of private label market share from 2004 to 2012 for 14 MS sample (national level) - average across 23 product categories (source: EY analysis based on © Euromonitor International)



As an illustrative of a practical case: In France, the Loi de Modernisation de l'Economie (Law on the Modernisation of the Economy (LME)) was passed in July 2008 to modernise the French economy and encourage competition and commerce in France. The LME allowed retailers to directly negotiate the terms and conditions of sale and prices of suppliers, effectively enabling retailers to negotiate different prices for products with manufacturers and to integrate back margins into the sales prices. This resulted in decrease in the price gap between private labels and manufacturer brands, making private labels less attractive for consumers. This has consequently impacted the market share of private labels in France since 2009. Furthermore, the discount store format has become less attractive to consumers relative to supermarkets and hypermarkets.

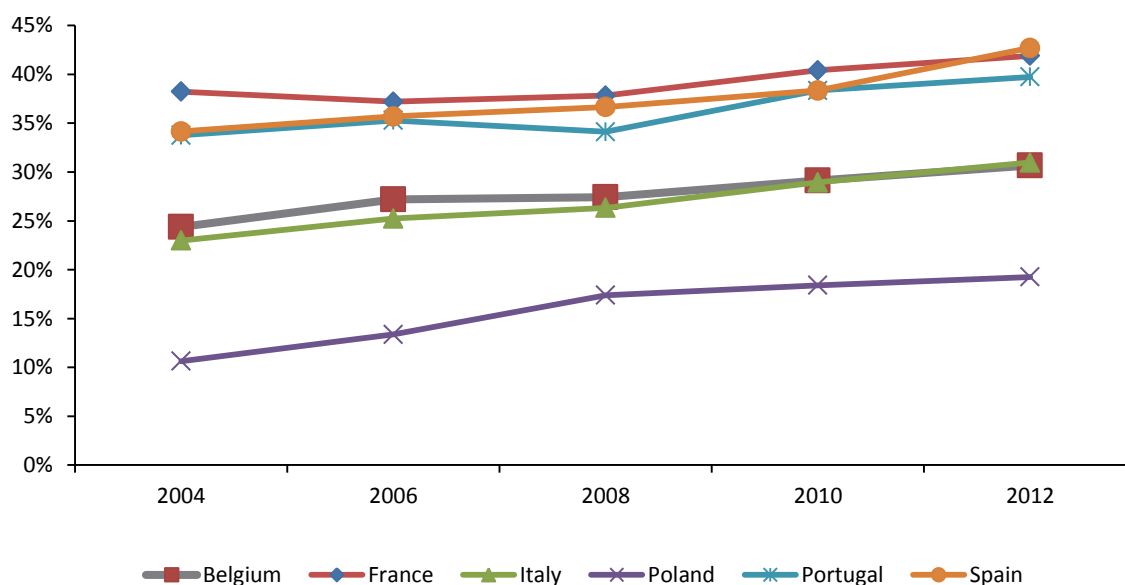
At local level, private label share has grown across all MS. Based on the sample and irrespective of shop type, growth in private label EAN share over the last decade when comparing 2012 with 2004 was highest in Poland, followed by Spain and Italy, whilst France registered the lowest gain in private label EAN share. In all MS with the exception of Portugal, private label growth was higher in the pre-crisis period than the crisis period. These trends are presented in Figure 109 below.

Figure 109: 2004-2012 data set: Progression in % points of private label EAN share from 2004 to 2012 for 6 MS sample (local level) - average across 23 product categories (source: EY analysis based on © Nielsen Opus)



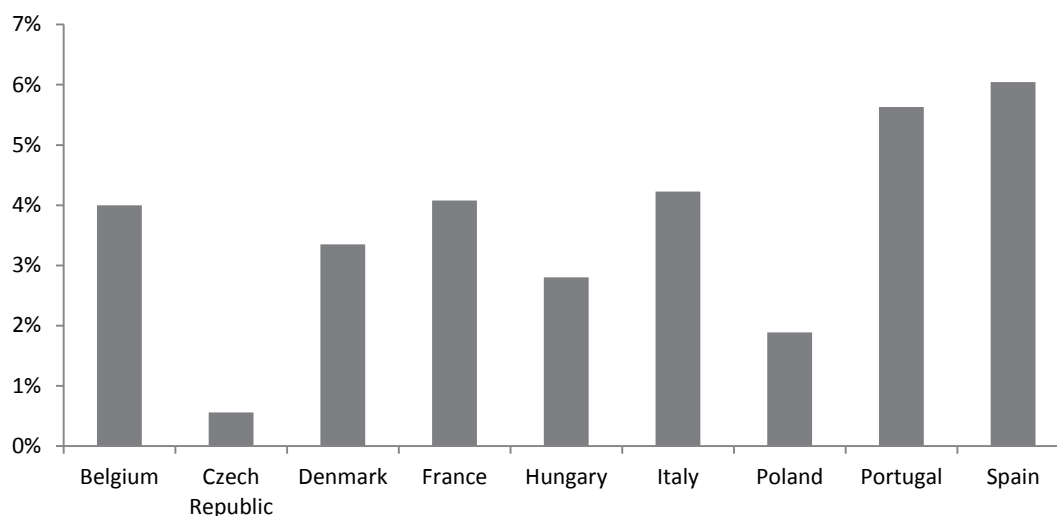
In terms of proportion of private labels compared to total EAN, Spain (43% in 2012) and France (42% in 2012) have the highest average number across the 23 product categories, whilst Poland (19% in 2012) has the lowest proportion, as illustrated below.

Figure 110: 2004-2012 data set: Proportion of private label EAN for 6 MS sample (local level) - average across 23 product categories (source: EY analysis based on © Nielsen Opus)



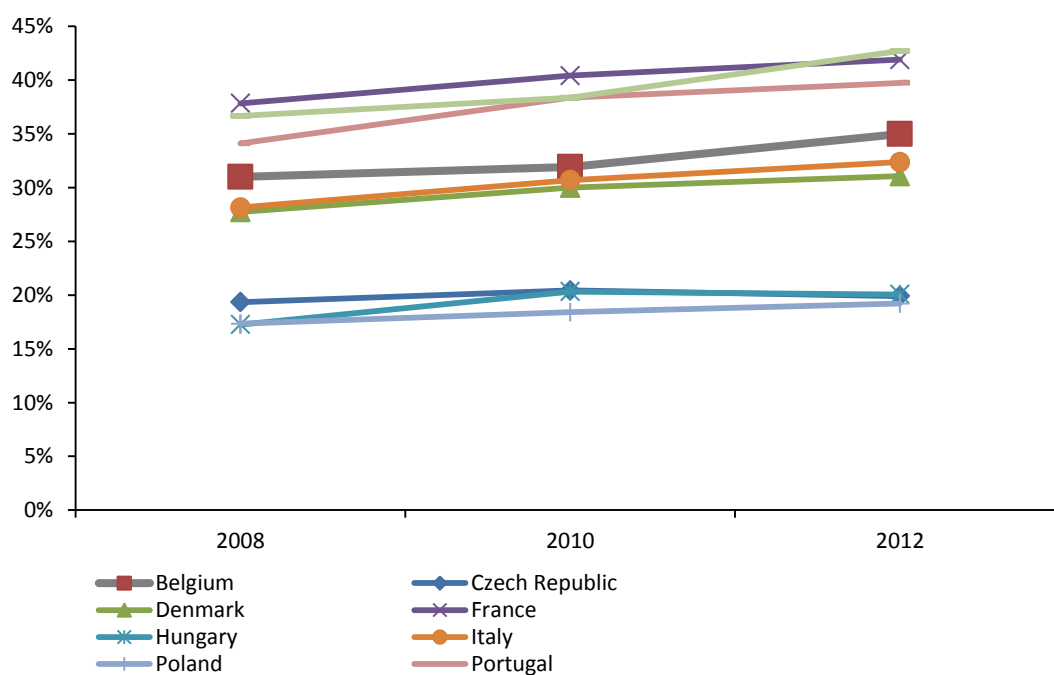
As can be seen in Figure 111 below, since 2008 the trend has been slightly different. Highest average growth during this crisis period has been observed in Spain and Portugal, followed by Italy, France and Belgium, whilst the lowest gain in terms of percentage points was in Czech Republic.

Figure 111: 2008-2012 data set: Progression in % points of private label EAN share from 2008 to 2012 for 9 MS sample (local level) - average across 23 product categories (source: EY analysis based on © Nielsen Opus)



In terms of proportion of private labels compared to total EAN during the 2008 to 2012 period in the sample shown in Figure 112 below, France and Spain still have the highest number. On average across the 23 product categories, Denmark has 31% private label share in 2012, while Hungary and Czech Republic have 20%. It is important to note however that these latter results are based on limited observations.

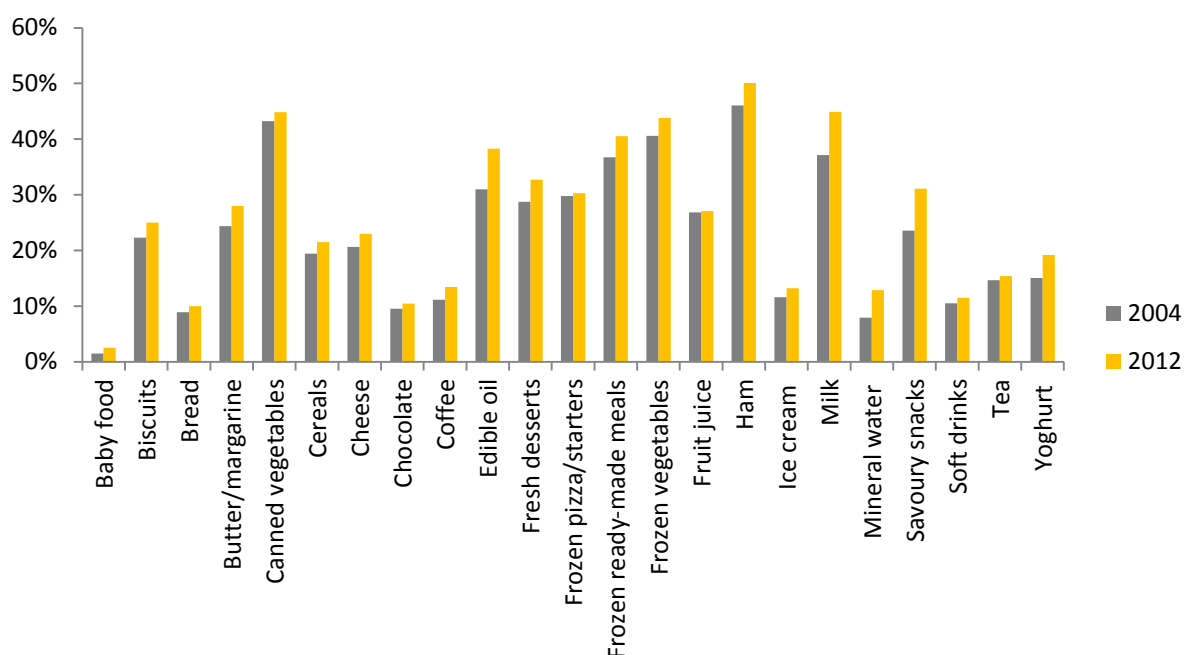
Figure 112: 2008-2012 data set: Proportion of private label EAN for 9 MS sample (local level) - average across 23 product categories (source: EY analysis based on © Nielsen Opus)



Findings by product category

The market share of private labels is very different from one product to another. At procurement level using © Euromonitor International data, the product categories with the highest private label market share averaged across the sample of 14 MS were ham/delicatessen, milk, frozen vegetables and canned vegetables. The product categories where market share has grown the most on average over the past decade and across MS are milk, savoury snacks, and edible oil, as illustrated below.

Figure 113: Percentage of private label sales share by product category - average across 14 MS (national level) (source: EY analysis based on © Euromonitor International)



Note: Euromonitor bread category covers a wider range of products than fresh prepackaged bread only.

In terms of evolutions over time, private label market share has also grown on average across all product categories in the sample of 6 MS, as illustrated below, despite significant differences between categories when compared to the sample of 14 MS. Milk, fresh pre-packaged bread, ready-cooked meals and ham/delicatessen saw the greatest average increase in percentage point share over the decade, whilst average growth was lowest for baby food and butter/margarine.

Table 22: Evolution of private label market share from 2004 to 2012 (national level) - average across 6 MS sample (source: EY analysis based on © Euromonitor International)

| Percentage of private label EANs by product category (%) | 2004 | 2006 | 2008 | 2010 | 2012 | Progression 2004-2012 |
|--|------|------|------|------|------|-----------------------|
| Baby food (ambient) | 1,2 | 1,3 | 1,5 | 1,9 | 2,3 | 1,0 |
| Biscuits | 17,8 | 19,6 | 21,2 | 22,7 | 24,1 | 6,2 |
| Butter/margarine | 7,0 | 7,4 | 7,8 | 7,9 | 8,7 | 1,7 |
| Canned vegetables | 16,3 | 17,1 | 18,6 | 19,9 | 21,5 | 5,2 |
| Cereals | 34,5 | 36,0 | 37,3 | 38,7 | 39,5 | 5,0 |
| Cheese | 14,2 | 15,8 | 18,0 | 19,2 | 20,4 | 6,3 |
| Chocolate (Bar + Candies) | 14,2 | 15,0 | 16,4 | 17,8 | 18,8 | 4,6 |

| Percentage of private label EANs by product category (%) | 2004 | 2006 | 2008 | 2010 | 2012 | Progression 2004-2012 |
|--|------|------|------|------|------|-----------------------|
| Coffee | 6,3 | 7,2 | 7,9 | 8,7 | 9,5 | 3,2 |
| Dessert | 9,0 | 9,6 | 10,1 | 11,0 | 12,5 | 3,5 |
| Edible oil | 17,0 | 18,5 | 19,9 | 21,1 | 23,2 | 6,2 |
| Fresh pre-packaged bread | 29,4 | 31,5 | 33,5 | 35,6 | 37,5 | 8,1 |
| Frozen vegetables | 24,5 | 26,1 | 28,2 | 29,0 | 29,9 | 5,4 |
| Fruit juices (ambient) | 26,5 | 29,0 | 31,3 | 32,1 | 32,7 | 6,3 |
| Ham/delicatessen | 32,1 | 35,6 | 37,5 | 39,0 | 39,6 | 7,4 |
| Ice cream | 19,3 | 20,2 | 21,1 | 22,3 | 23,1 | 3,8 |
| Milk | 32,8 | 35,7 | 37,8 | 41,0 | 42,5 | 9,6 |
| Mineral water | 9,6 | 10,4 | 11,5 | 12,6 | 13,7 | 4,1 |
| Ready-cooked meals | 26,4 | 27,9 | 29,7 | 31,4 | 34,0 | 7,6 |
| Savoury snacks | 9,2 | 10,3 | 11,8 | 13,6 | 14,2 | 5,0 |
| Soft-drinks | 16,7 | 18,1 | 20,4 | 22,0 | 22,8 | 6,0 |
| Starters/pizzas | 8,5 | 9,1 | 10,2 | 11,4 | 11,9 | 3,4 |
| Tea | 10,2 | 11,1 | 11,2 | 12,3 | 13,4 | 3,2 |
| Yoghurt | 10,1 | 10,8 | 11,9 | 13,1 | 15,0 | 4,9 |

Note: Euromonitor bread category covers a wider range of products than fresh prepackaged bread only.

At local level, the product categories with the highest proportion of private label EANs were frozen vegetables (53% in 2012), ice cream (48%), desserts (48%) and ready cooked meals (46%); whilst the lowest were baby food (12%), chocolate (22%) and tea (27%). These trends are presented in Table 23 below.

Table 23: 2004-2012 data set: Proportion of private label EAN by product category (local level) - average across 6 MS sample (source: EY analysis based on © Nielsen Opus)

| Percentage of private label EANs by product category (%) | 2004 | 2006 | 2008 | 2010 | 2012 | Progression 2004-2012 |
|--|------|------|------|------|------|-----------------------|
| Baby food (ambient) | 8% | 8% | 9% | 11% | 12% | 4% |
| Biscuits | 27% | 28% | 29% | 32% | 34% | 6% |
| Butter/margarine | 27% | 27% | 27% | 29% | 30% | 3% |
| Canned vegetables | 41% | 42% | 43% | 43% | 44% | 3% |
| Cereals | 40% | 37% | 37% | 39% | 41% | 1% |
| Cheese | 24% | 26% | 27% | 31% | 33% | 9% |
| Chocolate (Bar + Candies) | 19% | 20% | 21% | 22% | 22% | 3% |
| Coffee | 28% | 28% | 28% | 29% | 30% | 2% |
| Dessert | 42% | 43% | 45% | 46% | 48% | 6% |
| Edible oil | 27% | 25% | 24% | 27% | 28% | 2% |
| Fresh pre-packaged bread | 21% | 26% | 27% | 28% | 30% | 9% |
| Frozen vegetables | 45% | 45% | 47% | 50% | 53% | 8% |
| Fruit juices (ambient) | 37% | 40% | 41% | 44% | 44% | 7% |

| Percentage of private label EANs by product category (%) | 2004 | 2006 | 2008 | 2010 | 2012 | Progression 2004-2012 |
|--|------|------|------|------|------|-----------------------|
| Ham/delicatessen | 29% | 30% | 29% | 32% | 34% | 4% |
| Ice cream | 38% | 40% | 41% | 46% | 48% | 9% |
| Milk | 24% | 26% | 26% | 30% | 31% | 7% |
| Mineral water | 24% | 27% | 26% | 26% | 28% | 4% |
| Ready-cooked meals | 35% | 38% | 41% | 44% | 46% | 10% |
| Savoury snacks | 29% | 30% | 32% | 33% | 35% | 6% |
| Soft-drinks | 28% | 30% | 32% | 32% | 31% | 3% |
| Starters/pizzas | 35% | 35% | 37% | 40% | 42% | 8% |
| Tea | 22% | 21% | 21% | 23% | 27% | 4% |
| Yoghurt | 28% | 31% | 34% | 36% | 38% | 11% |

Similar to the 2004-2012 data set, in 2008-2012 as seen in Figure 114 below, frozen vegetables (51% in 2012), desserts (46%) and ice cream (46%) have the highest proportion of private label EANs, whilst baby food (10%) has the lowest proportion.

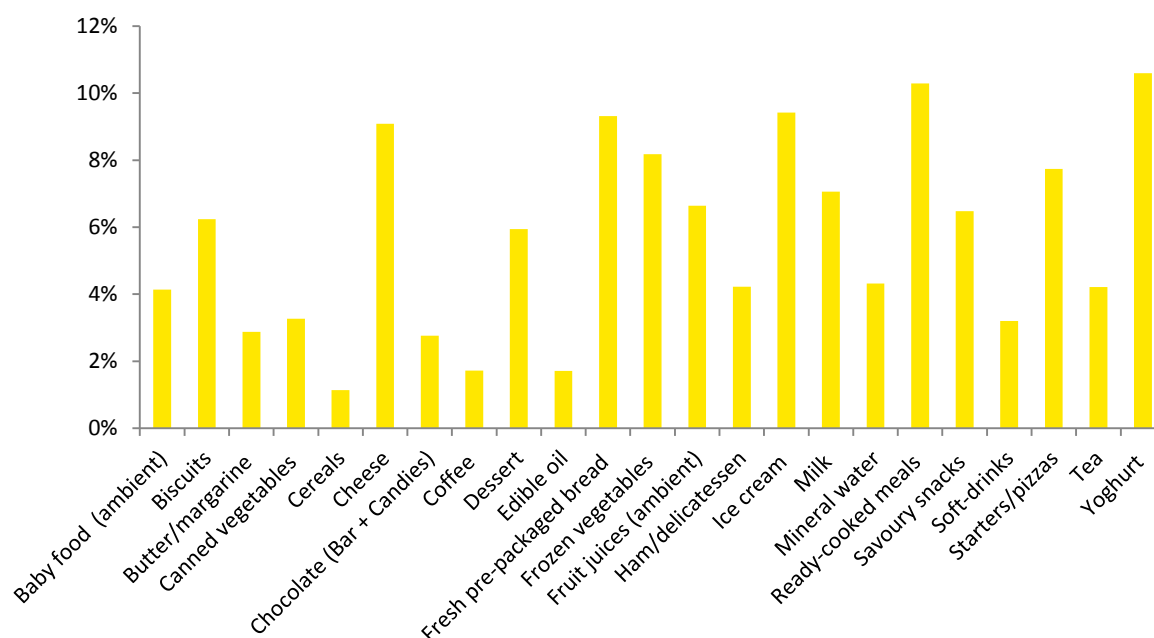
Figure 114: 2008-2012 data set: Proportion of private label EAN by product category (local level) - average across 9 MS sample (source: EY analysis based on © Nielsen Opus)

| Percentage of private label EANs by product category (%) | 2008 | 2010 | 2012 | Progression 2004-2012 |
|--|------|------|------|-----------------------|
| Baby food (ambient) | 8% | 9% | 10% | 2% |
| Biscuits | 28% | 31% | 32% | 5% |
| Butter/margarine | 26% | 27% | 28% | 2% |
| Canned vegetables | 41% | 42% | 43% | 2% |
| Cereals | 32% | 34% | 36% | 4% |
| Cheese | 25% | 29% | 31% | 6% |
| Chocolate (Bar + Candies) | 19% | 21% | 21% | 1% |
| Coffee | 27% | 28% | 28% | 1% |
| Dessert | 41% | 44% | 46% | 5% |
| Edible oil | 24% | 27% | 28% | 4% |
| Fresh pre-packaged bread | 30% | 31% | 33% | 3% |
| Frozen vegetables | 44% | 48% | 51% | 6% |
| Fruit juices (ambient) | 37% | 40% | 40% | 3% |
| Ham/delicatessen | 29% | 31% | 33% | 4% |
| Ice cream | 38% | 44% | 46% | 8% |
| Milk | 24% | 28% | 30% | 5% |
| Mineral water | 23% | 24% | 26% | 3% |
| Ready-cooked meals | 39% | 42% | 45% | 5% |
| Savoury snacks | 29% | 31% | 34% | 4% |
| Soft-drinks | 30% | 31% | 30% | 0% |
| Starters/pizzas | 35% | 39% | 42% | 7% |

| Percentage of private label EANs by product category (%) | 2008 | 2010 | 2012 | Progression 2004-2012 |
|--|------|------|------|-----------------------|
| Tea | 19% | 21% | 23% | 4% |
| Yoghurt | 32% | 34% | 36% | 4% |

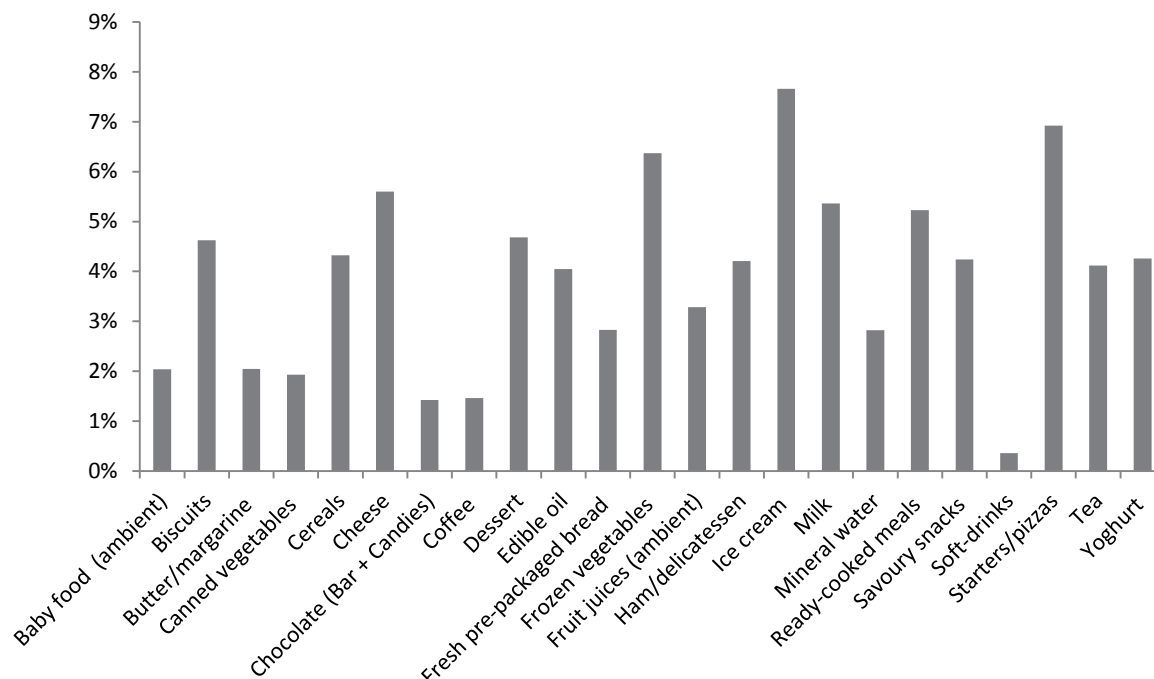
In terms of evolutions over time, as shown in Figure 115, private label share has grown across all product categories. The product categories that experienced the highest percentage point growth from 2004 to 2012 in private label EANs were yoghurt and ready cooked meals; whilst the categories registering the lowest level of percentage growth were cereals, coffee and edible oil.

Figure 115: 2004-2012 data set: Progress in % points of private label EAN share from 2004 to 2012 (local level) - average across 6 MS sample (source: EY analysis based on © Nielsen Opus)



Since 2008 the trend has been slightly different, as can be seen below. Highest percentage point growth during the crisis period was observed in ice cream, starters/pizzas and frozen vegetables, whilst lowest growth was in soft drinks, chocolate and coffee.

Figure 116: 2008-2012 data set: Progress in % points of private label EAN share from 2008 to 2012 (local level) - average across 9 MS sample (source: EY analysis based on © Nielsen Opus)



5.5.5. Product category turnover

Summary of findings

Sales turnover for the sample product categories increased annually by 2.9% over the 2004-2012 period. Annual growth during the pre-crisis period (4.5%) was notably greater than during the crisis (1.4%). 20 of the 23 product categories grew between 2004 and 2012: the only exceptions were mineral water, butter/margarine and edible oil.

Findings by Member State

Variations in trends were observed across the sample MS. As can be seen below, annual growth on average across the 23 sample product categories over the last decade was highest in Poland, followed by Belgium, whilst the lowest annual growth levels were seen in Portugal and Spain. During the crisis period, annual growth was negative in Poland, Portugal and Spain. Highest annual growth during this period was seen in Belgium, France, Czech Republic and Denmark.

Figure 117: 2004-2012 data set: Product category turnover for 6 MS sample (national level) - average CAGR across 23 product categories (source: EY analysis based on © Euromonitor International)

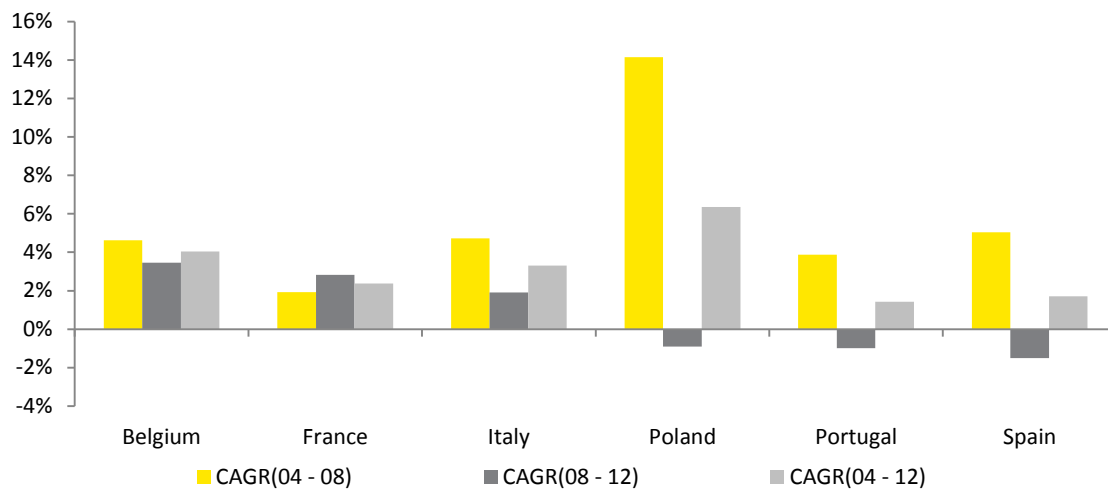
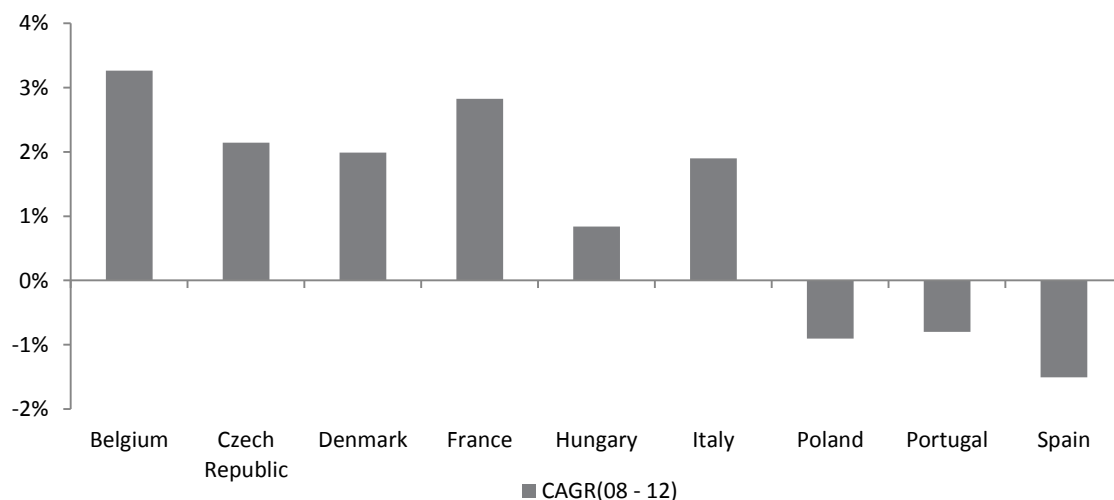


Figure 118: 2008-2012 data set: Product category turnover for 9 MS sample (national level) - average CAGR across 23 product categories (source: EY analysis based on © Euromonitor International)

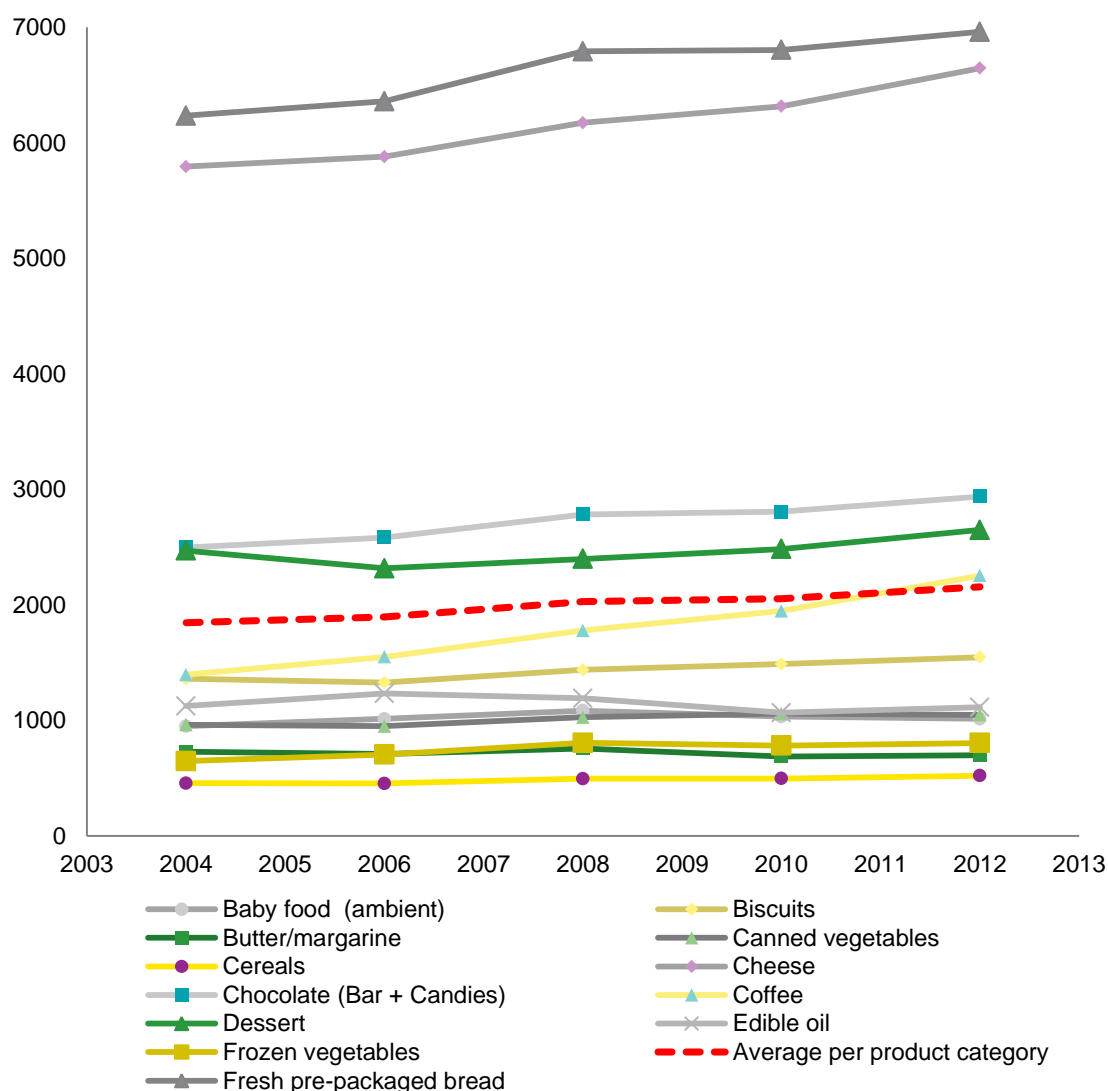


Findings by product category

The largest product categories in terms of turnover are fresh pre-packaged bread⁷³, cheese and ham/delicatessen; whilst the smallest categories are starters/pizzas, tea, ready cooked meals and cereals.

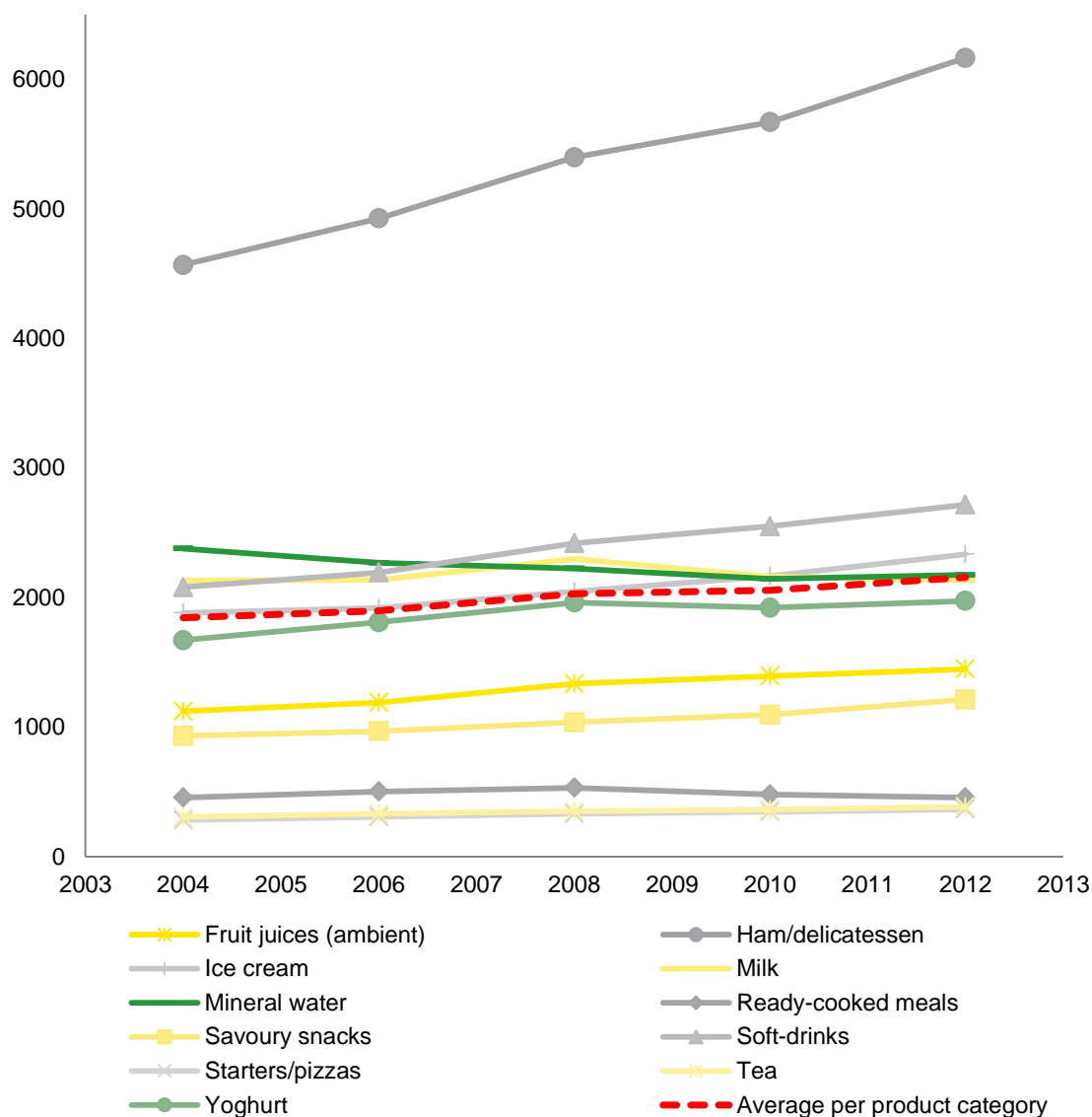
Growth rates vary significantly across product categories. As illustrated in Figure 119 and Figure 120 below, of the sample product categories, those that grew most over the last decade across the 6 MS sample were coffee, ham/delicatessen and soft drinks. The three product categories that contracted most were mineral water, butter/margarine and edible oil. A larger number of product categories contracted across the 9 MS sample over the 2008-2012 period, notably ready cooked meals, butter/margarine, milk, edible oil, baby food and mineral water.

Figure 119: 2004-2012 data set: Product category turnover (national level) – in M € across 6 MS sample – first set of categories (source: EY analysis based on © Euromonitor International)



⁷³ This category includes traditional and artisanal bread sold in retail, thus accounting for the high category turnover figure

Figure 120: 2004-2012 data set: Product category turnover (national level) – in M € across 6 MS sample – second set of categories (source: EY analysis based on © Euromonitor International)



No notable different trends were observed in the 2008-2012 9 MS sample.

5.5.6. Socio-demographic characteristics

Population size

In terms of population size, the zones of the selected CSAs in the MS saw growth over the 2004 to 2012 period. Growth during the pre-crisis period exceeded the crisis period in the CSA in France, Italy, Portugal and Spain; whilst for the CSA in Belgium population growth was higher after 2008 and growth across both periods was marginal in Poland. From 2008-2012, shown in Figure 122 below, the CSAs in Belgium saw the highest growth of all MS, followed by Italy and Czech Republic.

Figure 121: 2004-2012 data set: Population Size in CSAs by Member State (local level) - average CAGR for 6 MS sample (source: EY analysis based on Eurostat)

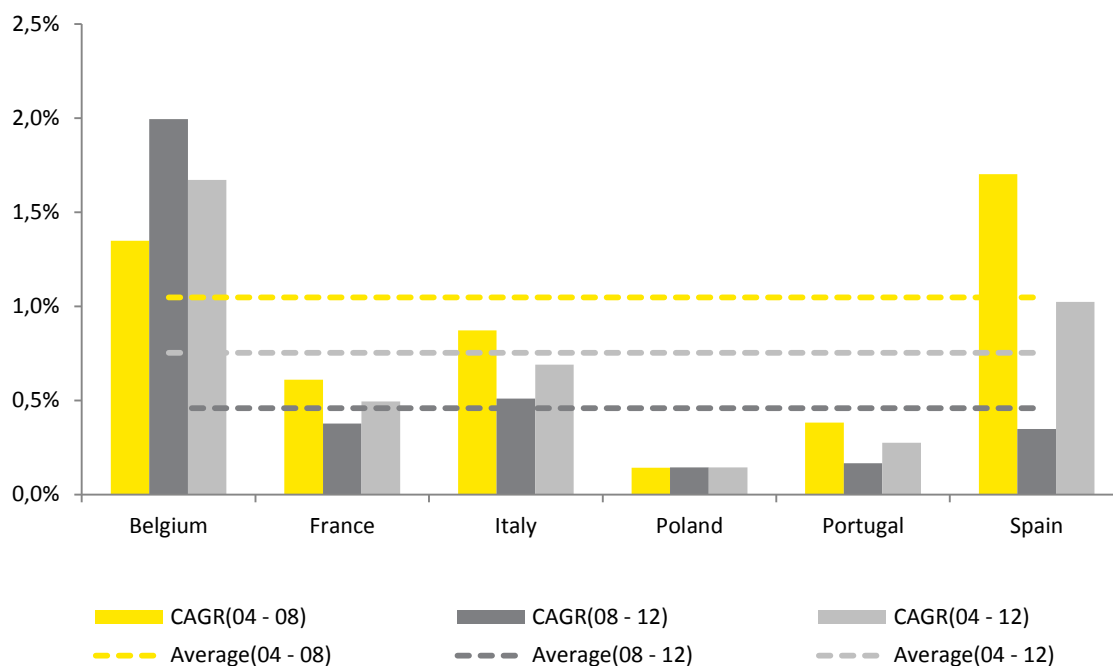
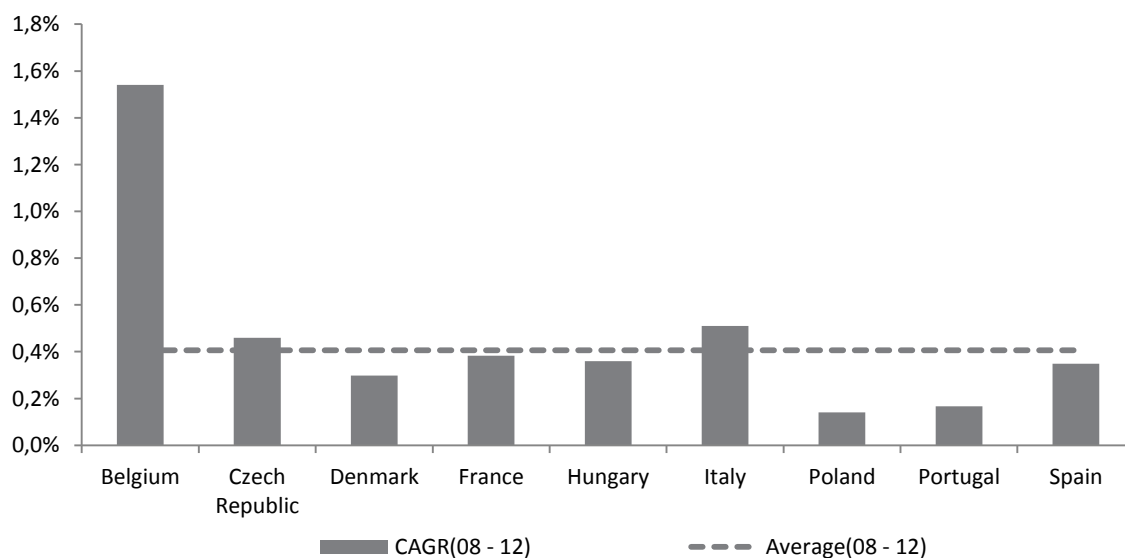


Figure 122: 2008-2012 data set: Population Size in CSAs by Member State (local level) - average CAGR for 9 MS sample (source: EY analysis based on Eurostat)



Population density

In terms of population density, observations varied across MS. As can be seen below, during the pre-crisis period, density grew slightly in the CSAs in France, Italy, Poland and Spain; whilst it decreased notably in the CSAs in Belgium and to a lesser extent in Portugal. During the crisis period between 2008 and 2012, in Figure 124 below, the CSAs in Belgium increased in density, as did CSAs in Spain, Czech Republic and Hungary; whilst CSAs in France, Italy and Poland saw a decrease in population density.

Figure 123: 2004-2012 data set: Population Density in CSAs by Member State (local level) - average CAGR for 6 MS sample (source: EY analysis based on Eurostat)

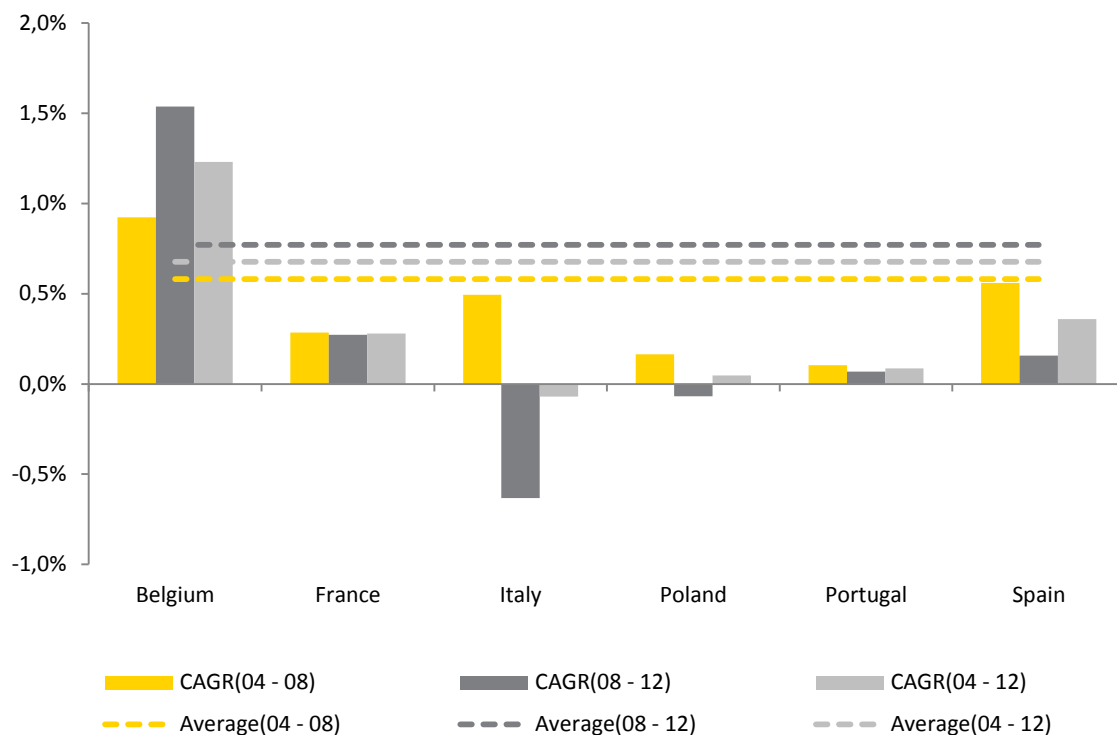
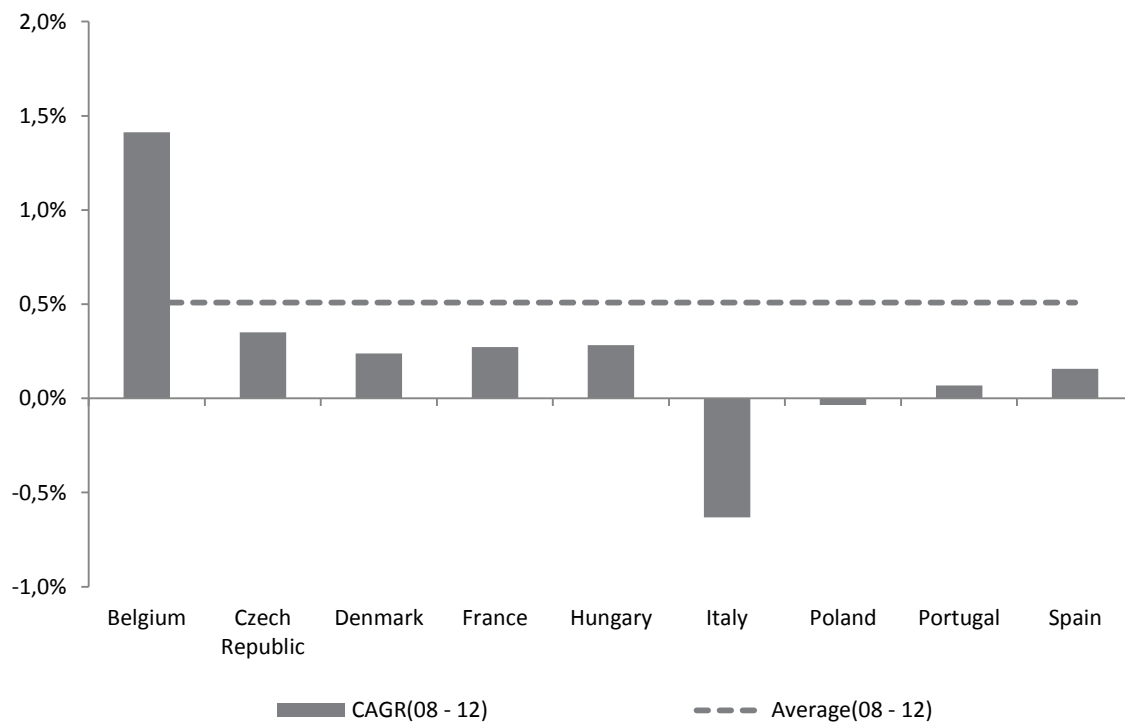


Figure 124: 2008-2012 data set: Population Density in CSAs by Member State (local level) - average CAGR for 9 MS sample (source: EY analysis based on Eurostat)



Unemployment rate

In terms of the unemployment rate, the overall trend was towards higher unemployment in the CSAs within the sample MS. As shown below, during the post-crisis period, the unemployment rate increased across CSAs in all MS; whilst pre-crisis unemployment rates decreased in the CSAs in Poland, France, and Italy. During the crisis period between 2008 and 2012, in Figure 126 below, the largest increases in the unemployment rate were in CSAs in Denmark, Spain, Portugal and Czech Republic.

Figure 125: 2004-2012 data set: Unemployment Rate in CSAs by Member State (local level) - average CAGR for 6 MS sample (source: EY analysis based on Eurostat)

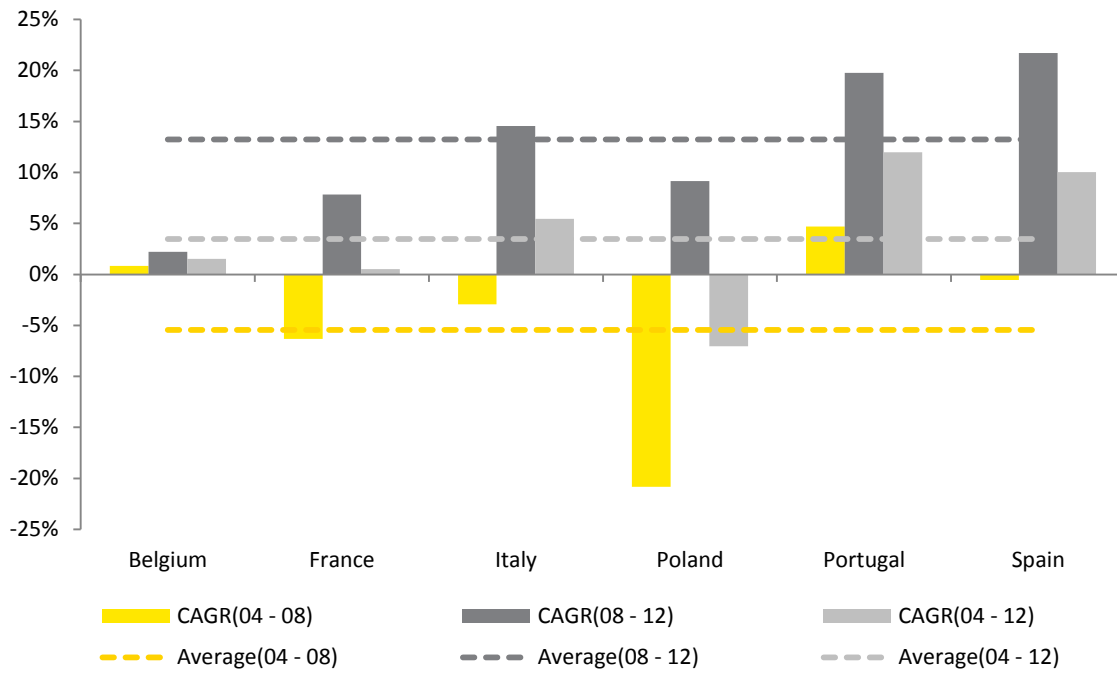
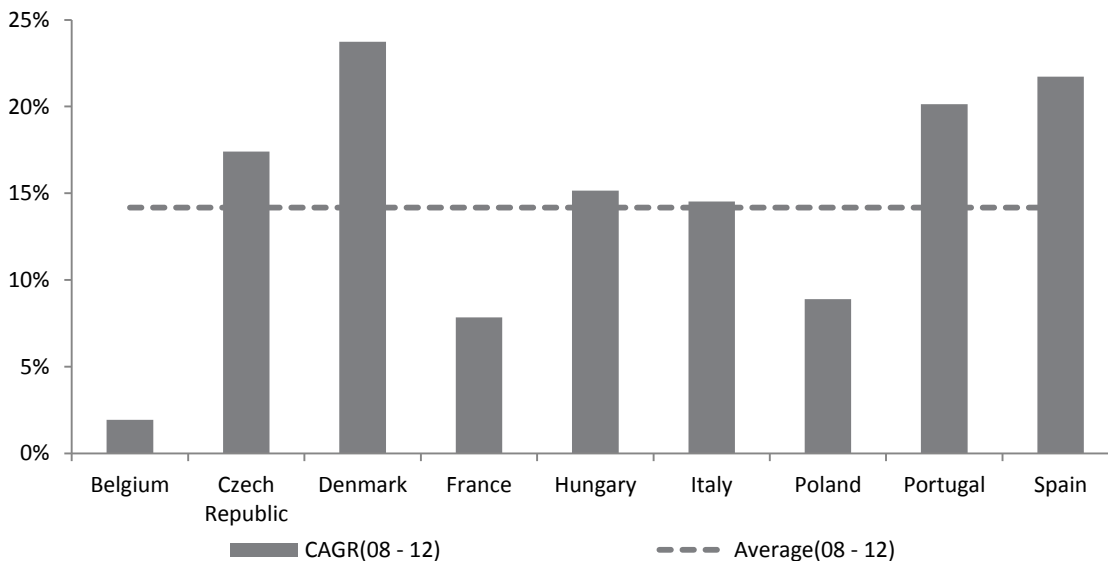


Figure 126: 2008-2012 data set: Unemployment Rate in CSAs by Member State (local level) - average CAGR for 9 MS sample (source: EY analysis based on Eurostat)



GDP per capita

In terms of GDP per capita, the CSAs in the sample MS on average saw an increase in GDP per capita on the whole over the past decade. As shown below, during the pre-crisis period, average GDP per capita increased most in the CSAs in Poland and Spain, whilst a small decrease was seen in average in the 3 CSAs in Belgium. During the crisis period between 2008 and 2012, the largest increases in average GDP per capita were in the CSAs in Denmark and Poland, whilst GDP per capita growth was negative in CSAs in Spain, Portugal and Italy.

Figure 127: 2004-2012 data set: GDP per capita in CSAs by Member State (local level) - average CAGR for 6 MS sample (source: EY analysis based on Eurostat)

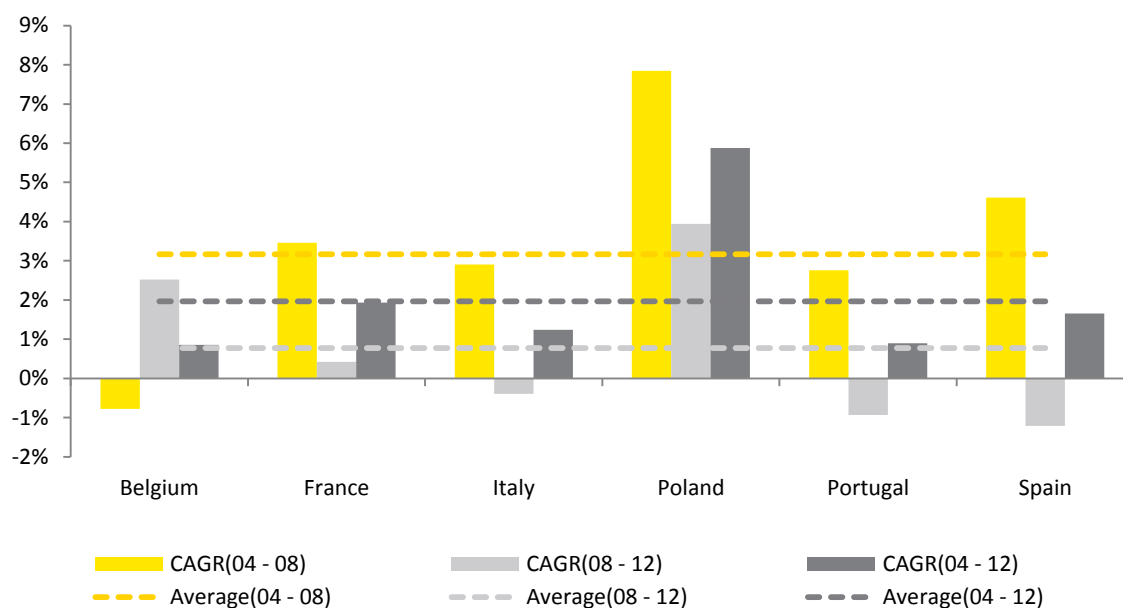
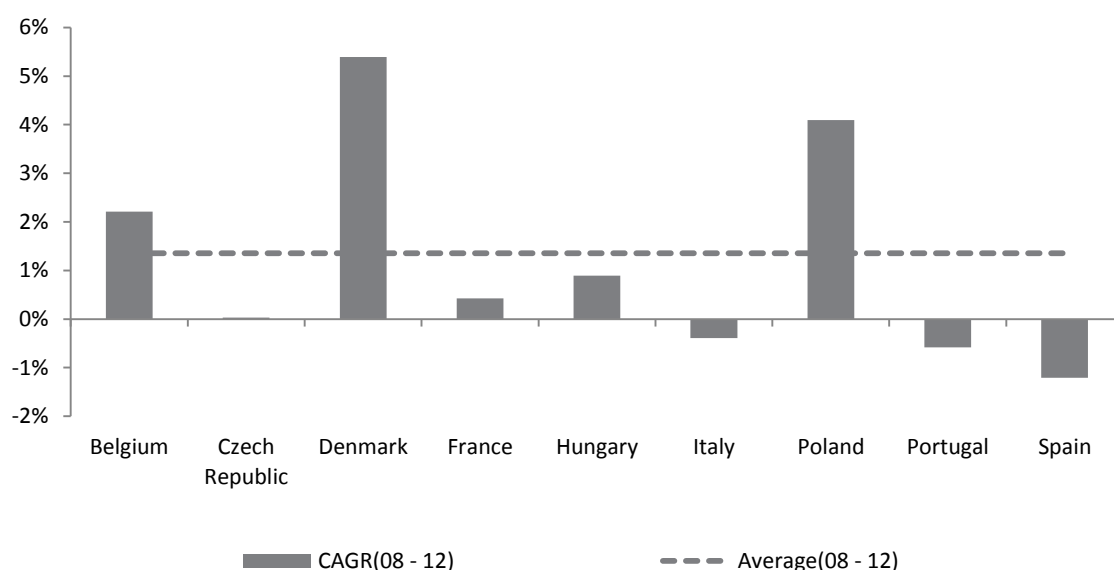


Figure 128: 2008-2012 data set: GDP per capita in CSAs by Member State (local level) - average CAGR for 9 MS sample (source: EY analysis based on Eurostat)



Final consumption on food and non-alcoholic beverage

In terms of final consumption on food and non-alcoholic beverage, a variety of trends were observed across MS. As shown below, during the pre-crisis period, all MS saw a

decrease in the proportion of income spent on food and non-alcoholic beverage, however during the crisis period this trend was reversed in Belgium, France, Portugal and Spain. Only in Italy and Poland did the trend remain similar to the pre-crisis period. In the 2008 and 2012 sample, Czech Republic and Hungary saw an increase in the proportion of income spent on food and non-alcoholic beverage, in line with the majority of MS.

Figure 129: 2004-2012 data set: Evolution of the proportion of income spent on food and non-alcoholic beverage by Member State (national level) - CAGR for 6 MS sample (source: EY analysis based on Eurostat)

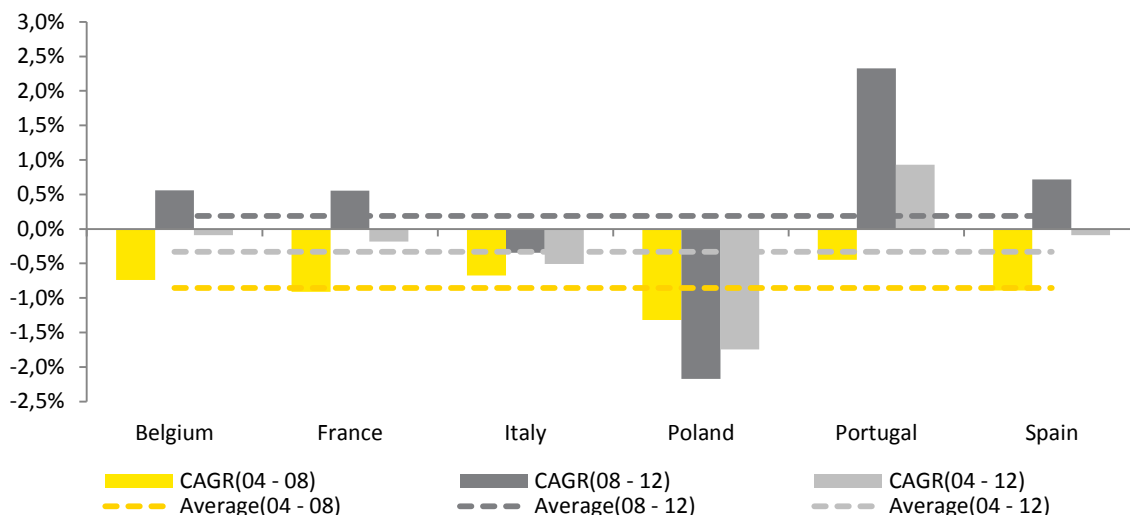
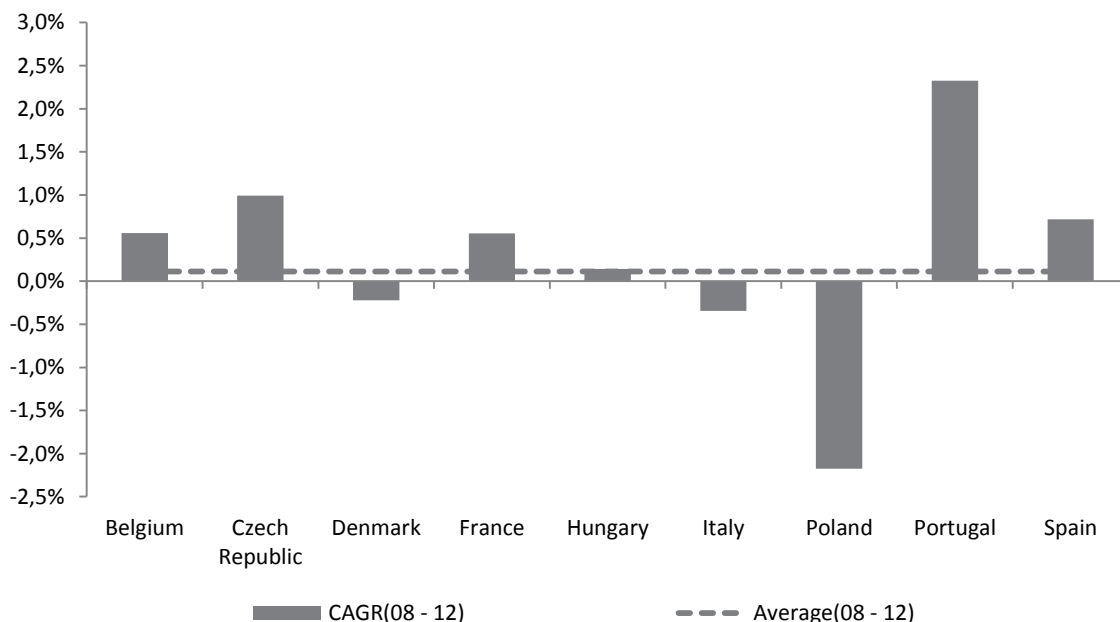


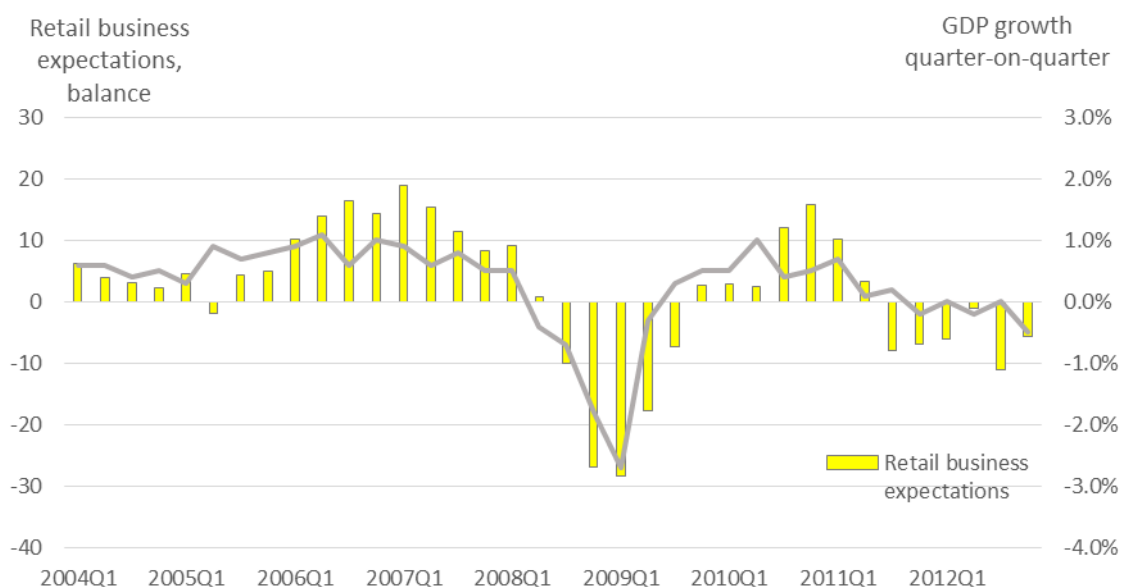
Figure 130: 2008-2012 data set: Consumption of food and non-alcoholic beverage by Member State (national level) - CAGR for 9 MS sample (source: EY analysis based on Eurostat)



Retail business expectations

Retail business expectations over the coming three months are heavily influenced by the general state of the economy, but tend to be somewhat more volatile (reflecting the speed with which confidence changes) than GDP growth, as Figure 131 shows.

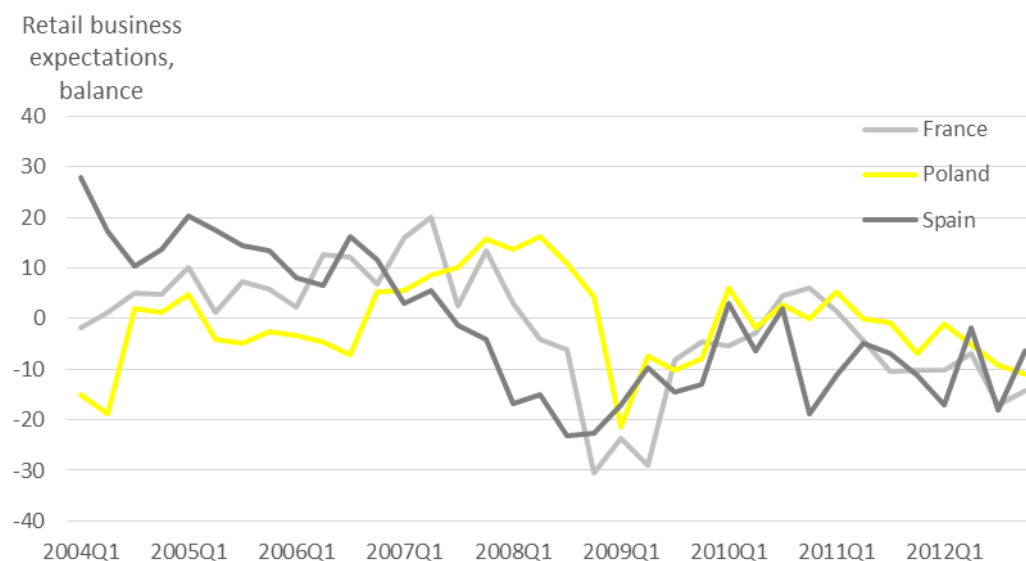
Figure 131: EU28 retail business expectations and GDP growth (Source: Eurostat)



Retail business expectations is the value for the last month in the quarter. Both series are seasonally adjusted.

The pattern across countries reflects the differences in national economic activity and the extent to which this coincides with the EU average. Figure 132 illustrates the differences for three countries, showing the differing trends in confidence in the period 2004-2008 and the more similar pattern from 2009.

Figure 132: Retail business expectations in France, Poland and Spain (source: Eurostat)



6. Econometric analysis scope and methodology

This section presents the final scope of data, indicators and measures for the econometric analysis as well as specific approaches applied. Its objective is to provide an introduction to the subsequent section on econometric results. A more comprehensive description is provided in the annexes.

6.1. General specification

The objective of the econometric analysis is to analyse the historical evidence for the impact of a priori drivers on each of choice and innovation. The analysis models the behaviour of each shop and the selection of products that it offers, and seeks to explain this with reference to various national and local drivers. It is important to note that this differs from modelling the total assortment available to consumers from the shops to which they have access, which would include the impact of a change in the number and mix of types of shops in the local area. The number and mix of shops is examined and reported in the descriptive analysis of this study.

The relationships of interest are expressed below:

$$[\text{choice or innovation}]_{s,p,t} = f \{$$

- shop type_{s,t}
- shop size_{s,t}
- private label share_{n/s,p,t}
- retailers' concentration_{n/s,t}
- suppliers' concentration_{n/s,p,t}
- [or imbalance (retailer vs supplier concentration)_{n/s,p,t}]
- socio-demographic indicators_{c,t}
- rural/urban category_c or population density_c
- product category turnover_{n,p,t}
- economic prosperity/macroeconomic conditions_{c/n,t}
- Member State_n
- product category_p
- year_y
- season_m
- new competitor shop opening_{s,t}

$$\}$$

where the indices used are:

- c consumer shopping area
- m month in the year (2nd quarter or 4th quarter),
- n Member State
- p product category
- s shop

| | |
|---|---|
| t | time period (two per year, every second year) |
| y | year |

The indicators selected to measure choice, innovation and the drivers are discussed in the annexes.

6.2. Econometric issues

Two main econometric issues arise in the estimation of relationships across these data sets.

6.2.1. Unobserved heterogeneity among shops

This is the standard issue that arises with data where the unit of observation is an individual (a shop, in this case). It considers the possibility that there is some difference between the observed outcome for choice/innovation for different shops that is due to something specific about the shop that is not already captured in the drivers. In a pure cross section there is no way of identifying such effects, but in panel data (where indicators are measured for the same shops over different time periods) it is conventional to seek to use the information available for shops over time to detect such (time-invariant) effects and thereby improve the estimates of the effects of the observed drivers. Since the shops are a sample drawn from a wider population, in principle a random effects specification is preferred if the data support this (Hausman test), but the fixed-effects (within) estimator has also been calculated. In practice, in many cases the two methods give results that are broadly similar in terms of the sign and relative size of parameter estimates.

6.2.2. Spatial dependence

The literature on spatial econometrics identifies different kinds of spatial dependence which call for different methods. Spatial dependence means the possibility that outcomes in a shop are affected not just by the characteristics of that shop (including the area/MS in which it lies) but by the behaviour of nearby shops and/or characteristics of nearby areas. Moran's I to test has been used for such dependence (in cross sections).

In practice, the Hausman test is rejected in most specifications, but the fixed-effects estimator is somewhat more vulnerable to spatial dependence, and both types of estimator are reported in Annex F. Because of the results of the Hausman test, we give priority to the fixed effects estimator when summarising conclusions about the impacts of the drivers.

A particular form of spatial dependence arises when it is believed that the residuals (which capture all the reasons for variation in the dependent variable that are not accounted for by the drivers that have been included) could be 'clustered', that is related to one another by geographical area. The shops in this study are located in common consumer shopping areas and the possibility arises that there are unobserved (i.e. not taken into account in the indicators that are included in the analysis) influences at the local level that affect all shops in the same area. In that case the estimated standard errors associated with each parameter estimate, which are used to assess whether it is statistically significantly different from zero, would be underestimated if no allowance were made for clustering. The results reported here use standard errors estimated on the assumption of clustering at the CSA level so as to take a cautious approach to reporting statistical significance of results. In many cases the parameter estimates that are treated as statistically insignificant as a result of taking this approach are those that are in any case so small as to be economically irrelevant.

6.3. Economic importance and statistical significance

The econometric analysis provides estimates of the impact of a driver (the parameter estimate) and of the degree of uncertainty (due to random variation) associated with this estimate (the standard error of the parameter estimate). If the parameter estimate is considerably different from zero (measured by the number of standard errors), the estimate is regarded as *statistically significant*: that is, if the model is correctly specified, it is unlikely that the 'true' value of the parameter that is being estimated is zero.

However, an estimated impact can be statistically significant but small – too small to be economically important. This data set has a large number of observations (shops x product categories x time periods) and so the standard errors of the parameter estimates are small, with the result that typically the parameter estimates are statistically significant at the 1% level, including estimates that are small in absolute magnitude. One therefore requires some means of assessing whether a given estimate is large enough to be important. The dependent variables (choice and innovation) and most of the drivers are represented in the equations in logarithmic form, which has the benefit that the estimated impacts are 'elasticities', independent of the units in which they are measured. In this kind of log-linear specification, a parameter estimate of, say, β , is interpreted as meaning that a 1% change in the value of the driver will lead to approximately a $\beta\%$ change in the dependent variable. If all the drivers were subject to the same typical range of variation, the relative size of their elasticities could be used to rank the importance of each driver's impact. However, in practice variation in some drivers is typically greater than in others. A driver whose typical variation in the sample is, say, rarely more than 5% would need to be associated with a larger elasticity than another driver whose typical variation is commonly more than 10% for them both to have similar typical impacts on the dependent variable (calculated by multiplying the elasticity by the variation).

The approach taken is therefore to vary each driver by an amount equivalent to one standard deviation of its values in the data set and calculate the proportionate impact on the dependent variable⁷⁴.

In the present study, the variation being analysed is over shops (space), product categories and time. Some indicators do not vary much over time but do vary over space: for example, the population density of an area. Some do not vary much over space, but do vary over product categories: for example, supplier concentration. Some do not vary much over space or product categories, but do vary over time: for example, national retail concentration. Therefore, we have measured one standard deviation in each driver *across all the dimensions in the data set* and not, for example, simply over time.

⁷⁴ More precisely, we calculate what an equation predicts for the dependent variable when all the drivers are set to their mean values (over the data set). We then, in turn, increase each driver by an amount equal to one standard deviation of the values that it takes in the data set and calculate the impact on the dependent variable, keeping all the other drivers at their mean values. We express the impact of each such change as a proportionate change in the dependent variable from the value predicted when all drivers are set to their mean values.

7. Characteristics of the data set and its implications for the econometric analysis

7.1. Dataset construction and availability

The data set for the econometric analysis is a subset of the data gathered for the study and which formed the basis of the descriptive analysis presented in Chapter 4. It is a subset because the econometric analysis requires data to be available for every indicator (innovation, choice and every explanatory variable) for every observation (a given product category in a given shop and time period), whereas descriptive analysis that focuses on one indicator at a time can choose all the observations in the sample for which data are available for each indicator in turn.

The key limitation compared with the full data set reviewed in Chapters 3 and 4 concerns the measure of retail concentration at the local level. For some Member States, Nielsen's Trade Dimensions data were not available for the full time period 2004-2012. Since this is the source of comprehensive information about the location, size and type of shops in each area, it is required to construct the indicator that measures the degree of retail concentration at the local level (or, in other words, the extent of local competition faced by a given shop).

Two data sets were established, one running from 2004-2012 and the other from 2008-2012 and, in each case, included all the Member States for which a full data set was available for the period. Because data are available for the choice and innovation measures for a substantial number of shops in Poland, we added Poland to the analysis for equation specifications that use national rather than local retail concentration (which is not available for Poland) as a driver.

7.2. Sample selection

As a reminder, through the Nielsen Opus data set, it was not possible to ensure an entirely random selection of the shops in the data set. The shops that are included in Opus are the ones that competitors have requested Nielsen to cover at any particular time.

As a result, Opus has an over-representation of hypermarkets. The sample reflects this over-representation: it has been mitigated by making special provision to choose supermarkets and hard discounters where possible. Not all Member States have good coverage in Opus, particularly going back over the past decade: the main use of Opus by its customers is to gain insight into the current situation rather than a historical time series. A complete time series of data for shops is required, and so the selection is limited to those shops that have been included in Opus in every time period (twice per year) in the years that have been chosen.

7.3. The scope of the data set used in the econometric analysis

The coverage of the data sets used for econometric analysis therefore comprises:

Table 24: The two data sets used in the econometric analysis

| Long Data set (2004H1 - 2012H2) | No. of shops | Short Data set (2008H1 - 2012H2) | No. of shops |
|------------------------------------|--------------|-------------------------------------|--------------|
| France | 131 | Belgium | 9 |
| Italy | 80 | France | 131 |
| Poland* | 24 | Hungary* | 24 |
| Portugal | 19 | Italy | 83 |
| Spain | 42 | Poland | 29 |
| | | Portugal | 19 |
| | | Spain | 42 |
| Total | 296 | Total | 337 |

There are small differences in the selection of shops compared with the descriptive analysis because of the requirement for the econometric analysis for data to be available for every driver in every time period.

** Poland was omitted from analysis that included local retail concentration as a driver because of the absence of the required Trade Dimensions data to calculate this measure. Hungary was omitted from the analysis of innovations that covered the whole of 2008H1-2012H1 because Opus data were only available from 2008 onwards (and so the first 'innovation' could only be detected in 2010).*

Specificities of sample for econometric analysis

Because the econometric analysis requires data to be available for all drivers that are included in any given specification, econometric analysis on the long data set (2004-2012) is limited to France, Italy, Spain and Portugal. Poland is included in the long period econometric analysis only for those specifications that use national rather than local retail concentration because the Nielsen Trade Dimensions data necessary to calculate the local concentration measure are not available over that period. Over the short term period (2008-2012), in addition to France, Italy, Spain, Portugal and Poland, the sample covers Hungary and Belgium. Czech Republic and Denmark are not covered in the econometric analysis, since there is insufficient data on retail concentration at the local level. As a consequence, the findings of the econometric analysis predominantly reflect the situations and evolution of drivers, choice and innovation in France, Italy, Spain, Portugal and Poland, and to a lesser extent in Hungary and Belgium.

The analysis below reviews the extent to which Member State coverage of the econometric analysis reflects the range of situations and trends found across the EU for a number of key drivers at national level. Across the drivers of shop type, shop size, product category turnover and socio-demographic characteristics, the Member States included in the econometric analysis cover a broad variety of cases that are generally found across the EU. The analysis below therefore focuses on concentration-related drivers, namely retail concentration, supplier concentration, measure of imbalance, as well as private label share.

Retail concentration at national level

There is a broad range of situations and evolutions in the EU over 2004-2012 regarding the concentration of retailers at national level, as illustrated in Table 25 below⁷⁵. The MS that are included in the econometric analysis are highlighted in blue.

Table 25: Retail group HHI by sales market share in modern retail (national level)
(source: EY analysis based on © Planet Retail)

| Rank | Member State | Population (m) | 2004 | 2006 | 2008 | 2010 | 2012 | CAGR (04-12) |
|------|----------------|----------------|------|------|------|------|------|--------------|
| 1 | Finland | 5.388 | 2881 | 3736 | 3751 | 3862 | 3935 | 4,0% |
| 2 | Latvia | 2.058 | 3076 | 3460 | 3590 | 3244 | 3443 | 1,4% |
| 3 | Sweden | 9.449 | 3418 | 3261 | 3386 | 3359 | 3305 | -0,4% |
| 4 | Cyprus | 0.850 | 6530 | 4049 | 3634 | 3572 | 2879 | -9,7% |
| 5 | Luxembourg | 0.518 | 3499 | 3343 | 2998 | 2704 | 2730 | -3,1% |
| 6 | Austria | 8.423 | 2262 | 2263 | 2615 | 2598 | 2617 | 1,8% |
| 7 | Lithuania | 3.030 | 2796 | 2282 | 2451 | 2525 | 2543 | -1,2% |
| 8 | Netherlands | 16.693 | 2972 | 2893 | 2279 | 2043 | 2478 | -2,2% |
| 9 | Ireland | 4.576 | 2582 | 2511 | 2451 | 2294 | 2381 | -1,0% |
| 10 | Denmark | 5.570 | 2374 | 2481 | 2458 | 2385 | 2320 | -0,3% |
| 11 | Estonia | 1.339 | 2981 | 2522 | 2308 | 2246 | 2225 | -3,6% |
| 12 | Slovakia | 5.398 | 1659 | 1772 | 1964 | 2035 | 2127 | 3,2% |
| 13 | Belgium | 11.047 | 2120 | 2060 | 1990 | 2000 | 2020 | -0,6% |
| 14 | Slovenia | 2.052 | 3183 | 2838 | 2216 | 2077 | 2015 | -5,6% |
| 15 | Germany | 81.797 | 1384 | 1620 | 1653 | 1927 | 1957 | 4,4% |
| 16 | Bulgaria | 7.348 | 2943 | 2047 | 1959 | 1646 | 1907 | -5,3% |
| 17 | Portugal | 10.557 | 1681 | 1652 | 1830 | 1888 | 1901 | 1,5% |
| 18 | Romania | 21.384 | 2302 | 1572 | 1394 | 1361 | 1880 | -2,5% |
| 19 | United Kingdom | 62.271 | 1749 | 1745 | 1793 | 1817 | 1811 | 0,4% |
| 20 | Czech Republic | 10.496 | 1199 | 1387 | 1690 | 1701 | 1779 | 5,1% |
| 21 | Spain | 46.174 | 1335 | 1422 | 1686 | 1735 | 1701 | 3,1% |
| 22 | Greece | 11.300 | 1708 | 1648 | 1681 | 1603 | 1682 | -0,2% |
| 23 | Poland | 38.534 | 826 | 926 | 1228 | 1353 | 1580 | 8,4% |
| 24 | France | 65.161 | 1533 | 1528 | 1492 | 1482 | 1410 | -1,0% |
| 25 | Hungary | 9.971 | 1251 | 1243 | 1308 | 1198 | 1229 | -0,2% |
| 26 | Italy | 60.723 | 1299 | 1220 | 1188 | 1192 | 1170 | -1,3% |

As can be seen in the table above, the econometric analysis sample includes the four MS with the light or moderate retail concentration levels in the EU in 2012 - Italy (HHI of 1170), Hungary (HHI of 1229), France (HHI of 1410) and Poland (HHI of 1580). On the other hand, the econometric sample does not include any MS where retail concentration levels are the highest - Finland (HHI of 3935 in 2012), Latvia (3443 in 2012), Sweden (3305 in 2012) and Cyprus (2878 in 2012, however down from 6530 in 2004). This said, the case of retail concentration impacting the Milk sector in Finland is addressed outside of the econometric analysis through a specific case study.

⁷⁵ MS ranked in descending order by 2012 HHI figures. Figures for Malta not provided due to insufficient data

The MS with the highest levels of retail concentration tend to be smaller in population size: of the 12 MS with the highest levels, only the Netherlands has a population greater than 10 million inhabitants in this list and the top 5 account for a combined population size of less than 20 million inhabitants.

In relation to the evolution of retail concentration over time, the sample includes the MS with the greatest increase in concentration over the 2004-2012 period, Poland (HHI of 826 in 2004 to 1580 in 2012). On the other hand, the econometrics sample does not consider any of the MS where retail concentration decreased the most between 2004 and 2012 - Bulgaria (HHI of 2940 in 2004 to 1910 in 2012), Cyprus and Slovenia (HHI of 3180 in 2004 to 2020 in 2012). It does however include 3 MS where retail concentration decreased over time, as explained in the paragraph below.

Of the other MS in the econometric sample, Belgium, which is only represented in the short data set (2008-2012), is the MS with the highest retail concentration level in 2012, in 13th place compared the EU27. Belgium has undergone an annual decrease of -0.6% since 2004. Portugal is the next MS, in 17th place in the whole of the EU, having seen an annual increase of 1.5% since 2004. Spain had 6th lowest retail concentration HHI figure in the EU in 2012, having increased by 3.1% annually since 2004. Poland still had the 4th lowest concentration level in 2012, despite a 8.4% annual increase since 2004. Meanwhile, the bottom three MS, France, Italy and Hungary, have observed a slight decrease in concentration from 2004 to 2012, with compound annual growth rates of -1.0%, -0.2% and -1.3% respectively.

In conclusion, the scope of MS in the econometric analysis covers predominantly situations of lower retail concentration; there is, however, a range of trends over time – whilst the negative trends of France, Italy, Belgium and Hungary are prevalent, Poland represents the MS with the highest growth in concentration levels, and Spain and Portugal experienced above average increases. Areas of high concentration are not covered in the econometric analysis, since these are predominantly in MS with smaller population sizes. The case study of Milk in Finland provides some insights into the effects of concentration on choice and innovation in one such MS.

Supplier concentration at national level

Regarding supplier concentration at national level, Table 26 below presents the average supplier concentration HHI figures across the 23 product category sample⁷⁶. Whilst supplier concentration is defined at product category level, the averages across product categories shown in Table 26 is intended to give some indication of the range of experience across MS in order to help judge the extent to which the sample of MS used in the econometric analysis reflects the wider experience of the 14 MS for which data were gathered.

Table 26: Supplier HHI – brand only by sales market share (national level), averaged across 23 product category sample (source: EY analysis based on © Euromonitor)

| Rank | Member State | Population (m) | 2004 | 2006 | 2008 | 2010 | 2012 | CAGR (04-12) |
|------|----------------|----------------|------|------|------|------|------|--------------|
| 1 | Denmark | 5.570 | 2433 | 2437 | 2705 | 2779 | 2840 | 2,0% |
| 2 | Netherlands | 16.693 | 2575 | 2635 | 2926 | 2889 | 2838 | 1,2% |
| 3 | Finland | 5.388 | 2792 | 2729 | 2767 | 2741 | 2594 | -0,9% |
| 4 | Portugal | 10.557 | 2122 | 2166 | 2289 | 2339 | 2426 | 1,7% |
| 5 | Belgium | 11.047 | 2096 | 2239 | 2324 | 2396 | 2337 | 1,4% |
| 6 | Spain | 46.174 | 1776 | 1914 | 1957 | 2018 | 2179 | 2,6% |
| 7 | France | 65.161 | 1838 | 1955 | 1998 | 2122 | 2130 | 1,9% |
| 8 | Czech Republic | 10.496 | 1700 | 1800 | 2042 | 2056 | 2056 | 2,4% |
| 9 | Hungary | 9.971 | 1963 | 2106 | 2035 | 2055 | 2016 | 0,3% |
| 10 | United Kingdom | 62.271 | 1716 | 1707 | 1714 | 1794 | 1766 | 0,4% |
| 11 | Romania | 21.384 | 1750 | 1758 | 1721 | 1720 | 1747 | 0,0% |
| 12 | Poland | 38.534 | 1439 | 1528 | 1648 | 1724 | 1743 | 2,4% |
| 13 | Italy | 60.723 | 1406 | 1461 | 1499 | 1519 | 1590 | 1,5% |
| 14 | Germany | 81.797 | 1202 | 1226 | 1268 | 1383 | 1359 | 1,5% |

As can be seen in the table above, the econometric analysis sample includes the MS with the 2nd and 3rd lowest supplier concentration levels on average across the 23 product categories – Italy, with an HHI of 1590 in 2012, and Poland, with an HHI of 1743 in 2012 – the lowest being Germany, with an HHI of 1359 in 2012. Econometric analysis, on the other hand, does not cover the three MS with the highest average level of supplier concentration – Denmark (with an HHI of 2840 in 2012), the Netherlands (2838 in 2012) and Finland (2594 in 2012). This said, the effects of supplier concentration in two of these MS are addressed through case studies – Cheese in the Netherlands and Milk in Finland. Four MS (Portugal, Belgium, Spain and France) in the econometric sample feature amongst the top seven MS of the 14 MS sample in terms of the level of supplier concentration, with an average HHI of between 2130 and 2426 in 2012. Furthermore a case study on Tomatoes in Belgium studies the effects of high supplier concentration on this fresh food category.

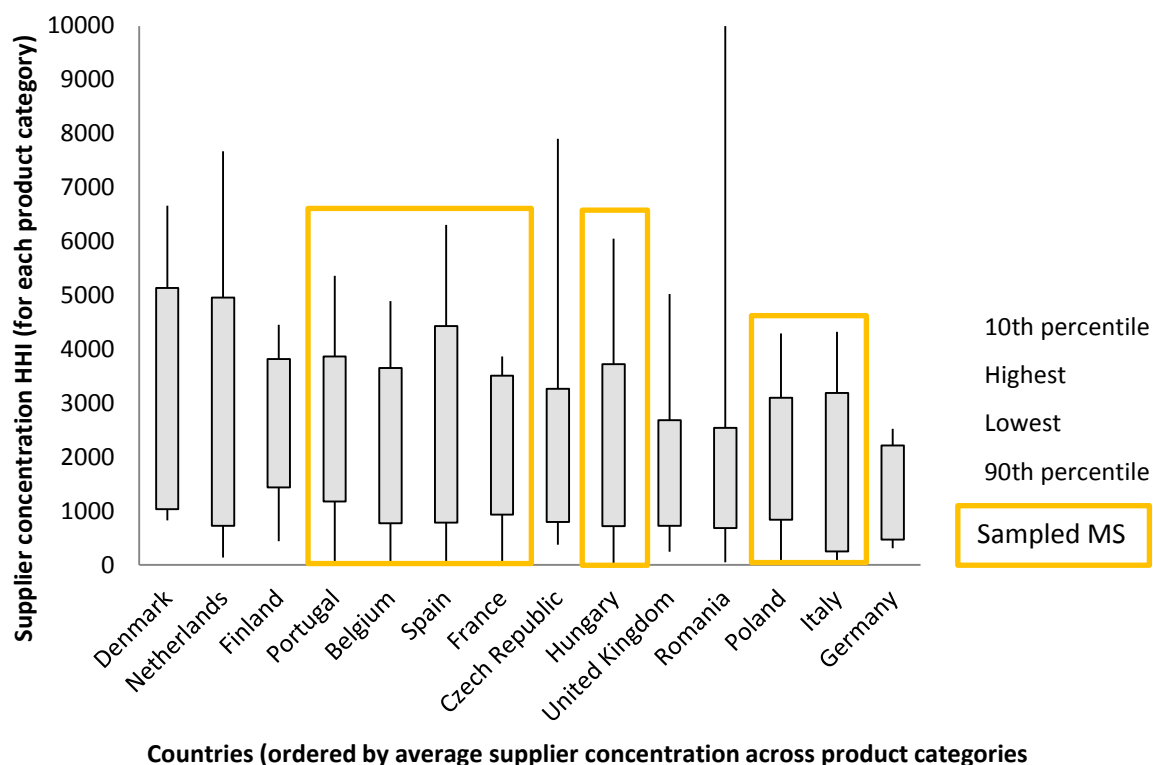
With regards to the evolution of supplier concentration over time, the econometric sample covers two of the three MS with the greatest increase in average concentration from 2004 to 2012 – Spain (with an HHI of 1776 in 2004 and 2179 in 2012) and Poland (1439 in 2004 to 1743 in 2012). On the other hand, the sample does not consider the only MS where supplier concentration decreased on average – in Finland (with HHI of 2792 in 2004 and 2594 in 2012), although the case of Milk in Finland is addressed

⁷⁶ MS ranked in descending order by 2012 HHI figures.

through a case study. Of the other MS in the econometric sample, the annual growth rates were slightly above average compared to the 14 MS sample as a whole: in Portugal, Belgium, France and Italy, supplier concentration on average increased by between 1.4% and 1.9%

Figure 133 provides further information on the representativeness of the sample used for econometric analysis. This figure shows that the sample also includes situations (couple Member States / product category) of very high and very low supplier concentration

Figure 133: Distribution of supplier concentration (HHI – brand only by sales market share at national level) for the 23 product categories in each country in 2012 (source: EY analysis based on © Euromonitor)



In conclusion, the scope of MS in the econometric analysis tends to represent the range of situations of supplier concentration in the 14 MS sample; whilst the scope does not cover the MS with the most and least concentrated suppliers on average in 2012, it does include the 4th highest (Portugal) and the 2nd lowest (Italy). Furthermore, supplier concentration in the 2nd and 3rd placed MS is addressed through case studies. The remaining MS in scope registered mid-range concentration levels when considered amongst the 14 MS sample. In terms of evolution in this driver, the econometric scope notably includes the two MS with the highest increase in average supplier concentration over time, Spain and Poland.

Measure of imbalance HHI at national level

Regarding the measure of imbalance (or the \log^{77} of the ratio of retail concentration divided by supplier concentration) across all 23 sample product categories over the past decade, diverse trends are observed in the 14 MS sample. The variety of situations (across the 14 MS for which supplier concentration data was gathered and 23 product categories) is represented in the Table 27 below.

Table 27: Number of situations of imbalance HHI across 23 product category sample (source: EY analysis based on © Planet Retail and © Euromonitor)

| Measure of imbalance | 2004 | 2006 | 2008 | 2010 | 2012 |
|---|------|------|------|------|------|
| In the 14 MS | | | | | |
| Situations in favour of suppliers (Mol below 0) | 168 | 175 | 165 | 173 | 162 |
| Situations in favour of retailers (Mol above 0) | 154 | 147 | 157 | 149 | 160 |
| % of situations in favour of suppliers | 52% | 54% | 51% | 54% | 50% |
| % of situations in favour of retailers | 48% | 46% | 49% | 46% | 50% |
| In the sampled MS | | | | | |
| Situations in favour of suppliers (Mol below 0) | 100 | 107 | 97 | 101 | 101 |
| Situations in favour of retailers (Mol above 0) | 61 | 54 | 64 | 60 | 60 |
| % of situations in favour of suppliers | 62% | 66% | 60% | 63% | 63% |
| % of situations in favour of retailers | 38% | 34% | 40% | 37% | 37% |

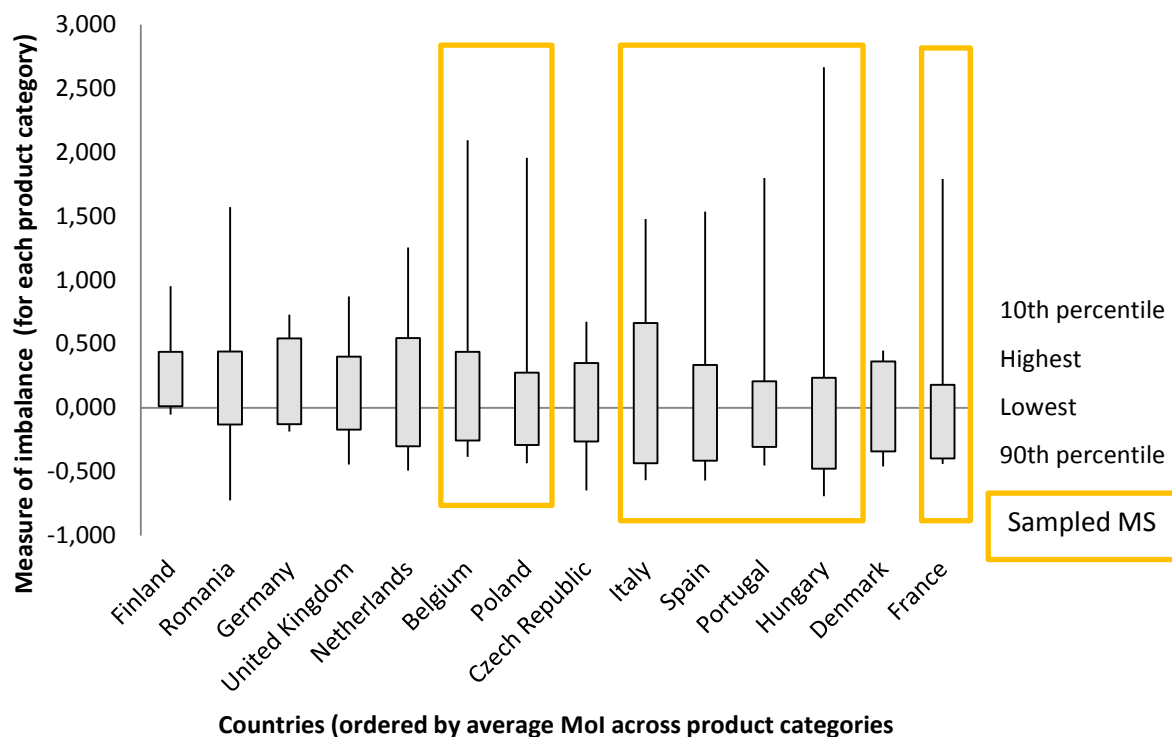
Note: The measure of imbalance is defined as the natural logarithm of the ratio of national retail concentration HHI to national supplier concentration (in a given product category) HHI. A value of zero indicates that retailer HHI and supplier HHI are equal. Values greater than zero indicate higher retailer than supplier concentration; values less than zero indicate higher supplier than retail concentration.

The balance of the relationship between suppliers and modern retailers was measured at the procurement level, i.e. at national level, considering that negotiations mainly take place at national level. Analyses of situations by product category and Member States attest that they are approximately equal numbers of situations in favour of retailers as they are situations in favour of suppliers. In our sample, due to the absence of MS where retailers are strongly concentrated, the number of situations where suppliers are in a dominant position is slightly higher, although both situations are represented.

Figure 133 provides further information on the representativeness of the sample used for econometric analysis. This figure shows that the sample also includes situations (couple Member States / product category) of very high and very low measure of imbalance, in spite of the fact that MS with high retail concentration were not included in the scope.

⁷⁷ The log transformation is used so that the metric presents a higher retail concentration HHI and a higher supplier concentration HHI symmetrically. For example, in the unlogged metric, if retail concentration moves from being at the same level as supplier concentration to a level that it is twice as high, the imbalance ratio increases from 1.0 to 2.0, whereas if supplier concentration doubles then the imbalance ratio falls from 1.0 to 0.5. In the logged metric, the value increases from 0 to 0.693 or falls from 0 to -0.693 in the two examples.

Figure 134: Distribution of measure of imbalance for the 23 product categories in each country in 2012 (source: EY analysis based on © Planet Retail and © Euromonitor)



In conclusion, the scope of MS in the econometric analysis tends to represent a broad range of situations across the 14 MS sample in terms of the level of imbalance and the trends over time.

Private label share at national level

In relation to private label sales share, descriptive statistics show an overall increase in private label share averaged across the 23 product category sample in all of the 14 MS sampled, however with significant differences between MS. This is represented in the Table 28 below.

Table 28: Private label percentage share by sales (national level), averaged across 23 product category sample (source: EY analysis based on © Planet Retail)

| Member State | Population (m) | 2004 | 2006 | 2008 | 2010 | 2012 | CAGR (04-12) |
|----------------|----------------|-------|-------|-------|-------|-------|--------------|
| Germany | 81.797 | 30,48 | 32,18 | 33,38 | 33,54 | 32,93 | 1,0% |
| Spain | 46.174 | 20,55 | 22,36 | 24,99 | 28,73 | 32,11 | 5,7% |
| Portugal | 10.557 | 17,26 | 19,66 | 23,56 | 27,37 | 30,05 | 7,2% |
| United Kingdom | 62.271 | 29,15 | 29,13 | 29,52 | 29,52 | 29,60 | 0,2% |
| Belgium | 11.047 | 27,51 | 28,61 | 28,98 | 29,25 | 29,51 | 0,9% |
| Netherlands | 16.693 | 23,75 | 24,87 | 25,37 | 26,76 | 27,86 | 2,0% |
| France | 65.161 | 23,26 | 24,05 | 24,93 | 25,45 | 24,82 | 0,8% |
| Denmark | 5.570 | 17,68 | 18,69 | 19,54 | 20,06 | 21,60 | 2,5% |
| Hungary | 9.971 | 8,65 | 11,88 | 15,89 | 18,51 | 19,68 | 10,8% |
| Finland | 5.388 | 13,61 | 15,11 | 16,01 | 17,60 | 19,01 | 4,3% |
| Italy | 60.723 | 12,41 | 13,06 | 13,61 | 14,75 | 15,77 | 3,0% |
| Czech Republic | 10.496 | 8,22 | 9,81 | 11,71 | 12,44 | 13,22 | 6,1% |
| Poland | 38.534 | 5,48 | 6,26 | 6,80 | 7,98 | 11,20 | 9,3% |
| Romania | 21.384 | 2,59 | 3,53 | 3,51 | 3,81 | 4,56 | 7,3% |

As is shown in the table above, the econometric analysis sample includes a broad range of situations both in terms of level of private label share and evolution trends over time.

Private label share averaged across the 23 product category sample in 2012 was highest in Germany (32.9%), followed by Spain (32.1%) and Portugal (30%) – these latter two MS forming part of the econometric analysis. At the other end of the spectrum, private label share was lowest in 2012 on average in Romania (4.6%) followed by Poland (11.2%), the latter of which is part of the econometric analysis. The remaining MS featuring in the econometric analysis are distributed evenly amongst the 14 MS sample shown in Table 25.

In terms of evolution over time, the strongest growth among the 14 MS sample was observed in Hungary (10.8% compound annual growth rate), followed by Poland (9.3%), Romania (7.3%) and Portugal (7.2%). All of these MS with the exception of Romania are included in the econometric analysis sample. On the other hand, growth in private label share was weakest in the UK (0.2%), France (0.8%) and Belgium (0.9%), the latter two MS being represented in the econometric analysis.

In conclusion, the scope of MS in the econometric analysis covers a wide range of situations in terms of level and evolution of private label share.

7.4. Implications of the sample selection process

The most likely kind of bias introduced by the process by which shops are included in Opus is that we over-represent shops that face more (local) competition, because according to Nielsen these are the ones that tend to prompt requests for coverage by competitors.

Figure 135 shows the count of shops in the long data set falling into different bands for the (banner) C5 concentration ratio (averaged over the entire time period). This suggests that there is reasonable coverage of shops operating in a quite highly concentrated environment.

Figure 136 uses the broader HHI measure of concentration: about one sixth of the shops in the sample operate in an area with a HHI that exceeds 2,500, which represents a reasonably high degree of concentration.

The actual distribution of shops by degree of local competition is unknown, and so the extent to which these distributions of the sample depart from the distribution of the population cannot be assessed, but it is clear that the sample includes cases with a moderate to high degree of concentration in sufficient numbers for these to influence the econometric results.

Figure 135: Distribution of shops by C5 concentration measure at banner level (long data set) (source: analysis based on © Nielsen Trade Dimensions sales area data)

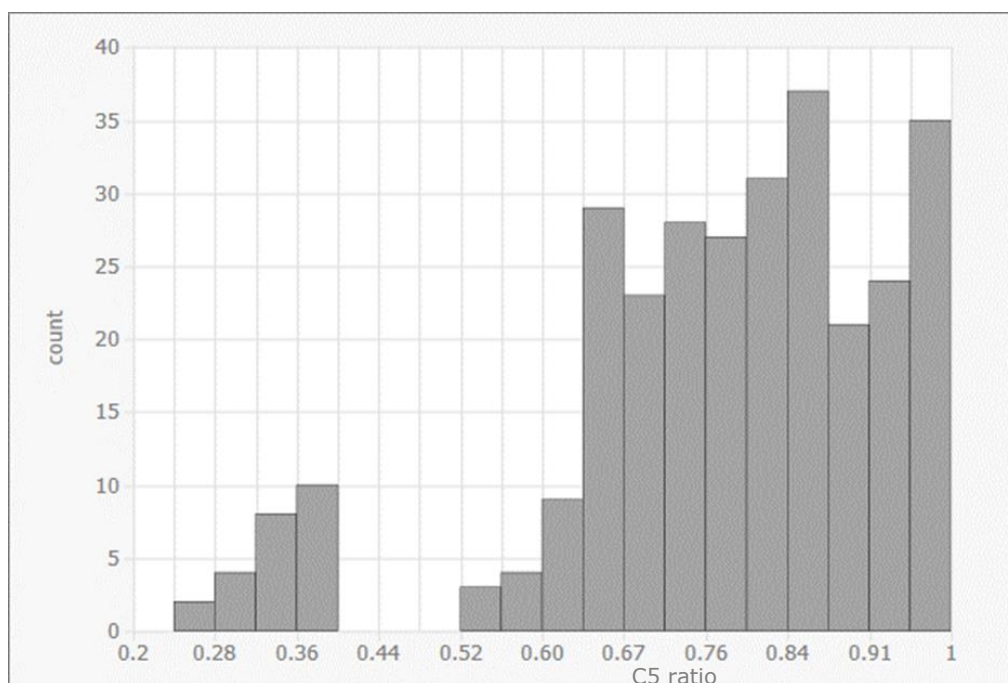
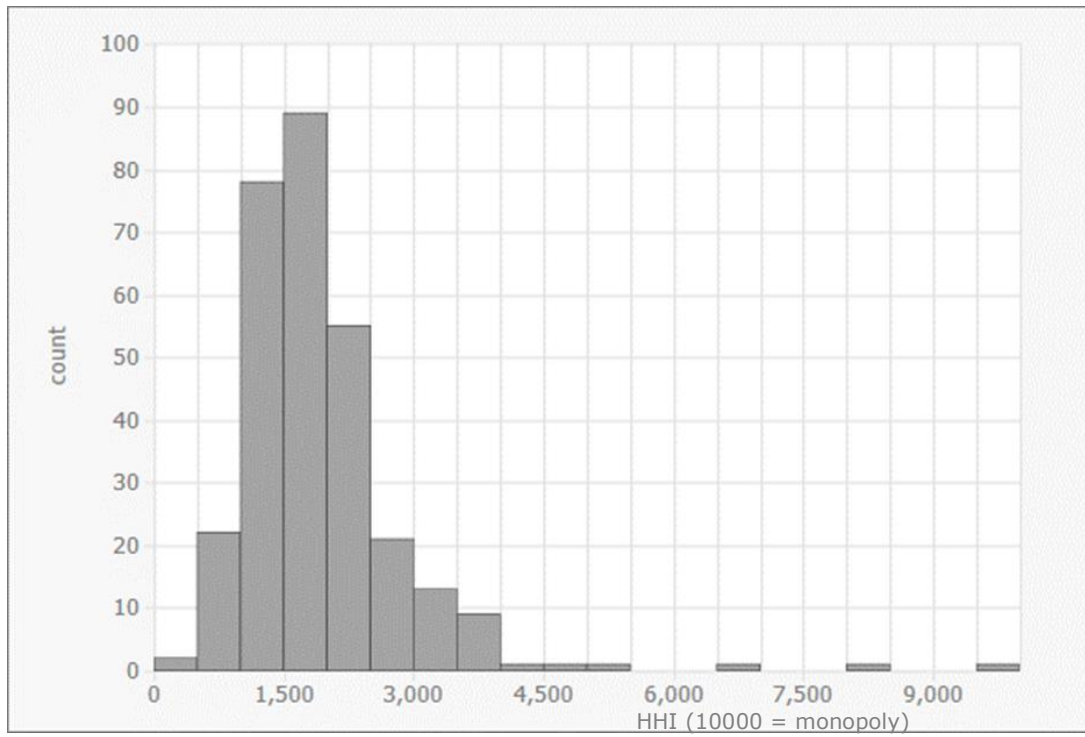


Figure 136: Distribution of shops by HHI concentration measure at banner level (long data set) (source: analysis based on © Nielsen Trade Dimensions sales area data)



8. Main features of choice and innovation indicators in the sample data set

Below is a summary of the main features of the sample data set with respect to the main measures of choice and innovation, and note how these features are addressed or reflected in the econometric analysis.

8.1. Choice

Figure 137 shows the ranking of types of shop according to the number of products stocked (averaged across shops and product categories). As expected, the order is: hypermarkets > supermarkets > hard discounters. The figure also shows that the increase in choice (on this measure) over time was seen in all three types of shop. Proportionately the increase over time is largest in discounters, next largest in hypermarkets and smallest in supermarkets; in absolute terms the increase is largest in hypermarkets, which is the change most easily seen in the figure.

Although the econometric analysis includes a measure for the size of the shop (in floor space), it also includes a fixed effect for type of shop. The estimated parameters are statistically significant, which suggests that the amount of choice offered by the shop is not just a function of size: it is also a matter of format. The estimated parameters reflect the ranking by type of shop for this choice indicator. The data suggest that the hard discounter effect may be declining in absolute size over time (the gap is closing between discounters and other types of shop): the parameters in equations estimated in separate cross sections for each time period reflect this.

Figure 137: Average number of EAN codes per shop and per product category, presented by shop type (long data set) (source: analysis based on © Nielsen Opus. Data are for first period in each year)

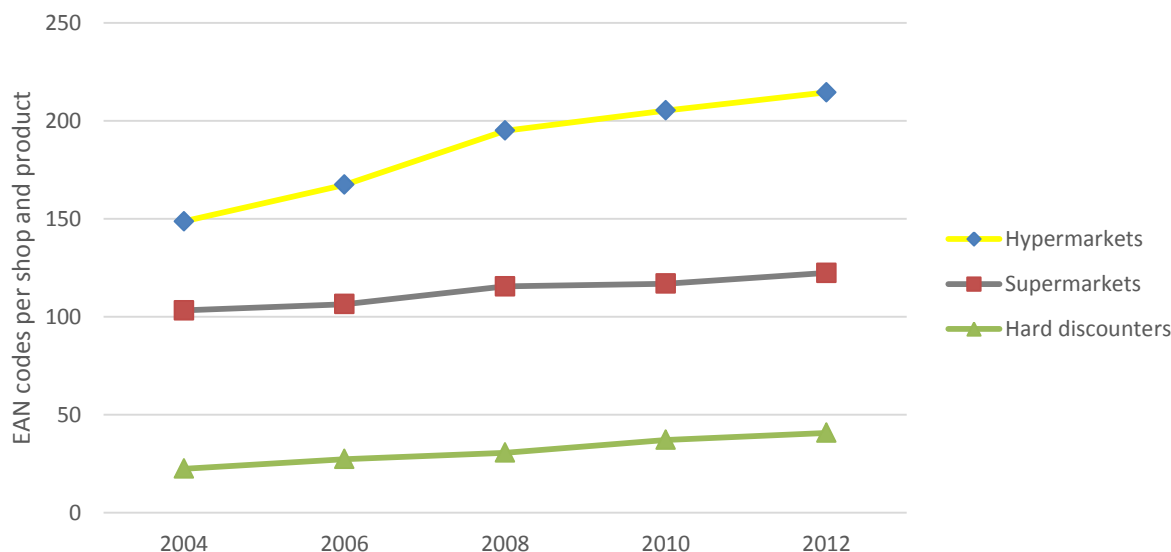


Figure 138 shows the average number of EAN codes (across shops and product categories) by the Member States in our long data set. The figure shows the data only for hypermarkets, to filter out any effect of a different mix of shop types in our sample in different Member States.

Again, the increase in choice on this measure is seen in all the Member States.

The average is considerably higher in France than in the other Member States. The econometric analysis includes a fixed effect for each Member State to capture this.

However, this effect cannot be interpreted as simply adjusting for the difference observed in Figure 138 because the econometric analysis also includes national product

category turnover, an indicator whose scale varies by Member State (simply because of the different sizes of the economies) but whose impact on choice is not expected to reflect that difference in scale: national turnover in France for a given product category might be ten times what it is in Portugal, but that does not mean that one would expect there to be ten times as many EAN codes in France. Rather, the role of this indicator is mainly to discriminate between different product categories in the same Member State. The consequence is that the estimated Member State fixed effect is adjusting for that difference in scale as well as the difference in levels of EAN codes shown in Figure 138.

Figure 138: Average number of EAN codes per shop and per product category in hypermarkets in Member States (long data set) (source: analysis based on © Nielsen Opus. Data are for first period in each year)

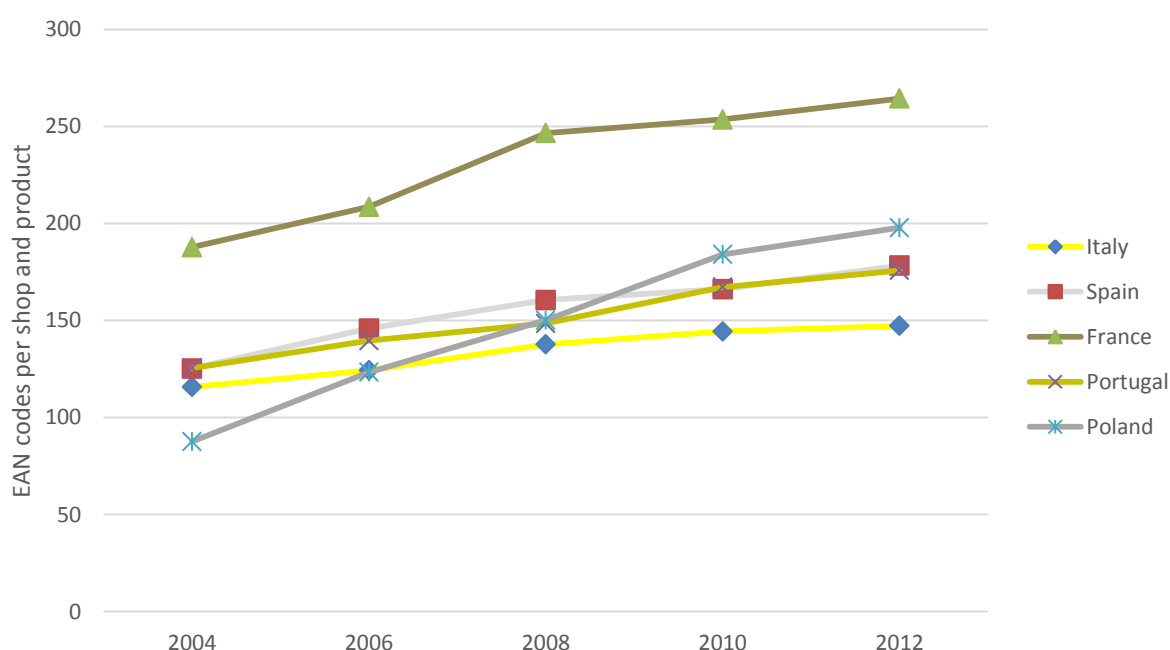


Figure 139 shows the average number of EAN codes (across all shops in the long data set) by product category. The figure shows that choice (on this measure) increased in almost all product categories (the exception is canned vegetables, where the number of EAN codes decreased after 2008, and is potentially due to incomplete or unreliable data for this product category in selected MS). The figure also shows that the number of EAN codes varies across product categories, reflecting the particular features of each type of product. The econometric analysis includes a fixed effect for each product category to capture this. For the same reason as discussed above for Member State fixed effects, the interpretation of the product category fixed effects is complicated by the presence of the national product category turnover driver, which varies across product categories: for some product categories, the fact that the number of EAN codes is relatively high or low may be completely accounted for by the relative size of the product category turnover, and so the fixed effect for that product category could be close to zero.

Figure 139: Average number of EAN codes per shop by product category (source: analysis based on © Nielsen Opus. Data are for first period in each year)

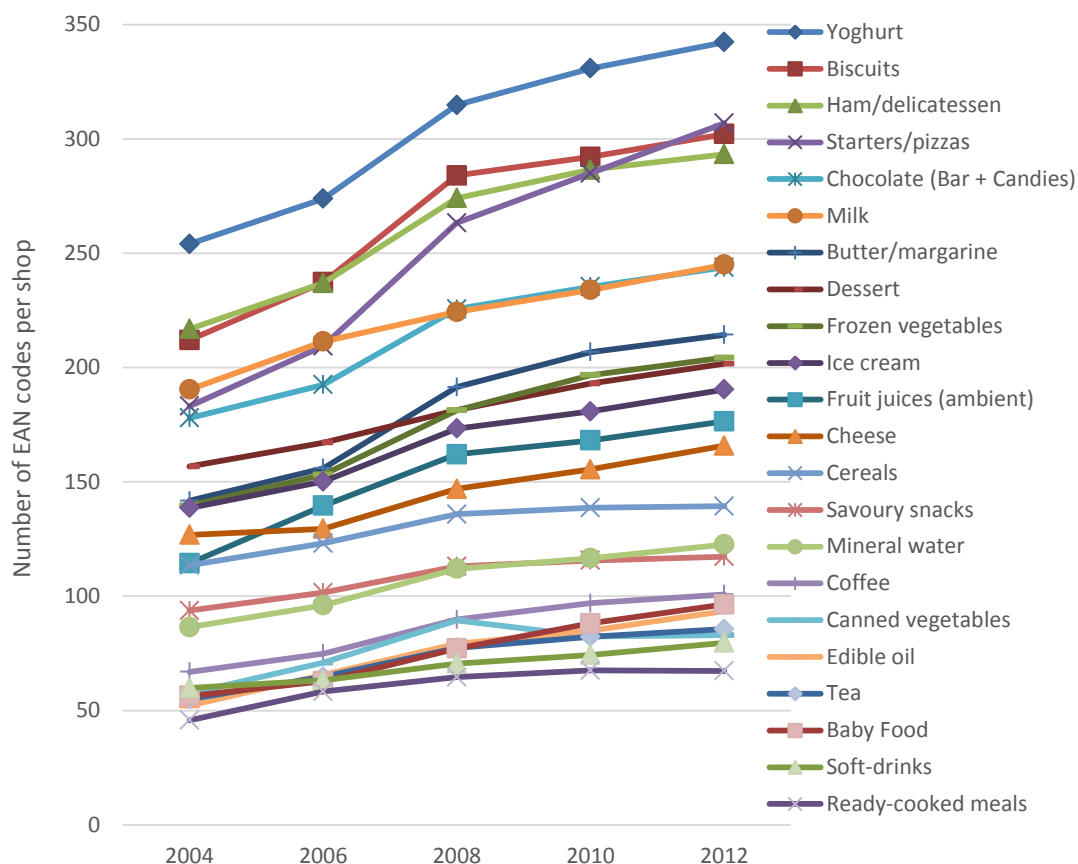
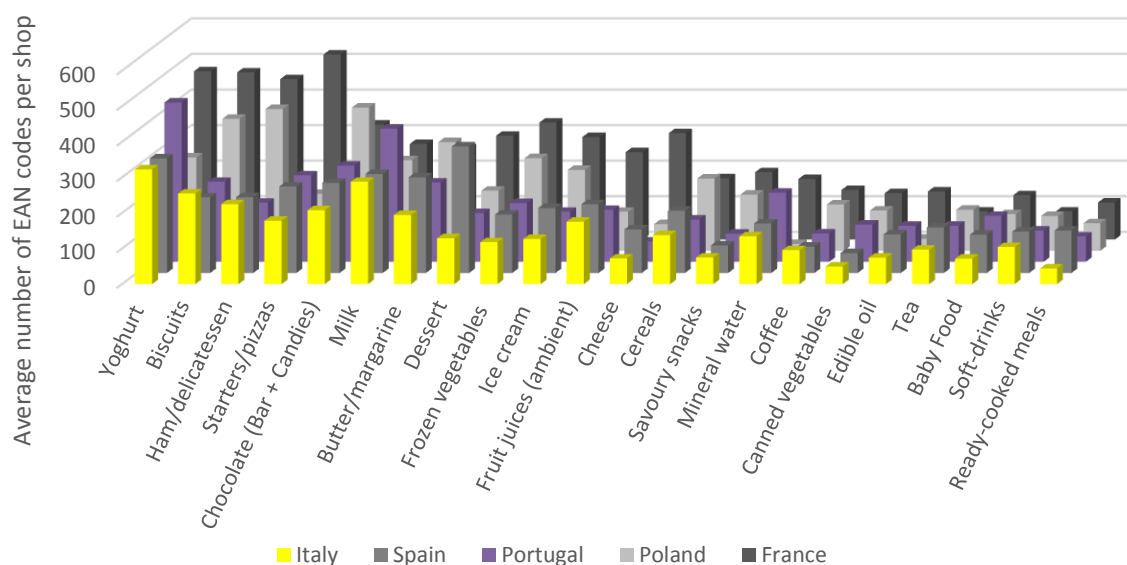


Figure 140 shows that the ranking of product categories on this choice indicator is similar, but not identical, across the Member States in the long data set (again, the data are for hypermarkets only, to filter out the effect of variations in the shop-type mix across Member States in our sample). The inclusion of both product category and Member State fixed effects in the econometric analysis is intended to allow for these differences (to the extent that they are not explained by other drivers).

Figure 140: Average number of EAN codes per shop in hypermarkets in selected Member States in 2012, presented by product category (source: analysis based on © Nielsen Opus)



8.2. Innovation

Figure 141 shows the level and trend in the total number of innovative EAN codes by type of shop. It shows the same difference in levels that was observed for the choice indicator among the three types of shop. The trends following the recession differ, in that hard discounters continued to increase the number of innovative products that they stocked (but from a low level). Again, fixed effects are included for shop types in the econometric analysis to reflect this difference in levels.

Figure 141: Average number of new EAN codes per shop and per product category, presented by shop type (long data set) (source: analysis based on © Nielsen Opus. Data are for first period in each year)

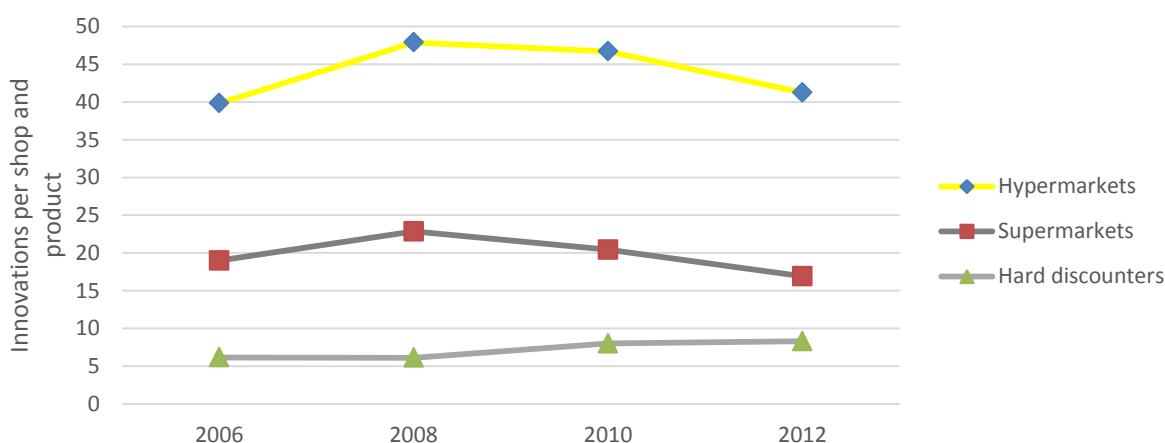


Figure 142 shows innovations in the sample shops by the Member States in the long data set. Again, the data are for hypermarkets only, to filter out any difference in the mix of shops by Member State in our sample. As was the case with the choice indicator, France ranks highest, but unlike the case for the choice indicator Italy is distinctly

lowest. There is a somewhat different trend across Member States, with the number of innovative products continuing to increase in 2010 in Poland and Portugal, whereas in the other three Member States the number remains flat or falls. Again, Member State fixed effects are included in the econometric analysis to reflect the difference in levels: the difference in trend is left to be explained by other drivers (for example, macroeconomic drivers to capture the impact of the recession).

Figure 142: Average number of new EAN codes per shop and per product category in hypermarkets in selected Member States (long data set) (source: analysis based on © Nielsen Opus. Data are for first period in each year)

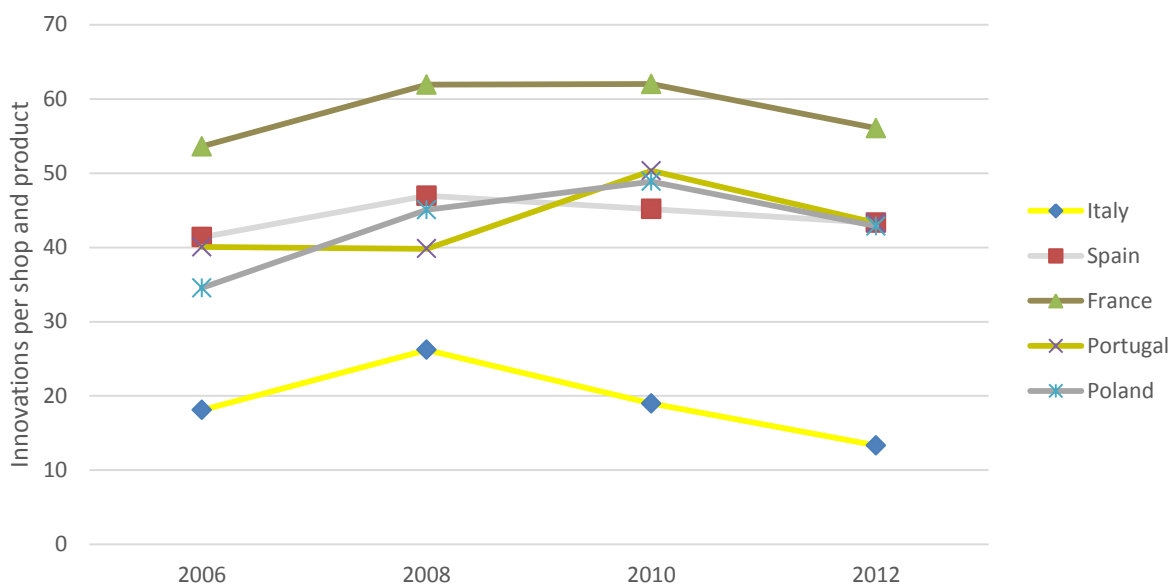


Figure 143 shows the level and trend in innovations in the shops in the long data set by product category. Differences in trend across product categories are more pronounced here than they are for choice. For most product categories the number of innovations peaked in 2008; for some (savory snacks, canned vegetables, ready-cooked meals and milk) the peak came in 2010; for desserts and cereals, the number of innovations increased through to 2012. Product category fixed effects are included to capture the difference in levels (the part not explained by differences in national product category turnover); the analysis includes indicators that vary by product category (national product category turnover and national supplier concentration) to try to account for the differences in trend.

Figure 143: Average number of new EAN codes per shop by product category (long data set) (source: analysis based on © Nielsen Opus. Data are for first period in each year)

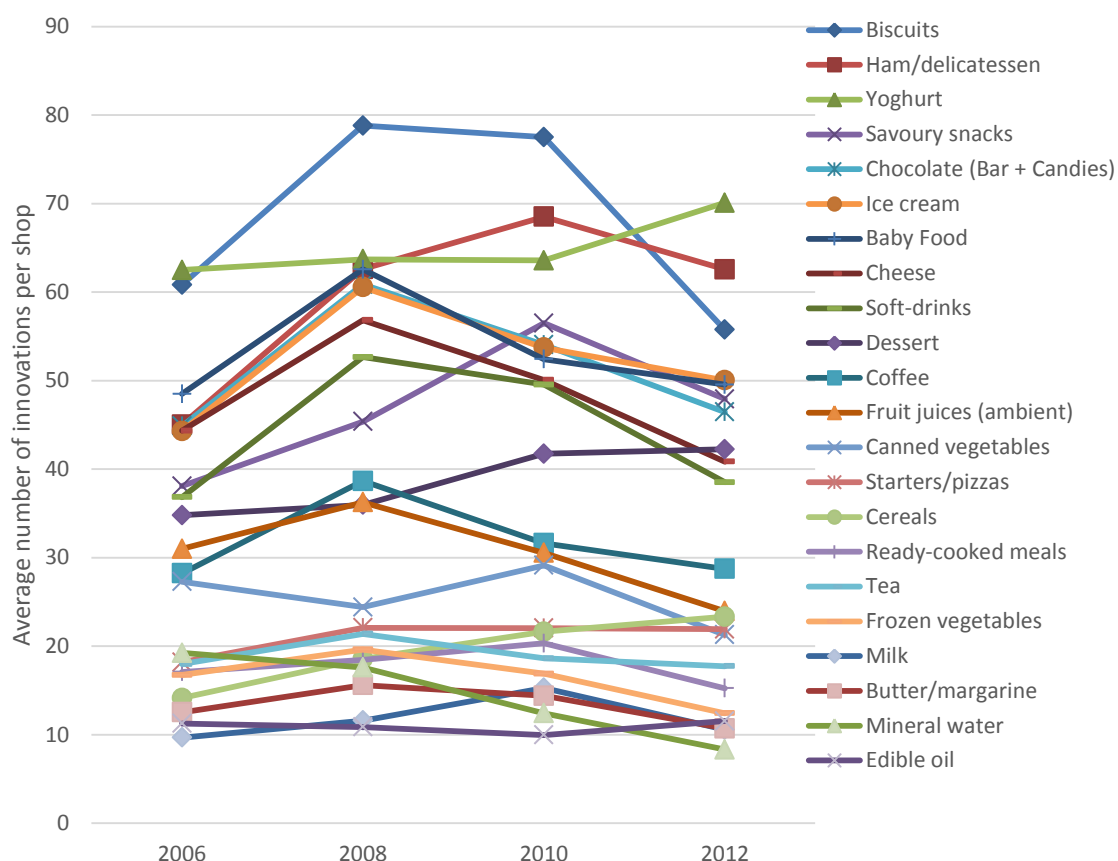
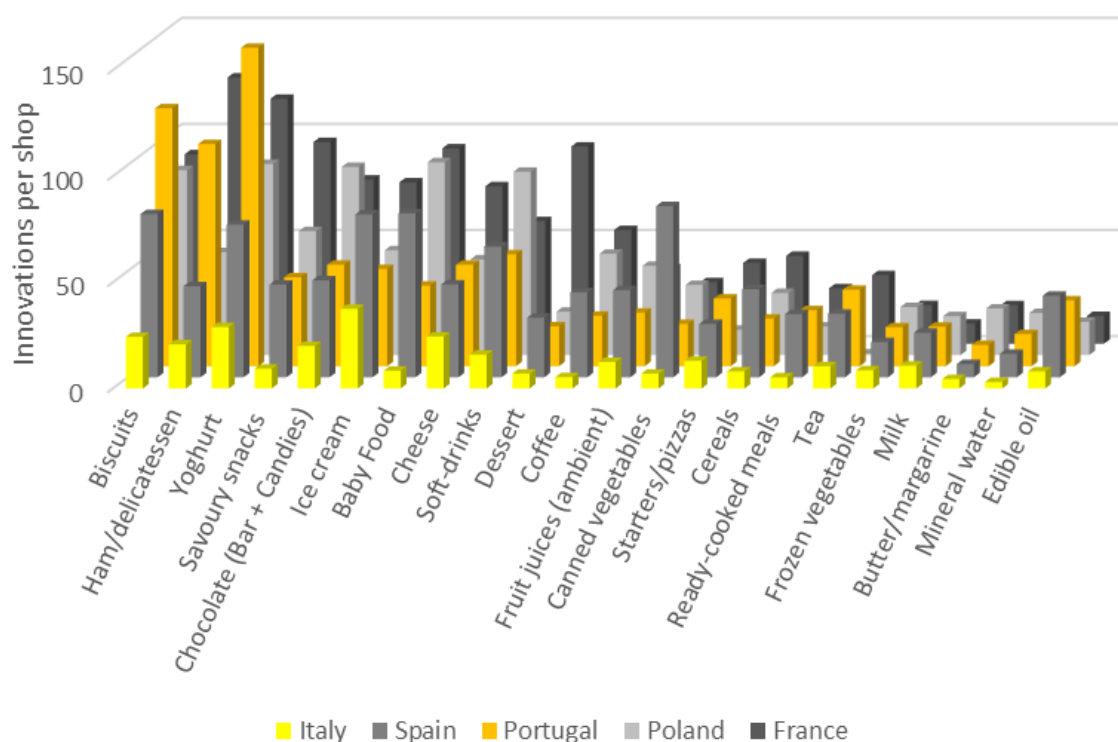


Figure 144 shows average innovations per shop in hypermarkets in 2012 by Member State and product category. There is somewhat more variation in the pattern between Member States than is the case for choice, suggesting that national factors play a greater role in influencing innovation behaviour in product categories than they do for choice.

Figure 144: Average number of new EAN codes per shop in hypermarkets in selected Member States in 2012, presented by product category (long data set) (source: analysis based on © Nielsen Opus)



9. Results of the econometric analysis

9.1. Introduction

This section provides the key results from the econometric analysis. Each driver is discussed in turn with comments on the evidence linking it to choice and innovation. Graphical analysis is presented to help to illustrate and interpret the econometric results, recognising the limitation that the graphs are typically limited to showing the relationship between choice or innovation and *one* driver, without controlling for the effects of the other drivers (as the econometric analysis does).

In the reporting, there is a focus on the results obtained from analysis of the long (time period) data set, and then comments are made on the extent to which those conclusions change when the equations are estimated over the short (time period) data set. Full results are reported in Annex F.

Below is a summary of the conclusions. Subsequent sections examine the estimated impacts of each key driver in turn.

9.2. Summary of results for drivers

This section brings together the results that are explored in more detail in the subsequent section so as to provide a summary of the findings. For each dependent variable (the various measures of choice and innovation), a number of different equations were estimated reflecting

- alternative measures for some of the drivers
- two time periods and associated samples of shops
- alternative econometric methods

For each driver, a parameter estimate with an associated measure of statistical significance and of economic importance⁷⁸ is calculated for each equation estimated. In this summary findings that generally emerged across the alternative equations that were estimated have been reported; where relevant, cases where the findings changed markedly between alternative equations have been noted. Fuller details are provided in the subsequent section and in Annex F.

The estimated scale of the effect of some of the drivers is sensitive to the choice of whether the long or short time period samples were used. Both the time period and the selection of countries changes between these two samples, but because a substantial number of the shops are present in both samples, the difference in results typically⁷⁹ reflects the difference between the two time periods: one includes 6 periods prior to the recession as well as the 4 recession periods, while the other includes 2 periods just prior to the recession and the 4 recession periods. The fact that some parameter estimates change depending on the time period used indicates that the impact of the recession on choice and innovation is not sufficiently captured by the change in the experience of the drivers when the recession occurred. The relationship between, say, GDP per capita and choice appears to be different during a period of steady growth than during a period when recession takes hold. One way of interpreting this is to conclude that our drivers are not comprehensive and exclude some influences on the behaviour of retailers and manufacturers that differed greatly in the pre-recession period compared with during the recession. Clearly various influences on food manufacturers (raw material price

⁷⁸ See Section 5.3 for the way in which 'economic importance' has been defined and calculated.

⁷⁹ This was examined by taking the selection of shops used for the long data set but restricting the period of estimation to that of the short data set.

volatility, energy cost price volatility, food safety regulations, consumer attitudes to environmental sustainability) changed during the 2004-12 period but their influence could be difficult to capture in equations estimated over a data set where the number of observations mainly comes from the number of shops and product categories rather than the number of time periods.

Because the econometric estimation is carried out over the dimensions of shops, product categories and time, the results reflect estimates of the impact of drivers over all three of these dimensions taken together and not necessarily any one of them. For example, a result reported for the impact of the unemployment rate is based on the observed variation over time and geographical areas: there is no separate estimate for the impact of changes over time versus variation over space. The exception to this is the case of the Fixed Effects estimator, where each indicator is transformed by subtracting the mean of each time series for shop and product categories from each time period's observation, so that the impact of differences in levels across space (for example, differences in the level of GDP per capita between one area and another) is removed. Hence, although the observations are taken from different areas and product categories, the reported results for the Fixed Effect estimator reflect the different experiences of each shop and product category with respect to the *changes over time* rather than the differences in levels across space.

Not all drivers vary across all the possible dimensions of shops, product categories and time. Some economic drivers (the unemployment rate and GDP per capita) vary across local areas and time, but not across shops within the same local area or across product categories. Some drivers are available at national level only; of these, some vary across countries, product categories and time; some vary only across countries and time with no product category dimension. In those cases where a driver does not vary across a given dimension, it cannot explain variation in choice or innovation that occurs within that dimension. For example, the regional unemployment rate driver cannot account for differences in choice or innovation between shops in the same region; instead, the parameter estimate reflects differences between the experience of the whole set of shops in a region (and time period) compared with the sets of shops in other regions (and time periods).

Because the number of countries and time periods is quite small, we regard the parameter estimates for drivers that vary only across countries and time as having a less secure basis than those for drivers that vary also across other dimensions: the small number of observations leaves open the possibility there could be some other macroeconomic driver omitted from the analysis that is responsible for the differences in choice or innovation across countries and time periods. For this reason, in the summary tables (Table 29 and Table 30) we include a column entitled 'Reduced dimensions' and place a flag in it to identify these drivers.


9.2.1. Choice

Although statistically significant effects were sometimes found, the impacts of the drivers that measure indicators that relate directly to retailers and suppliers were mostly small. The main drivers were found to be the GDP per capita of the region in which the shop is located, national turnover in the product category, certain shop characteristics (format, floorspace) and the presence of a new shop opening in the local area: these all had positive impacts on choice.


Table 29: Summary of econometric results for key drivers: choice


| Driver | Low Dim. | Product variety | | | Product size variety | | | Product supplier variety | | | Product price variety | | | Comments | Business explanations | | |
|---|----------|-----------------|---------|----------|----------------------|---------|----------|--------------------------|---------|----------|-----------------------|---------|----------|----------|-----------------------|--|---|
| | | Sign | Signif. | Import. | Sign | Signif. | Import. | Sign | Signif. | Import. | Sign | Signif. | Import. | | | | |
| <i>Retail concentration</i> | | | | | | | | | | | | | | | | | |
| Procurement (national) level | FB | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | ▼ | ✓✓ | ●● | Few observations (macro level driver). Result reflects tendency for price variety to be greater in Italy (low retail concentration) than in Spain and Portugal (higher concentration), and the reduction in product price variety during the recession. | Too few observations over countries and time to draw conclusions: some other trend may have been driving choice in the same period. Selection of countries does not include cases with the highest level of retail concentration. |
| Local level | | .. | .. | .. | ▼ | ✓ | .. | .. | .. | .. | .. | .. | .. | .. | .. | Negative effect for both product variety and product size variety, but only significant for product size variety. | Shops facing greater competition respond by offering more choice (but scale of effect is small). |
| Supplier concentration at procurement (national) level | | .. | .. | .. | ▲ | ✓✓ | .. | .. | .. | .. | .. | .. | .. | .. | .. | Small but significant positive impact for product size variety in long data set. | |
| Imbalance between retailers and suppliers at procurement (national) level | | .. | .. | .. | ? | ✓✓ | .. | .. | .. | .. | .. | .. | ? | ✓✓ | ● | Few observations (macro level driver) for numerator (retail concentration at national level). Direction of impacts not consistent between long and short data periods. | Selection of countries does not include cases with the highest level of retail concentration. |
| <i>Private labels</i> | | | | | | | | | | | | | | | | | |
| National level | | .. | .. | .. | .. | .. | .. | ▲ | ✓✓ | .. | ▲ | ✓✓ | .. | .. | .. | A small positive impact of private label share of assortment on choice is probably due to the fact that retailers tend to keep branded products in their assortment beside the private labels. In other words, they don't withdraw as many branded products as they introduce more private labels. | |
| Local level | | ▲ | ✓✓ | .. | ▲ | ✓✓ | .. | ▲ | ✓✓ | .. | ▼ | ✓✓ | .. | .. | .. | Some indication of a negative impact when the share of private labels exceeds a certain level (which varies depending on the product category). | A small positive impact of private label share of assortment on choice is probably due to the fact that retailers tend to keep branded products in their assortment beside the private labels. In other words, they don't withdraw as many branded products as they introduce more private labels. However, at local level the high PL share seems to limit the price scale offered to customers. |
| Product category turnover (sales) at procurement (national) level | | ▲ | ✓✓ | ●● | ▲ | ✓✓ | ●● | ▲ | ✓✓ | ●● | ▼ | ✓✓ | .. | .. | .. | Strong positive impacts for all choice indicators except product price variety (negative). | Product categories with high sales turnover are those where there is a greater commercial potential for each SKU. There is also more economic potential for more suppliers in these categories. |
| New shop opening in the local area | | ▲ | ✓✓ | ● | ▲ | ✓✓ | ● | ▲ | ✓✓ | .. | ▲ | ✓✓ | .. | .. | .. | Positive impact for all choice indicators. | To face a new competitor, established retailers will seek to retain customer loyalty by including additional products to either match competitors or better satisfy existing customers. |
| <i>General economic drivers</i> | | | | | | | | | | | | | | | | | |
| Unemployment | | ▲ | ✓✓ | .. | ▲ | ✓✓ | .. | ▲ | ✓✓ | .. | ▼ | ✓✓ | ● | .. | .. | Negligible positive (unexpected) impacts for all choice indicators except product price variety (negative). | More unemployment tends to change consumer behaviours who will probably look for cheaper products and limit their purchase of more expensive products. As a result, retailers propose more cheaper products but tend to limit the price scale of their assortments. |
| GDP per capita | | ▲ | ✓✓ | ●● | ▲ | ✓✓ | ●● | ▲ | ✓✓ | ●● | ? | ✓✓ | .. | .. | .. | Strong positive impacts for all choice indicators except product price variety (smaller; negative in short data set) | More prosperous areas with higher GDP per capita may tend to encourage retailers to extend product choice and supplier choice in order to increase the average shopping basket of their customers. One can also imagine that more expensive products can be proposed to customers, enlarging the product price variety. |
| Population | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | ▲ | ✓✓ | .. | .. | .. | Negligible impacts on most choice indicators. | (Population density is a more relevant driver than population size of the region) |
| Population density | | ▼ | ✓✓ | ● | ▼ | ✓✓ | ● | ▼ | ✓✓ | ● | ▼ | ✓✓ | .. | .. | .. | Negative impacts on most choice indicators. | It may be that, in densely populated areas, product rotations are higher than in less densely populated areas. In that case retailers may seek to limit the risk of out of stock products by limiting the number of different products on shelves. May also reflect impact of different competing shop mix (fewer very large shops in cities) on selection offered in each shop. |
| Shop type | | ▲ | ✓✓ | not app. | ▲ | ✓✓ | not app. | ▲ | ✓✓ | not app. | ? | ✓✓ | not app. | .. | .. | As expected (hypermarkets > supermarkets > discounters) except for product price variety in long data set. | As expected, hypermarkets provide more choice than supermarkets, which provide more choice than hard discounters. |
| Shop floor space | | ▲ | ✓✓ | ●● | ▲ | ✓✓ | ●● | ▲ | ✓✓ | ●● | ▲ | ✓ | .. | .. | .. | Larger shops have more shelf space, which enables retailers to display more different products from a larger variety of suppliers | |

The 'Low Dim column shows

 where the indicator varies only over time and countries, so that there are few observations from which to draw conclusions.

The 'Sign' column shows

 positive impact (when the driver increases in value)

 negative impact (when the driver increases in value)

? where the sign varies according to whether the parameter is estimated over the long or short data sets

If an estimate was found to be statistically significant at 5% level or lower, the 'Signif.' column shows:

✓ significant at 5% level

✓✓ significant at 1% level

For statistically significant drivers, the 'Economic importance' (Import.) column shows the scale of impact of the driver on the dependent variable when the driver is increased by one standard deviation above its mean value (both based on the sample used for econometric estimation). The symbols used are:

● an impact of more than 5%

●● an impact of more than 10%

Where a driver is not statistically significant or economically important according to these thresholds, this is denoted by the symbol '..'

9.2.2. Innovation


The economic importance of the drivers was generally larger for innovation than for choice, although results were not consistent across different innovation measures. In particular, a different result was often found for the number of new packaging innovations compared with the other measures of innovation. Results also varied substantially between the long and short data sets, suggesting that behaviour changed during the recession in a way that was not fully captured by what happened to the drivers during that period. Among the indicators that relate directly to retailers and suppliers, greater concentration among retailers at a local level was associated with less innovation in the case of new packaging innovations. The econometric results showed a positive impact on innovation of greater concentration among retailers at the national level for some innovation indicators (but a negative impact on new packaging), but only a small number of observations are available for this indicator (it varies only over MS and years) and so it cannot be regarded as a definitive finding. A negative impact on some innovation measures was found for greater (national) concentration among suppliers: there is stronger support for this finding because the indicator varies across product categories as well as MS and years, providing a much larger number of observations. When the relative strength of retailer and supplier concentration was included in the single 'measure of imbalance' indicator, a similar result was found (greater supplier concentration relative to retailer concentration had a negative impact), but it should be remembered that the selection of countries covered does not include those with the highest level of national retail concentration. There was less evidence than was the case with choice that the presence of a new shop opening in the local area was associated with a positive impact on the offer of existing shops (more innovation). The impact of the economic drivers included some effects that were unexpected (in the direction of impact) and these estimates varied substantially between the two data sets.

Table 30: Summary of econometric results for key drivers: innovation


| Driver | Low Dim. | Opus innovations | | | New products | | | New packaging | | | New formulations | | | New range extensions | | | Comments | Business explanations |
|---|----------|------------------|---------|----------|--------------|---------|----------|---------------|---------|----------|------------------|---------|----------|----------------------|---------|----------|---|---|
| | | Sign | Signif. | Import. | Sign | Signif. | Import. | Sign | Signif. | Import. | Sign | Signif. | Import. | Sign | Signif. | Import. | | |
| <i>Retail concentration</i> | | | | | | | | | | | | | | | | | | |
| Procurement (national) level | Ⓜ | ▲ | ✓✓ | ●● | ▲ | ✓✓ | ●● | ▼ | ✓✓ | ●● | ? | ✓ | ●● | ▲ | ✓✓ | ●● | Few observations (macro level driver). Result reflects tendency for the number of innovations and the level of national retail concentration to rise in some countries (until recession). | Too few observations over countries and time to draw conclusions: some other trend may have been driving innovation in the same period. Selection of countries does not include cases with the highest level of retail concentration. |
| Local level | | .. | .. | .. | .. | .. | .. | ▼ | ✓✓ | ●● | .. | .. | .. | .. | .. | .. | Negative impact on most innovation measures, but not usually statistically significant. | Some evidence was found of a negative relationship between local retail concentration and innovation. The main observable impact is on new packaging. When they face less competition, retailers seem to be less prone to introduce innovations on their shelves. |
| Supplier concentration at procurement (national) level | | ▼ | ✓✓ | ● | .. | .. | .. | ? | ✓✓ | ●● | ▼ | ✓✓ | ●● | ▼ | ✓✓ | ●● | Negative impact on most measures. Positive impact on new packaging long data set. | Suppliers face greater pressure to innovate when competition is stronger. |
| Imbalance between retailers and suppliers at procurement (national) level | | ▲ | ✓✓ | ●● | ▲ | ✓✓ | ●● | ? | ✓✓ | ●● | ▲ | ✓✓ | ●● | ▲ | ✓✓ | ●● | Few observations (macro level driver) for numerator (retail concentration at national level). Positive impacts for some measures. Negative impact on new packaging in long data set. | Consistent with the impacts of retailer and supplier concentration. Selection of countries does not include cases with the highest level of retail concentration. |
| <i>Private labels</i> | | | | | | | | | | | | | | | | | | |
| National level | | ? | ✓✓ | ●● | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | A significant (and sizeable) impact was only found for the Opus innovations measure, but its sign varied between the long and short data set. | |
| Local level | | ▲ | ✓✓ | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | ▼ | ✓ | .. | Some indication of a negative impact when the share of private labels exceeds a certain level (which varies depending on the product category). | The impact of private labels on innovation is not clear. The share of private labels does not seem to impact negatively the number of innovations, especially new products. However, it seems to have a small impact on the number of range extensions, which could be less developed when the share of PL is high. |
| Product category turnover (sales) at procurement (national) level | | .. | .. | .. | ? | ✓✓ | ●● | ▲ | ✓✓ | ●● | ? | ✓✓ | ●● | ▲ | ✓✓ | ●● | For some indicators, there is a negative impact in the short data set. | Product categories with high sales turnover offer a greater commercial potential for investment in innovation. |
| New shop opening in the local area | | .. | .. | .. | ▲ | ✓✓ | ●● | .. | .. | .. | .. | .. | .. | .. | .. | .. | Only significant (and positive) in random effects for some indicators. | Less evidence that existing retailers respond to new competition by increasing the assortment of new products than by increasing the choice available. |
| <i>General economic drivers</i> | | | | | | | | | | | | | | | | | | |
| Unemployment | | ▼ | ✓✓ | ●● | ▼ | ✓✓ | ●● | ▲ | ✓✓ | ●● | .. | .. | .. | ▼ | ✓✓ | ●● | A higher unemployment rate is generally associated with a smaller number of innovations, reflecting the underlying macro-economic situation. Suppliers may be less likely to develop innovations during difficult economic times, and retailers may also be more hesitant in offering new innovative products at those times or in places where the economy is weak. The different result for new packaging suggests that during the economic crisis there was a shift towards that form of innovation and away from other forms. | |
| Retailer business expectations | Ⓜ | ▲ | ✓✓ | ●● | ? | ✓✓ | ●● | ▲ | ✓✓ | ●● | ▲ | ✓✓ | ● | ▲ | ✓✓ | ●● | Few observations (macro level driver) | Innovation is probably encouraged by an optimistic attitude from the stakeholders. Therefore there is a positive trend for new product innovation in periods when stakeholders business expectations are positive. |
| Population | | .. | .. | .. | .. | .. | .. | .. | .. | .. | ▲ | ✓ | ● | .. | .. | .. | Only a significant impact in one case. | |
| Population density | | .. | .. | .. | .. | .. | .. | ▼ | ✓✓ | ●● | ▼ | ✓✓ | ●● | .. | .. | .. | In high density areas, we observe less new packagings and new formulations, which may be explained by the need for retailers to prevent out of stock situations and limit the number of sizes of products available. | |
| Shop type | | ▲ | ✓✓ | not app. | ▲ | ✓✓ | not app. | ▲ | ✓✓ | not app. | ▲ | ✓✓ | not app. | ▲ | ✓✓ | not app. | As expected (hypermarkets > supermarkets > discounters). Negative impact of hard discounters is much larger than for choice. | The larger assortment of products available in larger format shops is also reflected in a larger selection of innovative products. The smaller range offered by discounters seems to be oriented towards non-innovative products. |
| Shop floor space | | ▲ | ✓✓ | ●● | ▲ | ✓✓ | ●● | ▲ | ✓✓ | ●● | ▲ | ✓ | ●● | ▲ | ✓✓ | ●● | Large significant effects found in random effects estimator (which compares shops across space), but typically not in fixed effects estimator (which only detects cases where a shop changes size but not format over time). | As expected, larger shops, for a given format, provide a greater number of innovative products |


Results of the econometric analysis

The 'Low Dim' column shows

 where the indicator varies only over time and countries, so that there are few observations from which to draw conclusions.

The 'Sign' column shows

 positive impact (when the driver increases in value)

 negative impact (when the driver increases in value)

? where the sign varies according to whether the parameter is estimated over the long or short data sets

If an estimate was found to be statistically significant at 5% level or lower, the 'Signif.' column shows:

✓ significant at 5% level

✓✓ significant at 1% level

For statistically significant drivers, the 'Economic importance' (Import.) column shows the scale of impact of the driver on the dependent variable when the driver is increased by one standard deviation above its mean value (both based on the sample used for econometric estimation). The symbols used are:

● an impact of more than 5%

●● an impact of more than 10%

Where a driver is not statistically significant or economically important according to these thresholds, this is denoted by the symbol '.. '

9.3. Retail concentration

9.3.1. Retail concentration at the procurement (national) level

Choice

| | |
|---------------------------|------------------------------------|
| Statistical significance: | No, except product price variety |
| Direction of impact: | Negative for product price variety |
| Economic importance: | Large for product price variety |

The impact of two alternative measures of retail concentration at the national level was examined: concentration among retailers in modern retail formats and concentration in the edible groceries market (both measured using the Herfindahl-Hirschman Index).

Little indication was found of an impact of national retail concentration on choice (product variety) when the measure used was concentration among retailers in modern retail formats. Results were generally not statistically significant in fixed effects in the long period^{80, 81}. For product variety a positive, statistically significant impact was found in the short period⁸². For product price variety a negative, statistically significant impact was found in the short period in both fixed and random effects.⁸³

When the measure used was concentration among retailers in the edible groceries market, there was evidence of small, positive, statistically significant impacts on product variety and product price variety in the long period (in both random and fixed effects) in the long data period⁸⁴, and these became larger in the short data period⁸⁵. A negative impact on product price variety was found in the long and short data periods⁸⁶.

Both these drivers vary only across Member States and year (not across product categories or across shops in any given Member State), and so the number of distinct observations (the number of Member States multiplied by the number of years) is much smaller than for other drivers. Consequently there is not a strong basis for asserting that any observed relationship reflects a causal mechanism: most of the variation in choice in the data set is between shops at local level and between product categories, across which (in any given Member State) the national retail concentration measure does not vary. The drivers pick up the association between rising choice and, on some measures and, in some Member States, rising retail concentration over time and by the comparison across Member States (having accounted for other indicators that vary across the same dimensions).

⁸⁰ This discussion of results draws on an evidence base of over 300 separately-estimated econometric equations, reflecting differences in the selection of alternative measures of choice and innovation, drivers, time periods and methods. This set of results is provided in an accompanying file in which the equations are numbered sequentially [1], [2],... for ease of reference. Footnotes associated with the findings reported here refer to particular numbered equations in that file.

⁸¹ Equations [6], [42], [78].

⁸² Equation [24].

⁸³ Equations [113]-[114].

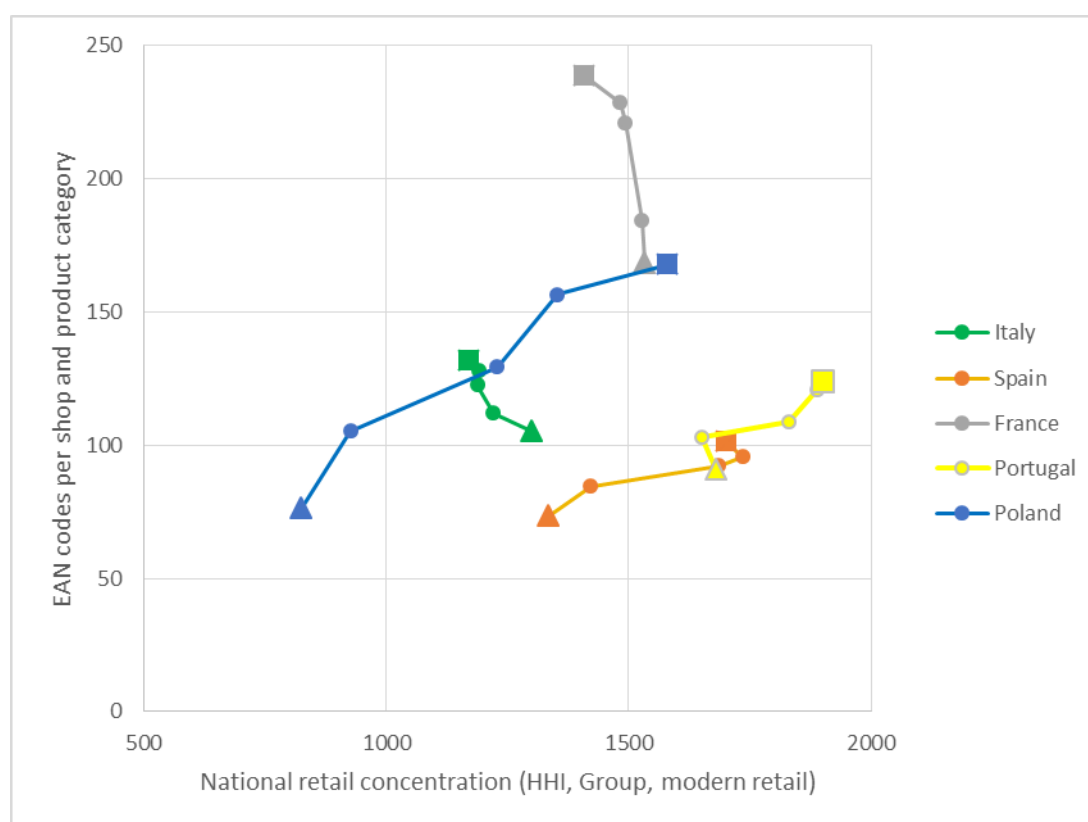
⁸⁴ Equations [1]-[4], [11-14], [37]-[40] and [47]-[50].

⁸⁵ Equations [19]-[22], [29]-[32].

⁸⁶ Equations [109]-[112], [119]-[122], [127]-[130] and [137]-[140].

Figure 145 shows the different experiences of the different Member States using the measure of retail concentration in modern retail formats. The five data points for each Member State represent the five selected years in the sample: in those Member States where national retail concentration has been increasing over the past decade, the data points are ordered by time running from left to right; in those where concentration has been falling the direction of change over time is from right to left. Each data point shows, measured on the vertical axis, the average number of EAN codes across shops and products. The trend towards greater choice over time is reflected in the increase in the average number of EAN codes in each Member State (an upward movement in the chart). Italy and France saw a small reduction in national retail concentration over the period; Spain and Portugal saw quite rapid increases; Poland saw a rapid increase from a low starting point.

Figure 145: Choice in variety of EAN codes in the sampled shops versus national retail concentration (source: analysis based on © Nielsen Opus and © Planet Retail. Data are for first period in each year 2004, 2006, 2008, 2010 and 2012)



Note: Note: ▲ denotes 2004 and ■ denotes 2012.

The sample does not include Member States that have high concentration levels (the maximum for the HHI measure shown in Figure 145 is 10,000). The effect that an increase in concentration has on choice for a Member State where retail concentration is at lower levels may not be comparable to the effect on choice in a Member State where retailers are highly concentrated.

Innovation

| | |
|---------------------------|---|
| Statistical significance: | 1% |
| Direction of impact: | Positive except for new packaging (negative) and new formulations (ambiguous) |
| Economic importance: | Large (for modern retail measure) |

A positive impact of national retail concentration on some measures of innovation was found, but the number of observations is small (four years in each Member State in the long data set, and three years in the short data set). Again it should be emphasised that there is not a strong basis for asserting that any observed relationship reflects a causal mechanism: most of the variation in innovation in the data set is between shops at local level and between product categories, across which (in any given Member State) the national retail concentration measure does not vary.

A strong positive impact of national retail concentration in modern retail formats on Opus innovations was found in the long and short data sets⁸⁷ and on new products, new formulations and new range extensions in the long data set⁸⁸. However, a strong negative impact on new packaging was found in both long and short data sets⁸⁹.

The impact of national retail concentration in the edible groceries market was more mixed, although broadly consistent with the results for modern retail formats. For the Opus innovations measure, a positive impact of national retail concentration in the edible groceries market was found in the long (in Fixed Effects) and especially the short data sets⁹⁰. For new products, the estimated impacts were often not statistically significant for new products in the long data set⁹¹ but were positive and statistically significant (in Fixed Effects) in the short data set⁹². For new packaging, the impact of national retail concentration was generally negative (in Fixed Effects) in the long data set⁹³, and insignificant in the short data set⁹⁴. For new formulations, the impacts were generally positive in the long data set⁹⁵ and negative in the short data set⁹⁶. For new range extensions, the impacts were generally insignificant in the long data set⁹⁷ but positive in the short data set⁹⁸.

Figure 146 shows the variation in experience for Opus innovations in the different Member States which suggests why a positive impact was found. In three of the Member States the increase in concentration is generally associated with more innovations over time except in the last period when innovations fell; in France and Italy the fall in

⁸⁷ Equations [149]-[150], [169]-[170]

⁸⁸ Equations [189]-[190], [269]-[270], [309]-[310].

⁸⁹ Equations [229]-[230], [249]-[250].

⁹⁰ Equations [146], [156], [158], [165]-[168], [175]-[178], [183]-[184].

⁹¹ Equations [185]-[188], [195]-[198], [203]-[204].

⁹² Equations [206], [216], [218], [224].

⁹³ Equations [226], [230], [235], [244].

⁹⁴ Equations [245]-[248], [255]-[258], [244].

⁹⁵ Equations [265]-[270], [275]-[278], [283]-[284].

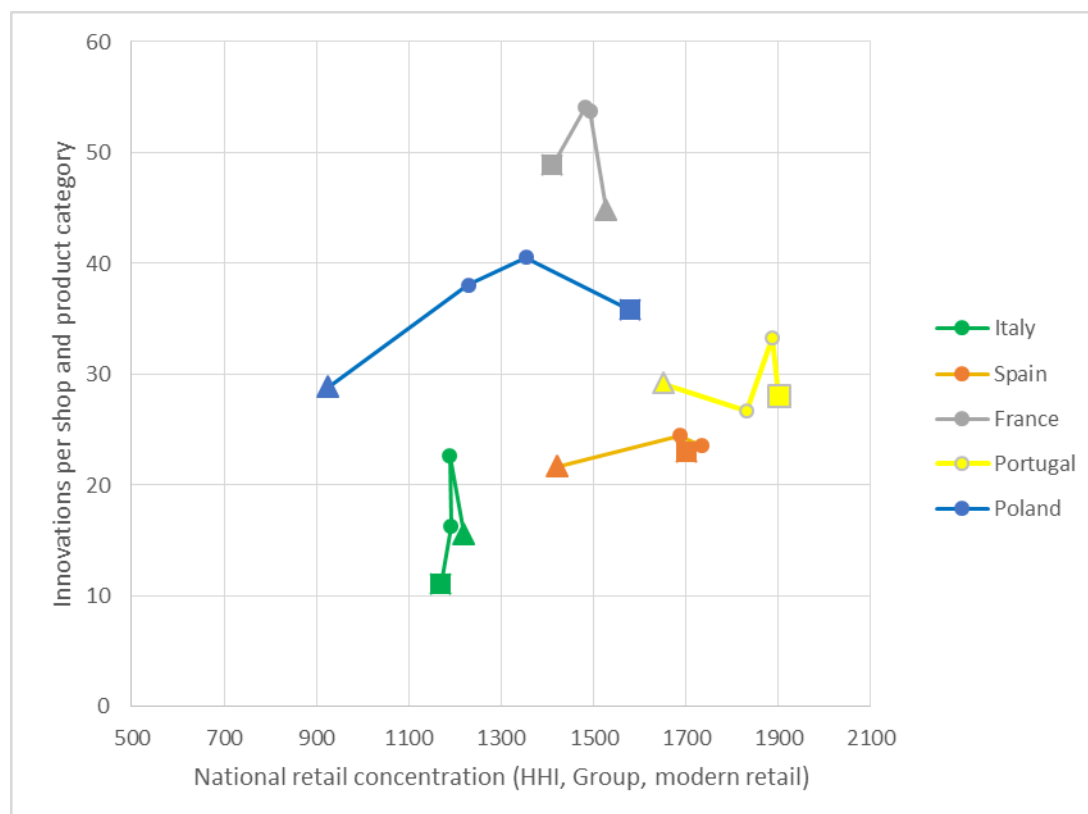
⁹⁶ Equations [285]-[288], [290], [295]-[298].

⁹⁷ Equations [305]-[308], [315]-[318], [323]-[324].

⁹⁸ Equations [325]-[328], [335]-[338], [343]-[344].

innovations in the last period is associated with a reduction in concentration. Although we have sought to control for the general macroeconomic environment, the small number of observations available for this national driver means that we cannot be sure that the positive association generally evident in these charts is not simply the coincidence of two trends over time: increasing innovations (up until the recession) and increasing concentration in some Member States.

Figure 146: New EAN codes (innovation) versus national retail concentration (source: analysis based on © Nielsen Opus and © Planet Retail. Data are for first period in each year 2006, 2008, 2010 and 2012)



Note: ▲ denotes 2006 and ■ denotes 2012.

9.3.2. Retail concentration at the local level

Choice

Statistical significance: No (except for product size variety)

Direction of impact: Negative

Economic importance: Small

The impact of two alternative measures of retail concentration faced by each shop at the local level was examined: concentration by banner and concentration by group (both measured using the Herfindahl-Hirschman Index applied to shares of floorspace of the shops located sufficiently close to be competitors to any given shop).

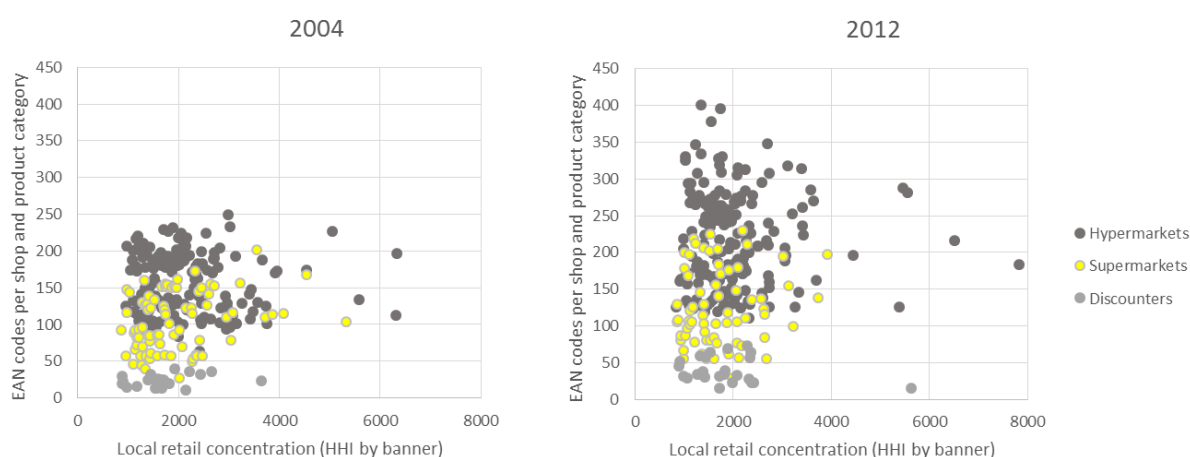
No evidence was found in the long data set of a large statistically significant impact of greater local retail concentration on any choice indicator. The estimated parameter was

generally negative (so an increase in local concentration would be associated with a reduction in choice), but it was so small as to be economically irrelevant and usually not statistically significant from zero.

For product variety, the impacts were negative but not statistically significant⁹⁹. For product size variety the impacts were negative, sometimes statistically significant, but small¹⁰⁰. For product supplier variety and product price variety the impacts were not statistically significant¹⁰¹.

Figure 147 gives an illustration of the lack of relationship. It shows that in each of the two years, there was no indication that a greater degree of local retail concentration was associated with either more or less choice, for the sample as a whole or for any of the three shop types. Between 2004 and 2012 the level of local concentration for the shops in the sample fell somewhat (there are more shops with higher HHI values in 2004 than in 2012), and the number of EAN codes rose (across all types of shop), but the econometric analysis found this negative relationship between local concentration and choice to be very small in magnitude.

Figure 147: Choice in variety of EAN codes versus local retail concentration by shop type in 2004 and 2012 (source: Analysis based on © Nielsen Opus and © Nielsen Trade Dimensions. Data are for first period in each year and cover Italy, Spain, France, Portugal and Poland.)



Innovation

Statistical significance: No (except for new packaging)

Direction of impact: Negative

Economic importance: Large for new packaging

Some evidence was found of a negative relationship between local retail concentration and innovation. For Opus innovations a negative impact of moderate magnitude was found in the long and short data sets for the Fixed Effects estimator, but the estimate is

⁹⁹ Equations [7]-[10], [25]-[28].

¹⁰⁰ Equations [43]-[46], [61]-[64].

¹⁰¹ Equations [79]-[82], [97]-[100], [115]-[118], [133]-[136]..

not statistically significant at the 5% level when standard errors are estimated using the more cautious method that clusters on CSAs¹⁰². The absence of a strong relationship is evident in the simple comparison in two years in Figure 148 between the average number of Opus innovations per shop and product category and the local retail concentration faced by each shop.

Figure 148: Opus innovations versus local retail concentration by shop type in 2004 and 2012 (source: Analysis based on © Nielsen Opus and © Nielsen Trade Dimensions. Data are for first period in each year and cover Italy, Spain, France, and Portugal.)

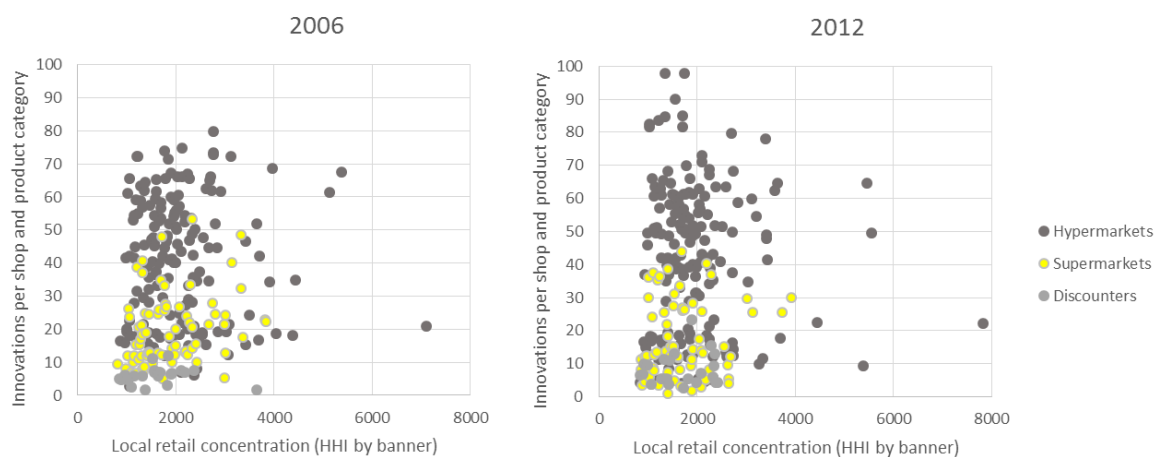
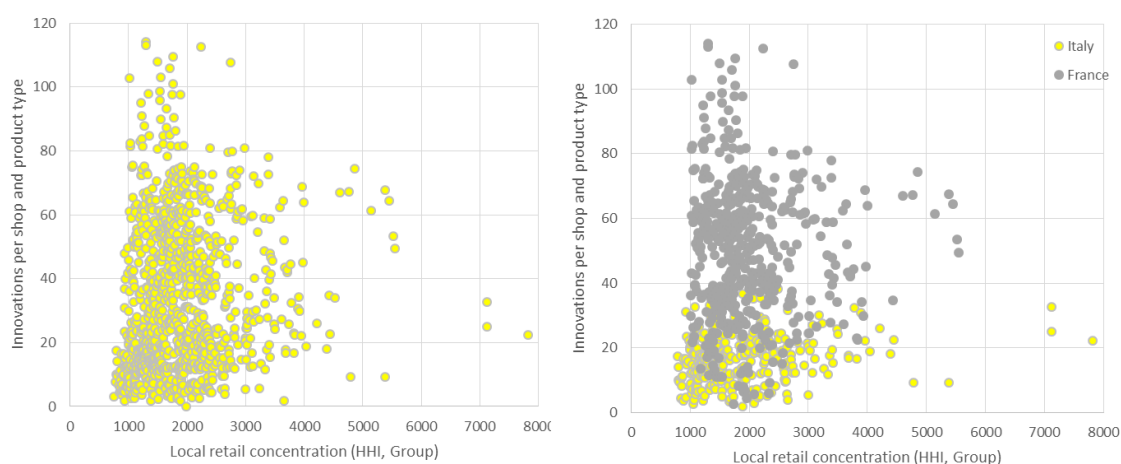


Figure 149 plots innovations per shop and product type for all the years. The left-hand chart includes the four Member States for which data are available for both indicators from 2006. In this chart, which combines all the years together, some indication can be seen of the tendency for the highest number of innovations to be found in locations where concentration is low, and for more cases where the number of innovations is low to be found in locations where concentration is higher. However, the high and low innovation cases seen in Figure 149 are in different Member States (France and Italy, as the right-hand chart shows): in France alone (for example), the negative relationship is not evident.

¹⁰² Equations [152], [154], [174].

Figure 149: New EAN codes (innovation) versus local retail concentration, all shops and years (source: analysis based on © Nielsen Opus and © Nielsen Trade Dimensions. Data are for first period in each year of 2006, 2008, 2010 and 2012, and, in the left-hand chart, cover Italy, Spain, France and Portugal)



Similar results were obtained for new products¹⁰³ as for Opus innovations, except that a strong and statistically significant negative effect was found in the short data set in Fixed Effects¹⁰⁴. For new packaging, a strong statistically significant negative impact was found for the Fixed Effects estimator¹⁰⁵. For new formulations and new range extensions the results were generally negative but statistically insignificant using the cautious estimate of standard errors¹⁰⁶. No statistically significant positive impact was found for any innovation measure.

9.4. Supplier concentration

Choice

Statistical significance: No (except product size variety)
 Direction of impact: Positive for product size variety
 Economic importance: Small

There is a focus on supplier concentration at the national level because for most products this is the relevant level for procurement. Data were not available to measure supplier concentration at local level adequately¹⁰⁷.

¹⁰³ Equations [[191]-[194], [211]-[214].

¹⁰⁴ Equations [212], [214].

¹⁰⁵ Equations [232], [234], [252], [254].

¹⁰⁶ Equations 271]-[274], [291]-[294], [311]-[314], [331]-[334]/

¹⁰⁷ The Opus data set allows us to measure the number of different suppliers of branded products, but this reflects what retailers have chosen to stock rather than the choices of suppliers available to retailers in the market. The econometric analysis estimated

The impact of two alternative measures of national supplier concentration in product categories was examined: the share of suppliers in the 'branded market' (excluding private labels altogether), and the share of suppliers in the 'full market' (treating private labels as a single supplier) using the Herfindahl-Hirschman Index. We focus on the results using the 'branded market' measure; the 'full market' measure is of interest in markets where private labels are particularly important.

No general evidence was found of an economically important impact of national supplier concentration on choice. For product variety, the estimated impact was small and generally negative in the long and short data sets, but not significant for the brand only measure¹⁰⁸; results were negative and small but statistically significant for the full market measure. For product size variety the impact was small, positive and statistically significant in the long data set and insignificant in the short data set¹⁰⁹ (on both measures). For product supplier variety there was rarely a significant impact¹¹⁰ (on both measures). For product price variety the impact was mostly small and the sign and significance varied between the long and short data sets¹¹¹ (on both measures).

Figure 150 gives an indication as to why no strong effect was found in the case of choice. It shows the average number of EAN codes per shop and the level of national supplier concentration in one period in 2008 for the five MS in the long data set, distinguishing the product categories. For each product category there are therefore five data points, one for each MS. Since the variation in national supplier concentration is much greater in the sample over product categories and MS than over time, the distribution shown in the chart is not greatly different for any given time period. It can be seen that there is little indication that the product categories with greater supplier concentration are those with either more or less choice.

equations including this indicator and generally found negative impacts, but this simply reflects the expected outcome that few EAN codes (and fewer innovative EAN codes)

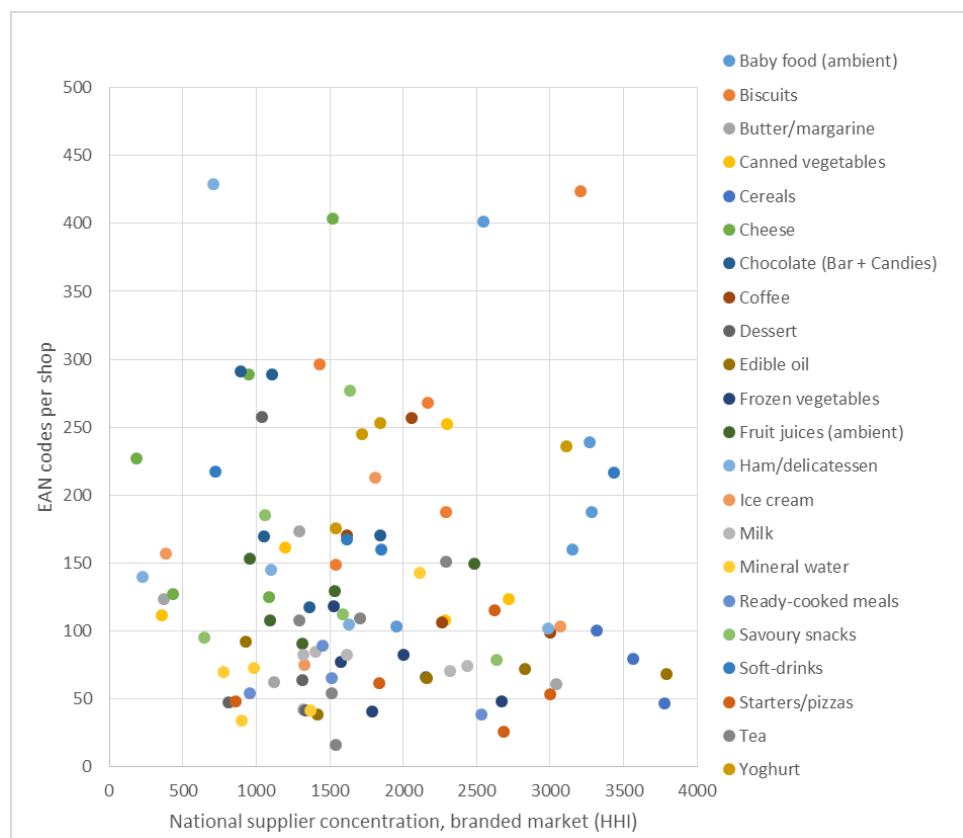
¹⁰⁸ Equations [1]-[12]], [19]-[30].

¹⁰⁹ Equations [[37]-[48], [55]-[66].

¹¹⁰ Equations [73]-[84], [91]-[102].

¹¹¹ Equations [109]-[120], [127]-[138].

Figure 150: Choice in variety of EAN codes versus national supplier concentration by product category, 2008 (source: analysis based on © Nielsen Opus and © Euromonitor International. Data are for first period in the year and cover Italy, Spain, France, Portugal and Poland)



Innovation

Statistical significance: 1% level for several innovation indicators
 Direction of impact: Mostly negative
 Economic importance: Moderate to large

Some evidence was found for a negative impact of national supplier concentration on innovation. For the Opus innovations measure, a negative statistically significant impact of national supplier concentration was found in the long and short data sets using the branded market measure¹¹²; using the full market measure there were some negative, statistically significant results in the long data set but these ceased to be statistically significant in the short data set¹¹³. For new products, a negative impact was found for the branded market measure in long and short data sets, but it was not statistically significant¹¹⁴. Using the full market measure, a negative, statistically significant impact was found in the long data set¹¹⁵; in the short data set the impact is generally positive

¹¹² Equations [155]-[156], [176].

¹¹³ Equations [145]-[154], [165]-[174].

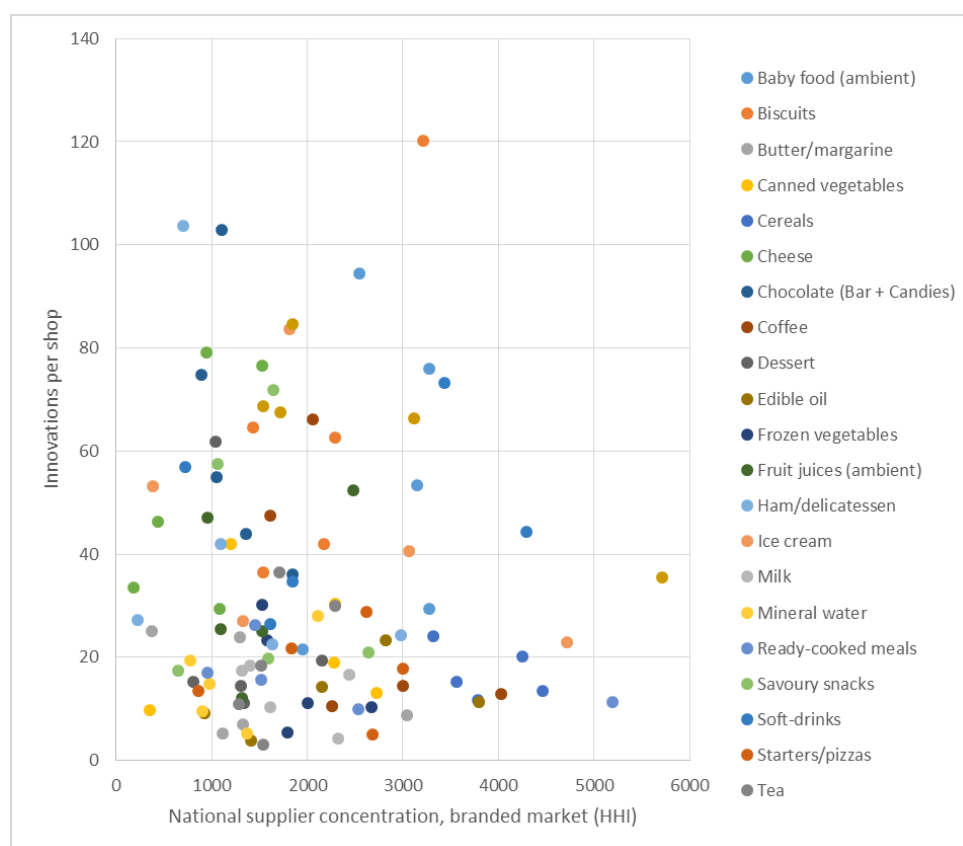
¹¹⁴ Equations [196], [216].

¹¹⁵ Equations [185]-[194].

and sometimes statistically significant for the Fixed Effects estimator¹¹⁶. For new packaging, a positive impact of national supplier concentration was found in the long data set¹¹⁷, but it is mostly negative and sometimes statistically significant in Fixed Effects in the short data set¹¹⁸ (both measures). For new formulations, and new range extensions the impact is negative and sometimes statistically significant in Fixed Effects in the long data set¹¹⁹ but not generally statistically significant in Fixed Effects in the short data set¹²⁰ (both measures).

The equivalent chart to Figure 150 for Opus innovations is shown in Figure 151. No obvious relationship is evident in this simple comparison.

Figure 151: Opus innovations versus national supplier concentration by product category, 2008 (source: analysis based on © Nielsen Opus and © Euromonitor International. Data are for first period in the year and cover Italy, Spain, France, Portugal.)



¹¹⁶ Equations [206], [208], [210], [212], [214].

¹¹⁷ Equations [225]-[236].

¹¹⁸ Equations [246], [248], [250], [252], [254], [256].

¹¹⁹ Equations [266], [268], [270], [272], [274], [276], [306], [308], [310], [312], [314], [316].

¹²⁰ Equations [286], [288], [290], [292], [294], [296], [326], [328], [330], [332], [334], [336].

9.5. Measure of imbalance between retailers and suppliers at national level

Choice

| | |
|---------------------------|---|
| Statistical significance: | Various |
| Direction of impact: | Ambiguous for statistically significant cases |
| Economic importance: | Moderate for product price variety |

Various combinations of national retailer and national supplier concentration are possible to construct a measure of imbalance (a ratio of retailer to supplier concentration). We focus on the ratio of national retail concentration in modern retail formats to national supplier concentration in the branded market; where relevant we also comment on results which use national supplier concentration in the full market in the denominator of the ratio.

Although our sample does not include the Member States with the highest retailer concentration, the sample still covers a wide range of situations regarding the measure of imbalance. The two choice indicators for which statistically significant estimates of impact were found for this measure of imbalance are, unsurprisingly, the ones for which a similar finding was found for either retail concentration or supplier concentration (product size variety and product price variety).

There is evidence of a positive relationship between product variety and imbalance in both the long and short data sets, but its value was small (and it was not statistically significant for the branded market imbalance measure in the long data set)¹²¹.

For product size variety the evidence is mixed: a small negative statistically significant relationship in the long data set¹²² and a small positive statistically significant relationship in the short data set¹²³ (both measures). For product supplier variety, no statistically significant impact was found¹²⁴. For product price variety a negative relationship was found in the long data set¹²⁵ (both measures).

Innovation

| | |
|---------------------------|--|
| Statistical significance: | 1% level |
| Direction of impact: | Positive for most indicators of innovation (ambiguous for new packaging) |
| Economic importance: | Large |

The results for the impact of this measure of imbalance on innovation are largely the mirror image of those for supplier concentration (the denominator in the ratio).

¹²¹ Equations [15]-[18], [33]-[36].

¹²² Equations [51]-[54].

¹²³ Equations [69]-[72].

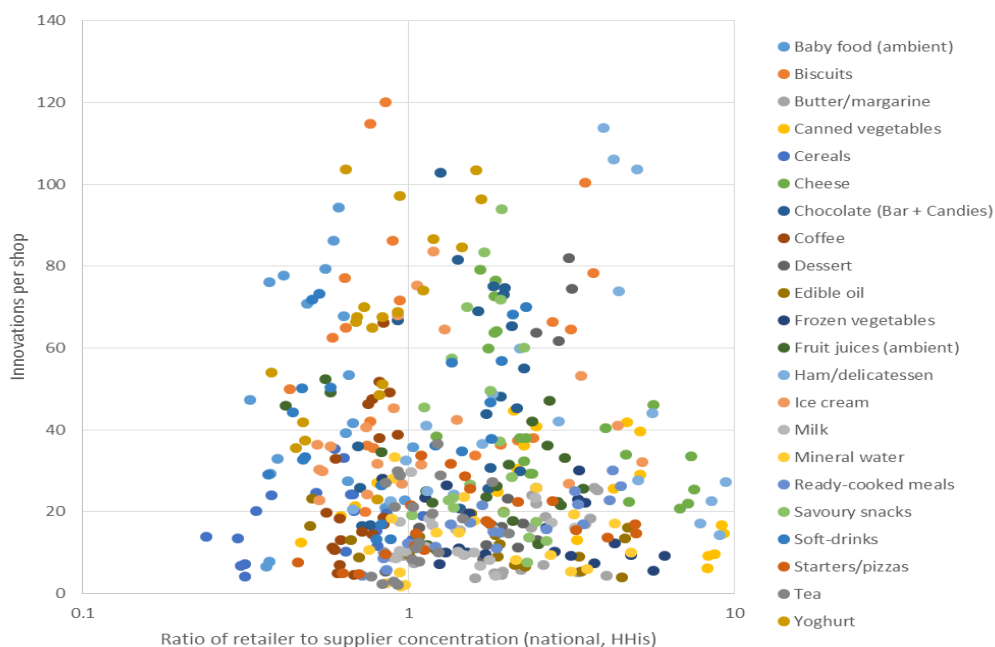
¹²⁴ Equations [87]-[90], [105]-[108]

¹²⁵ Equations [123]-[126].

Evidence was found of a statistically significant positive relationship between Opus innovations and the ratio of retailer to supplier concentration in the long and short data sets (on both measures of imbalance)¹²⁶. Similar results were found for new range extensions¹²⁷. Similar results were found for new products in the long data set¹²⁸, but the results were not statistically significant (in Fixed Effects) in the short data set¹²⁹. Similar results were found for new formulations in the long data set¹³⁰, but the results were negative (in Fixed Effects) in the short data set¹³¹. A negative relationship was found in the long data set for new packaging¹³². This is consistent with the negative result found for retail concentration and the positive result found for supplier concentration in the long data set.

In this case it is not easy to see any relationship in the simple graphical comparison of the two indicators, as Figure 152 illustrates. In those cases where a positive or negative relationship is found in the econometrics, this only emerges after controlling for other drivers.

Figure 152: New EAN codes (innovations) versus the ratio of retailer to supplier concentration (source: analysis based on © Nielsen Opus, © Planet Retail and © Euromonitor International)



¹²⁶ Equations [159]-[162], [179]-[182].

¹²⁷ Equations [319]-[322], [340], [342].

¹²⁸ Equations [199]-[202].

¹²⁹ Equations [220], [222].

¹³⁰ Equations [279]-[282].

¹³¹ Equations [300], [302].

¹³² Equations [239]-[242].

9.6. Private labels

Choice

| | |
|---------------------------|---|
| Statistical significance: | 1% level |
| Direction of impact: | Positive (except for impact of local share of private labels on product price variety, which is negative) |
| Economic importance: | Small |

The impact of two alternative measures of the importance of private labels in the market was examined: the share of private label EAN codes *in each local shop's EAN codes* (by product category), and the share of private labels *in the national sales of each product category*. The first of these indicators varies by shop and product category, whereas the second varies only by product category (and Member State).

Evidence was found of small positive impacts of private labels on most measures of choice except product price variety where the impact depended on the choice of measure of private labels.

For product variety, when the indicator used was the share of private label EAN codes in each local shop's EAN codes (by product category), a statistically significant positive impact was found in the long¹³³ and short¹³⁴ sample data sets, but its value was small. No statistically significant impact of the national share of private labels was found (in Fixed Effects estimation) on product variety¹³⁵. For product size variety, small positive statistically significant effects of local private label share were found in the long data set¹³⁶, but no statistically significant effects were found in the short data set¹³⁷; the impact of national private label share was insignificant in Fixed Effects¹³⁸ (a negative, statistically significant impact was found in Random Effects¹³⁹). For product supplier variety, small positive statistically significant effects of local private label share were found in the long and short data sets¹⁴⁰; small positive statistically significant effects were also found for national private label share in the long data set¹⁴¹ but the effects were insignificant in the short data set¹⁴². For product price variety, small negative statistically significant effects of local private label share were found in the long and short data sets¹⁴³; small positive statistically significant effects were found for national

¹³³ Equations [1]-[2], [5]-[18].

¹³⁴ Equations [19]-[20], [23]-[36].

¹³⁵ Equations [4], [22].

¹³⁶ Equations [37]-[38], [41]-[54].

¹³⁷ Equations [55]-[56], [59]-[72].

¹³⁸ Equations [40], [58].

¹³⁹ Equations [39], [57].

¹⁴⁰ Equations [[73]-[74], [77]-[92], [95]-[108].

¹⁴¹ Equations [75]-[76].

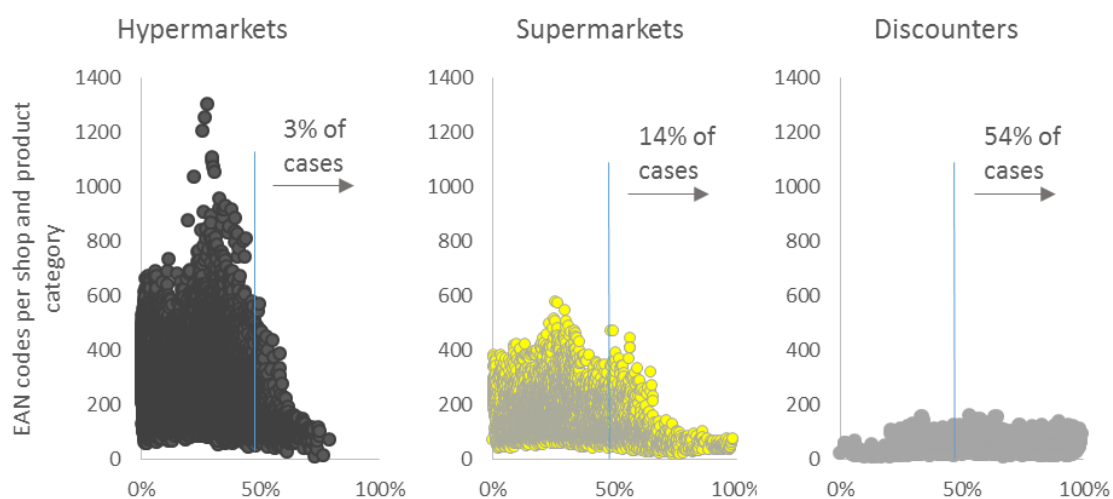
¹⁴² Equations [93]-[94].

¹⁴³ Equations [[109]-[110], [113]-[128], [131]-[144].

private label share in the long data set¹⁴⁴ but the effects were mixed/insignificant in the short data set¹⁴⁵.

Figure 153 compares product variety and the share of private labels in the long data set, distinguishing the three shop types. Each point in the chart is the number of EAN codes for a given product category and shop. The vast majority of observations (97% for hypermarkets and 86% for supermarkets) are located in the region where the share of private label EAN codes in the total number of EAN codes (for a given product category) is 50% or less, and in that region there is no clear relationship between product variety and the private label share in this simple comparison. But for the small number of cases among hypermarkets and supermarkets where the share is high, there is a clear indication that choice is much reduced. Among discounters (where just over half of the observations had greater than a 50% private label share), there is no evidence that the (relatively low) level of choice is reduced as the share of private labels increases. When the data are examined at the level of separate product categories, the point after which an increase in share is associated with less choice varies, depending on the product category.

Figure 153: Choice and the private label share by shop type



An analysis that shows the results for each product category is presented in Annex 11.6.3.

Innovation

Statistical significance: 1% level for a few cases
 Direction of impact: No consistent direction found
 Economic importance: Small

The results for innovation were mixed, depending on the measure and time period chosen and no clear impact was found.

¹⁴⁴ Equations [111]-[112].

¹⁴⁵ Equations [129]-[130].

For Opus innovations, small positive statistically significant effects of local private labels share were found in the long data set¹⁴⁶, but these became insignificant (in Fixed Effects) in the short data set¹⁴⁷. The national private labels share was (in Fixed Effects) strongly positive and significant in the long data set¹⁴⁸ but strongly negative and significant in the short data set¹⁴⁹. For new products and new packaging, local private labels share was not significant in Fixed Effects in the long data set¹⁵⁰; for new products the impact in the short data set¹⁵¹ was generally small, positive and borderline statistically significant, while for new packaging the impact was not generally statistically significant in the short data set¹⁵². The impact of national private labels share was mostly not significant for these two indicators¹⁵³, the exception being new packaging in the short data set¹⁵⁴ where it was borderline significant and negative. For new formulations, the impact of local private labels share was generally negative but not significant in Fixed Effects in the long and short data sets¹⁵⁵; the impact of national private label share was negative but not significant in Fixed Effects in both long and short data sets¹⁵⁶. For new range extensions the impact of local private labels share was small, negative and statistically significant in Fixed Effects in the long data set¹⁵⁷ but generally not significant in the short data set¹⁵⁸.

Figure 154 shows a similar finding for innovation as for choice: in hypermarkets and supermarkets, in the minority of cases (a particular product category in a particular shop) where the private label share is high, there is a fall-off in the number of innovations. Again, when the data are examined at the level of separate product categories, the point after which an increase in share is associated with less innovation varies, depending on the product category.

¹⁴⁶ Equations [145]-[146], [149]-[164].

¹⁴⁷ Equations [166], [170], [172], [174], [176], [178], [180], [182].

¹⁴⁸ Equation [148].

¹⁴⁹ Equation [168].

¹⁵⁰ Equations [186], [190], [192], [194], [196], [198], [200], [202], [204]; 226, [230], [232], [234], [236], [238], [240], [242], [244].

¹⁵¹ Equations [205]-[206], [209]-[224];

¹⁵² Equations [246], [250], [252], [254], [256], [258], [260], [262], [264].

¹⁵³ Equations [188], [208], [228].

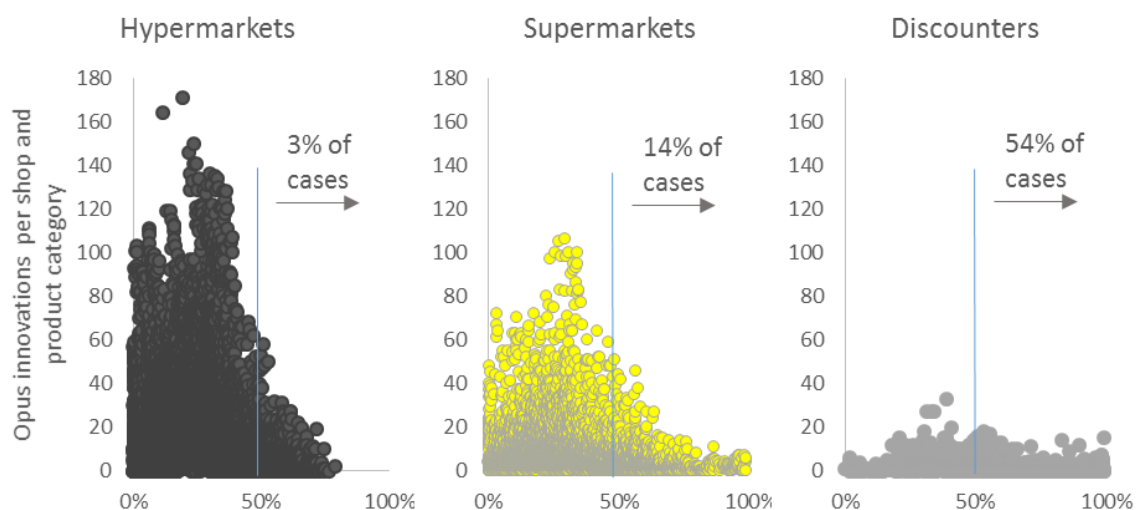
¹⁵⁴ Equation [248].

¹⁵⁵ Equations [266], [270], [272], [274], [276], [278], [280], [282], [284], [286], [290], [292], [294], [296], [298], [300], [302], [304].

¹⁵⁶ Equations [308], [328].

¹⁵⁷ Equations [306], [310], [312], [314], [316], [3318], [320], [322], [324].

¹⁵⁸ Equations [325]-[326], [329]-[344].

Figure 154: Innovation and the private label share by shop type

9.7. Product category turnover

Choice

Statistical significance: 1% level

Direction of impact: Positive (except for product price variety where it was negative)

Economic importance: Large (except for product price variety)

The national level of turnover (sales) in each product category is a statistically significant and economically important driver of choice. Positive impacts were found for all measures of choice¹⁵⁹ except product price variety¹⁶⁰ where it was generally negative but small. Product categories with high sales turnover are also those where there is a greater commercial potential, and therefore where suppliers focus on product development, ultimately accounting for a wide variety of products on offer.

Most of the variation in this driver is between product categories; changes over time are modest by comparison. The positive relationship between turnover and choice therefore reflects the fact that products with a larger turnover tend to have a larger number of EAN codes¹⁶¹.

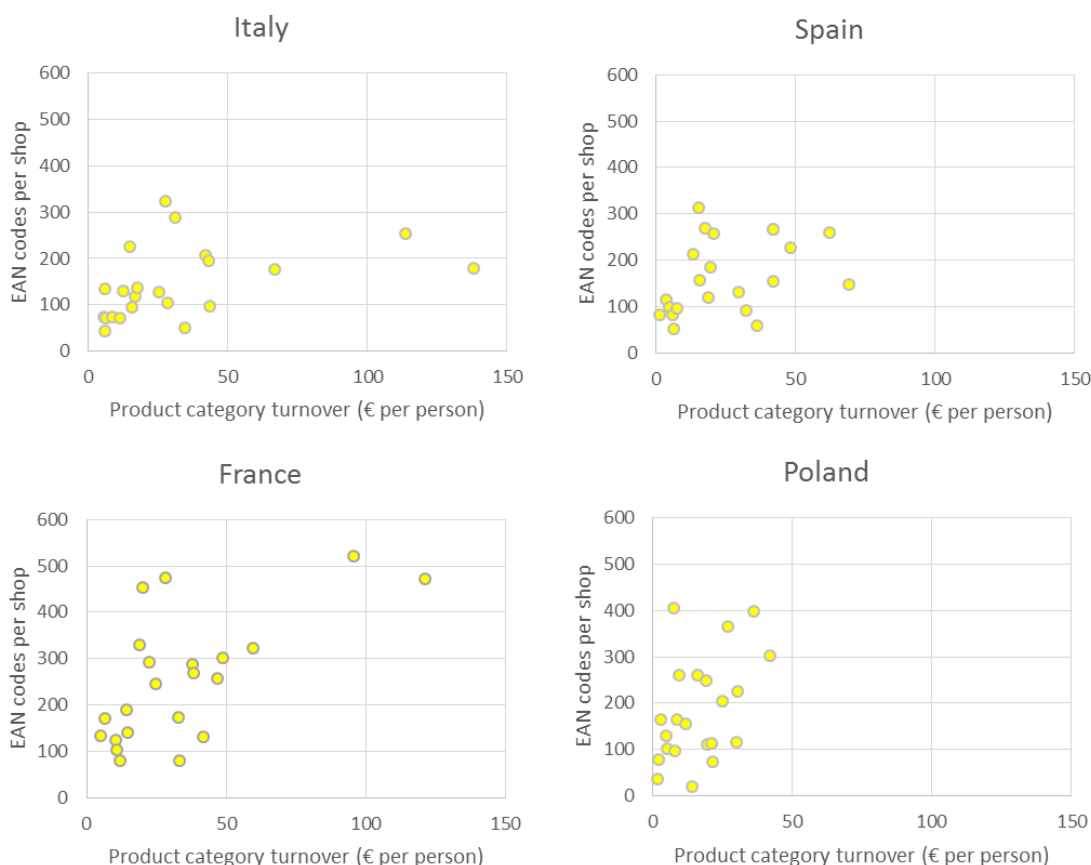
¹⁵⁹ Equations [1]-[108].

¹⁶⁰ Equations [109]-[144].

¹⁶¹ The econometric specifications include a 'product-specific' intercept to control for differences in the level of choice or innovation associated with each product 'on average' across Member States and time. Product-specific and Member-State-specific drivers, such as product category turnover, account for differences apart from these 'average' effects.

Figure 155 shows this relationship for one period ¹⁶² of the data in a selection of the Member States in the data set. Each point in the charts represents a single product category: the horizontal axis shows the national turnover expressed as € per inhabitant, while the vertical axis shows the average number of EAN codes in the product category per shop in the data set in that Member State.

Figure 155: Choice in variety of EANs versus national product category sales turnover in 2010 period 1 in four Member States (source: analysis based on © Nielsen Opus and © Euromonitor International)



Innovation

Statistical significance: 1% level
 Direction of impact: Generally positive
 Economic importance: Mostly large

The national level of turnover (sales) in each product category is generally a statistically significant and economically important driver of innovation, and the reasoning set out above with respect to choice also applies here for innovation. However, there was more variation across measures of innovation and across the two data sets than was the case

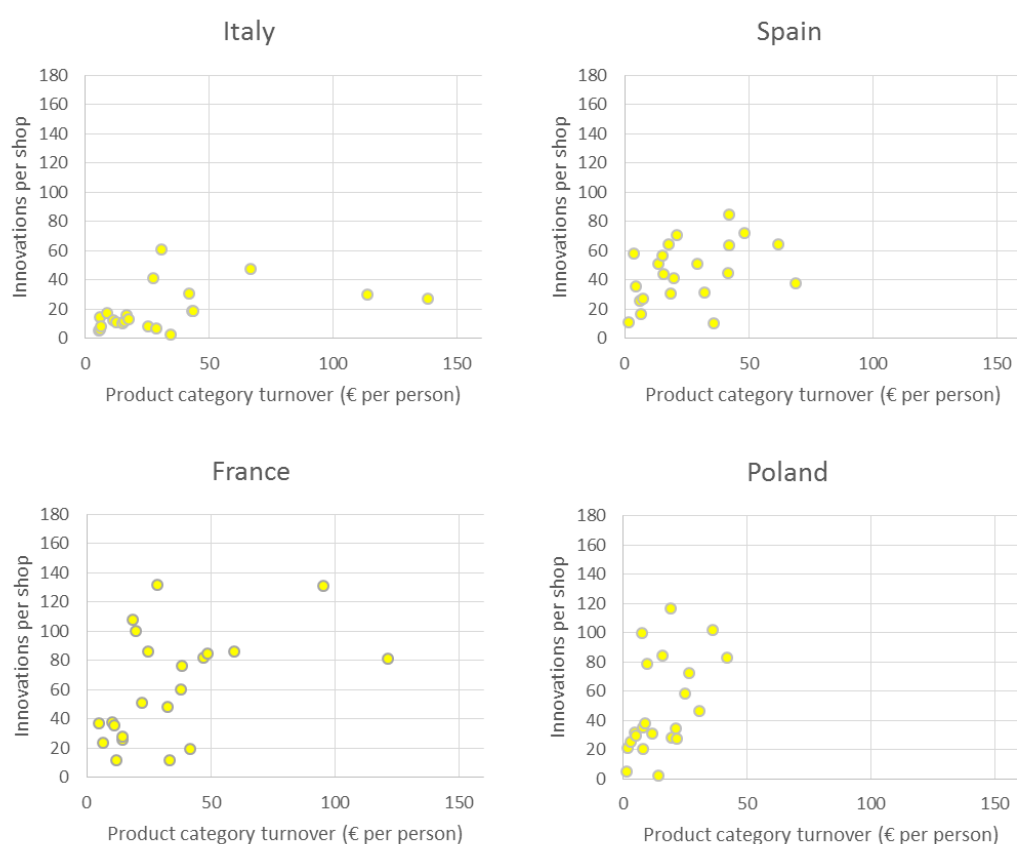
¹⁶² The period chosen is arbitrary: the aim is to show the pattern across product categories for a given period.

for choice. For Opus innovations, the impact was either negative or not statistically significant (in Fixed Effects)¹⁶³. Clear positive impacts were mostly found for new packaging¹⁶⁴ and for new range extensions¹⁶⁵, but the impacts varied between the long and short data sets for new products¹⁶⁶ and new formulations¹⁶⁷

Product categories with high sales turnover may be those where suppliers are likely to develop innovations. The relationship may be negative in the short period due to the effect of the crisis, whereby suppliers may invest less in research and development despite product categories continuing to grow in size.

Figure 156 shows the relation between turnover and innovation for one period. The same positive relationship that was seen for choice is observable, although it is less pronounced.

Figure 156: New EAN codes (innovations) versus national product category sales turnover in 2010 period 1 in four Member States (source: analysis based on © Nielsen Opus and © Euromonitor International)



¹⁶³ Equations [146], [148], [150], [152], [154], [156], [158], [160], [162], [164], [166], [168], [170], [172], [174], [176], [178], [180], [182], [184].

¹⁶⁴ Equations [225]-[264].

¹⁶⁵ Equations [305]-[344].

¹⁶⁶ Equations [185]-[224].

¹⁶⁷ Equations [265]-[304].

9.8. General economic drivers: unemployment

Choice

| | |
|---------------------------|--|
| Statistical significance: | Various |
| Direction of impact: | Positive; negative for product price variety |
| Economic importance: | Small |

A positive, significant impact was found of the rate of unemployment on most choice indicators¹⁶⁸ except for product price variety, but its scale was small and only sometimes statistically significant at the 1% level. In the case of product price variety¹⁶⁹ the impact was negative (in both the long and short data sets).

Innovation

| | |
|---------------------------|-----------------------------|
| Statistical significance: | 1% level (in long data set) |
| Direction of impact: | Negative (in long data set) |
| Economic importance: | Large |

There was evidence of a statistically significant and reasonably large negative impact on Opus innovations¹⁷⁰ in the long data and (for the Fixed Effects estimator) short data sets. Similar results were found for new products¹⁷¹ and new range extensions¹⁷². For new packaging the results were large, positive and statistically significant in the long data set¹⁷³ but generally not significant in the short data set¹⁷⁴. For new formulations the results were generally not significant in the long data set¹⁷⁵ and large, negative and statistically significant in the short data set¹⁷⁶. A higher unemployment rate is generally associated with a decrease in innovation, due to the underlying macro-economic situation. Suppliers may be less likely to develop innovations during difficult economic times, and retailers may also be more hesitant in offering new innovative products.

Figure 157 shows data for the first period in each of the years for which data is available for the innovation indicator in the long data set. Each point in the graph represents the average number of innovations for all shops in a location with the same unemployment rate (either because they are located in the same NUTS 3 region – the level at which the unemployment rate is recorded – or because the unemployment rate happens to

¹⁶⁸ Equations [1]-[108]

¹⁶⁹ Equations [[109]-[144].

¹⁷⁰ Equations [145]-[184].

¹⁷¹ Equations [185]-[224].

¹⁷² Equations [305]-[344].

¹⁷³ Equations [225]-[244].

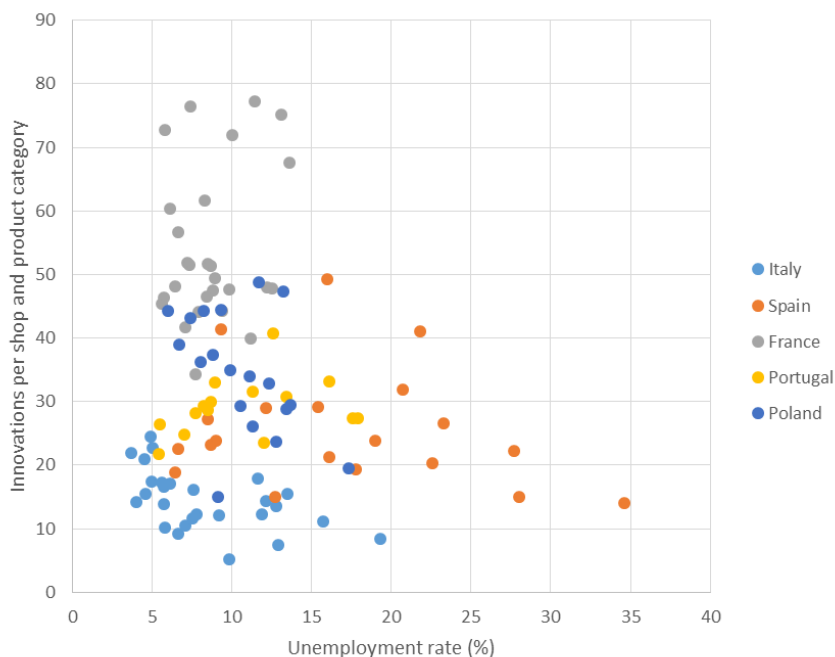
¹⁷⁴ Equations [245]-[264].

¹⁷⁵ Equations [265]-[284].

¹⁷⁶ Equations [285]-[304].

coincide with the level in another region). A broadly negative relationship can be observed when the comparison is made across Member States, as in the chart, and also for some individual Member States.

Figure 157: New EAN codes (innovations) versus unemployment rate (source: analysis based on © Nielsen Opus and Eurostat. Innovation data are for first period in each year 2004, 2006, 2008, 2010, 2012)



The final specification for explaining innovation therefore uses national retail business expectations together with average GDP per capita over the time periods in the data set (as a measure of the difference in the level of prosperity between regions); in the Fixed Effects estimator, all indicators that are constant over time are dropped and so average GDP per capita does not feature in that specification.

Choice: GDP per capita

Statistical significance: 1-5% level

Direction of impact: Positive

Economic importance: Large

Evidence was found of a statistically significant and reasonably large positive (as expected) impact of GDP per capita on most choice indicators (all except product price variety)¹⁷⁷ in the long and short data sets, although the size of the impact was generally smaller in the short data set. In the case of product price variety, the impact is mostly positive, though with varying degrees of statistical significance, in the long data set¹⁷⁸, and negative in the short data set¹⁷⁹.

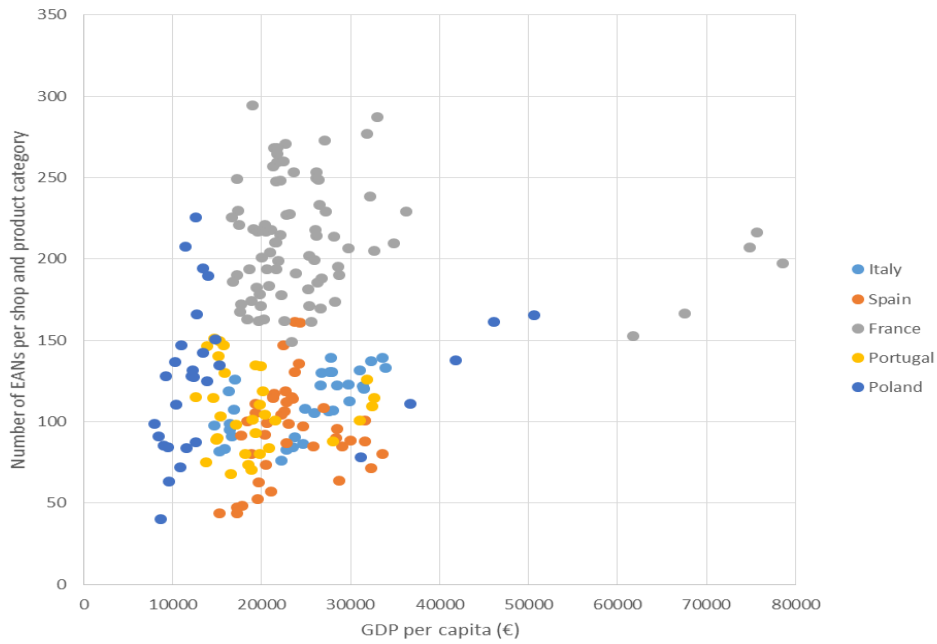
The relationship is shown in Figure 158. More prosperous areas with higher GDP per capita may tend to encourage retailers to extend product choice in order to increase the average shopping basket of their customers.

¹⁷⁷ Equations [1]-[108].

¹⁷⁸ Equations [109]-[126].

¹⁷⁹ Equations [127]-[144].

Figure 158: Choice in variety of EAN codes versus GDP per capita (source: analysis based on © Nielsen Opus and Eurostat. Choice data are for first period in each year 2004, 2006, 2008, 2010, 2012)



Note: GDP per capita uses the Purchasing Power Standard measure.

Innovation: Retailer business expectations

Statistical significance: 1% level

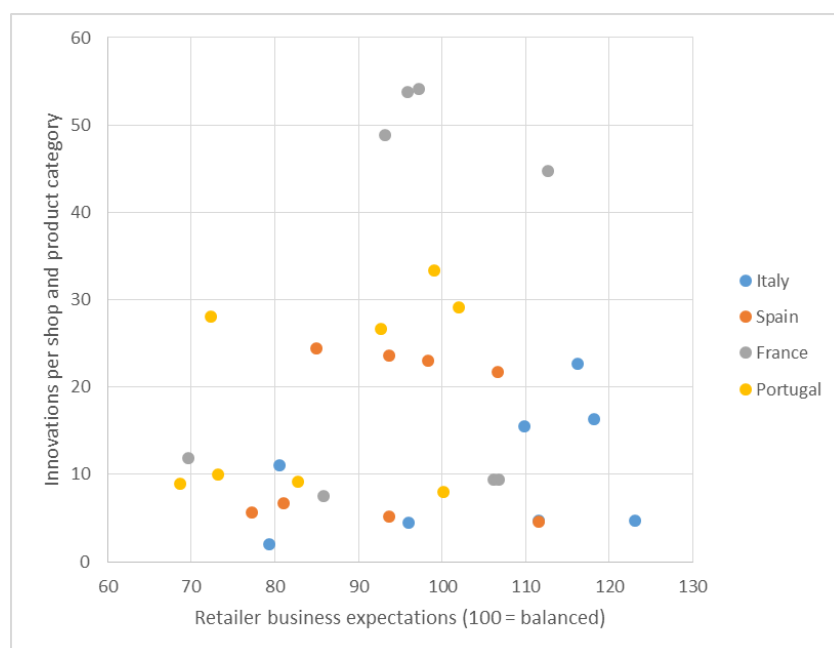
Direction of impact: Positive

Economic importance: Large

A large positive, statistically significant impact was found for retailer business expectations on Opus innovations in the long and short data sets¹⁸⁰, for new packaging (in Fixed Effects in the long data set¹⁸¹ and both methods in the short data set¹⁸²), and for new range extensions¹⁸³. For new products the impact was generally negative but not always significant in the long data set¹⁸⁴, and positive but not significant (in Fixed Effects) in the short data set¹⁸⁵ and for some of the other innovation indicators (not for new products, and not always in both data sets for the other indicators). Positive retail business expectations are associated with a favourable macro-economic environment, therefore encouraging suppliers to develop innovations, and retailers to stock them.

Figure 159 shows Opus innovations and retailer business expectations for the four Member States for which innovation data are available from 2006, but in this simple comparison no clear pattern is evident.

Figure 159: Opus innovations versus retailer business expectations (source: analysis based on © Nielsen Opus and Eurostat), 2006, 2008, 2010, 2012



¹⁸⁰ Equations [145]-[182].

¹⁸¹ Equations [226], [228], [230], [232], [234], [236], [238], [240], [242],

¹⁸² Equations [245]-[262].

¹⁸³ Equations [305]-[322] and [325]-[342].

¹⁸⁴ Equations [185]-[202].

¹⁸⁵ Equations [206], [208], [210], [212], [214], [216], [218], [220], [222].

9.10. General economic drivers: population and population density

In Fixed Effects estimation, where indicators are transformed to represent changes from the average value over time, the change in population is the same as the change in population density (because area does not change) and so the method cannot identify the separate contribution of the drivers. Because the variation in these drivers is far greater across space than time, it was therefore decided to represent them as average values over time. In the Fixed Effects estimator, all indicators that are constant over time are dropped and so average population and average population density do not feature in that specification; the results reported here are therefore only for the Random Effects estimator.

Choice

Statistical significance: 1% level (for population density)

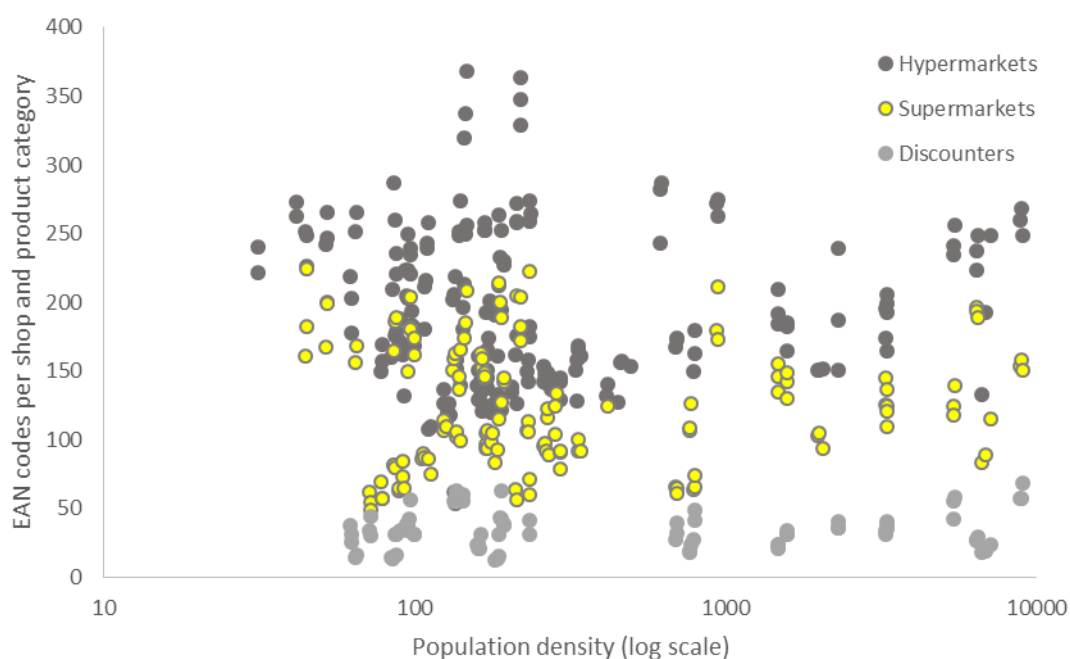
Direction of impact: Negative

Economic importance: Moderate

Moderate negative impacts of average population density on several measures of choice were found for the Random Effects estimator, but it should be remembered that positive impacts were found for GDP per capita, and areas with a high population density (cities) tend also to be areas with high GDP per capita. The impact of average population was generally not statistically significant.

Figure 160 shows the relationship between product variety and population density in the short data set. In this two-dimensional comparison, the trend is not strong but it can be seen that there are more cases with greater product variety in the less densely populated areas.

Figure 160: Choice in variety of EAN codes and population density, 2008-12



Innovation

Statistical significance: 1% (for population density for new packaging and new formulations)

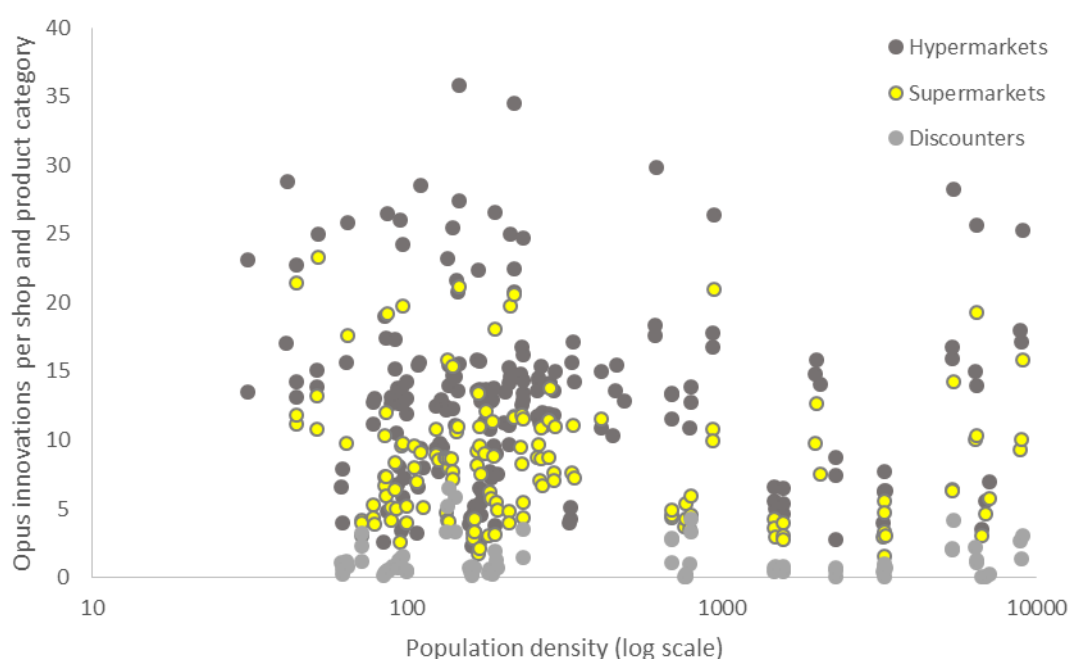
Direction of impact: Negative (in those cases)

Economic importance: Large (in those cases)

Large, statistically significant negative effects on two indicators of innovation (new packaging and new formulations) were found for average population density using the Random Effects estimator. The impact of average population was generally not statistically significant.

Figure 161 shows the relationship between Opus innovations and population density in the short data set. Again, in this two-dimensional comparison, the trend is not strong but it can be seen that there are more cases with a greater number of innovations in the less densely populated areas.

Figure 161: Opus innovations and population density, 2008-12



9.11. Shop characteristics: size, format and the opening of a new shop in the same local area

Choice: Floorspace

Statistical significance: 1% level

Direction of impact: Positive

Economic importance: Large

Differences in shop floorspace (for a given format) across *space* (which is what the Random Effects estimator tends to capture in a data set in which most of the variation is over space rather than time) were found to have clear positive statistically significant impacts on product variety, product size variety and product supplier variety: larger shops (for a given format) provide more choice on these indicators. For product price

variety the Random Effects estimator impacts were generally not statistically significant at lower levels¹⁸⁶. Differences in changes in floorspace across time (which is what the Fixed Effects estimator captures) were typically smaller in the short data set, but these estimates depend on the experience only of those shops that change their floorspace over time (without changing their format).

Choice: Format
Statistical significance: 1% level
Direction of impact: Positive (larger formats offer more choice)
Economic importance: Large

Fixed effects dummies were included for supermarkets (relative to hypermarkets) and for hard discounters (relative to supermarkets). For product variety, product size variety and product supplier variety, the expected ranking was found: hypermarkets provide more choice than supermarkets, and supermarkets provide more choice than discounters. Findings were somewhat more mixed for product price variety.

Choice: New shop opening
Statistical significance: 1% level
Direction of impact: Positive
Economic importance: Small or moderate

Shops that experienced the opening of a new shop in their local area tended themselves to offer somewhat more choice (on all measures) in the long data set: in the short data set results were often not statistically significant.

Innovation: Floorspace
Statistical significance: 1% level
Direction of impact: Positive
Economic importance: Large

As for choice, differences in shop floorspace (for a given format) across *space* (reflected in the Random Effects estimator) were found to have clear positive statistically significant impacts on all measures of innovation: larger shops (for a given format) provide a greater number of innovative products. Differences in changes in floorspace across time (reflected in the Fixed Effects estimator) were sometimes smaller than across space, but this was not the case for new packaging or new formulations.

Innovation: Format
Statistical significance: 1% level

¹⁸⁶ Equations [109], [111], [113], [115], [117], [119], [121], [123], [125], [127], [129], [131], [133], [135], [137], [139], [141], [143].

Direction of impact: Positive (larger formats offer a greater number of innovative products)
Economic importance: Large

For all measures of innovation, the expected ranking was generally found: hypermarkets provide a greater number of innovative products than supermarkets, and supermarkets provide a greater number than discounters. The size of the impacts for discounters was generally larger for the innovation measures than for choice, suggesting that the difference between what hypermarkets offer and what discounters offer is more pronounced when the focus is on innovative products than when it is on all products. Earlier figures in this chapter in which the different shop types have been distinguished have shown the marked differences in the scale of offering between the three types.

Innovation: New shop opening
Statistical significance: Mostly no
Direction of impact: Positive (in random effects for new products)
Economic importance: Mostly low, except for random effects for new products

The positive impact of the opening of a new shop in the local area on the offer of innovative products in a given shop (Random Effects estimator, since variation in this driver is greater across space than across time) was large for new products in the long data set¹⁸⁷, and for new formulations and new range extensions in the short data set¹⁸⁸. It was not generally significant for other measures of innovation. To face a new competitor, established retailers will seek to retain customer loyalty by including new and innovative products to either match competitors or better satisfy existing customers, but there was less evidence for this than for the strategy of providing more choice.

10. Accounting for changes over time in selected shops

The econometric equations that are estimated over the whole data set seek to account for the variation in choice and innovation by attributing impacts to the various drivers. Because the data set varies over the dimensions of shops, product categories and time, variation over all of these dimensions influences the econometric results. Here the extent to which the equations can account for observed changes in particular places over time, aggregating across product categories, have been examined. Since the most important drivers that change over time that were identified in the econometric analysis are not specific to shops but apply at national or regional level, the equations do not have strong shop-specific drivers that can discriminate between the performance of particular shops over time, but the presence of region-specific and national drivers can produce different outcomes for shops located in different areas and Member States.

¹⁸⁷ Equations [185], [187], [189], [191], [193], [195], [197], [199], [201], [203].

¹⁸⁸ Equations [285], [287], [289], [291], [293], [295], [297], [299], [301], [303], [325], [327], [329], [331], [333], [335], [337], [339], [341], [343].

One can use an estimated equation to calculate the contribution to the change in product variety or innovation over time by entering the observed values of the drivers relevant to any given shop. The sum of these contributions represent the change that is explained by the equation: the difference between this value and the observed change in product variety or innovation is the unexplained residual. In order to carry out this analysis one has to pick just one of the estimated equations and if the impact of a given driver varies greatly between the alternative equations then its estimated contribution will also vary. Here results are presented using a random effects equation estimated over the long data set, measuring the influence of private labels by using the share of private label EANs in all EANs stocked by each shop and using national retail concentration and national supplier concentration to represent the concentration drivers.

10.1. Examples of the impacts of the drivers in five shops

The following analysis depicted in

Figure 162 to Figure 166 presents examples of shops where the change in choice or innovation over time predicted by the estimated equation was close to the actual change in order to illustrate the impacts of the drivers. An example shop is selected from each of the five member states in the long period data set, where the drivers explained a large proportion of the change in both choice and innovation over the period 2006 (because the Opus innovations indicator is first calculated for that year) to 2012. For the purposes of this illustration, examples of hypermarkets and supermarkets have been chosen.

In the case of Italy, the increase in national retail concentration and national retail sales can explain most of the growth in choice. Meanwhile, the fall in innovation was driven by worsening economic conditions of the recession as most of the change was accounted for by rising unemployment and falling retail business expectations.

In the case of France, the example hypermarket showed strong growth in choice and innovation that was predominantly driven by the expansion of the floor space in the shop over the period and growth in national retail sales over the period. As with Italy, innovation growth was dampened by the recession, offsetting almost all of the predicted growth from the expansion of the shop.

In the case of Spain, the example supermarket faced the entry of a new competitor shop over the period and this provided a modest contribution to the growth in product variety in the supermarket, along with increases in national retail concentration and national retail sales. Meanwhile, much of the fall in innovation was explained by the large rise in unemployment in the area.

In the case of Poland, the example hypermarket showed strong growth in choice and innovation over the period driven by increasing national retail concentration and national retail sales. Growth was particularly strong for the Polish hypermarket compared to the shops in other member states, due to a steady rise in GDP per capita along with stable unemployment and retail business expectations over the period. Innovation was strongly driven by the entry of a new competitor shop into the area along with the steady rise of national retail concentration.

In the case of Portugal, the choice equation still over estimates the actual change by some margin as shown by the negative residual. The estimated impacts show a similar trend to Spain with national retail concentration and national retail sales accounting for most of the change over the period. For innovation, the decline over the period is well explained by the equation with unemployment and retail business expectations accounting for most of the change.

In all the five shops shown as examples here, supplier concentration has a negligible impact: this highlights the small coefficients estimated by the equation for both choice and innovation but equally the modest change in supplier concentration over time.

Table 31: Key to the figures showing the contribution of drivers to change in choice and innovation

| Driver code | Description |
|-------------|---|
| P Labels | Local private labels share |
| Ret Conc | National retail concentration HHI (edible grocery) (group) |
| Sup Conc | National supplier concentration HHI (full market) |
| Shop size | Shop floorspace |
| Unemp | Regional unemployment rate |
| GDP pc | Regional GDP per capita |
| Nat Sales | National product category turnover |
| Ret Bus Exp | National retailer business expectations |
| New Shop | New shop opening in the local area |
| Residual | The difference between the observed change in choice/innovation and the sum of the contributions of the drivers |

Figure 162: Contribution of drivers accounting for change in total choice and innovation 2006-12 in a hypermarket in Italy

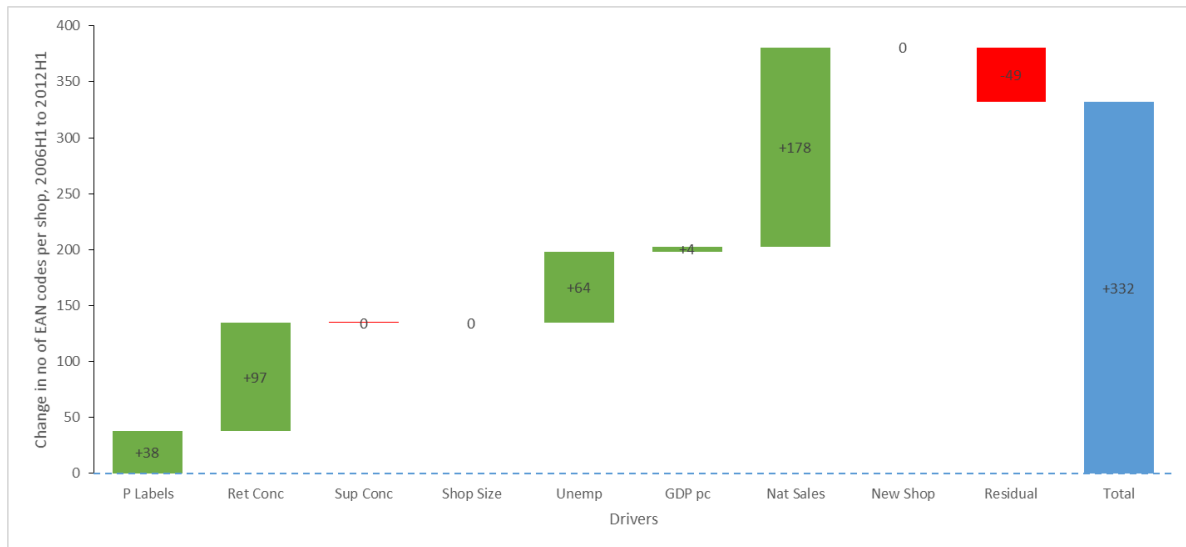


Figure 163: Contribution of drivers accounting for change in total choice and innovation 2006-12 in a hypermarket in France

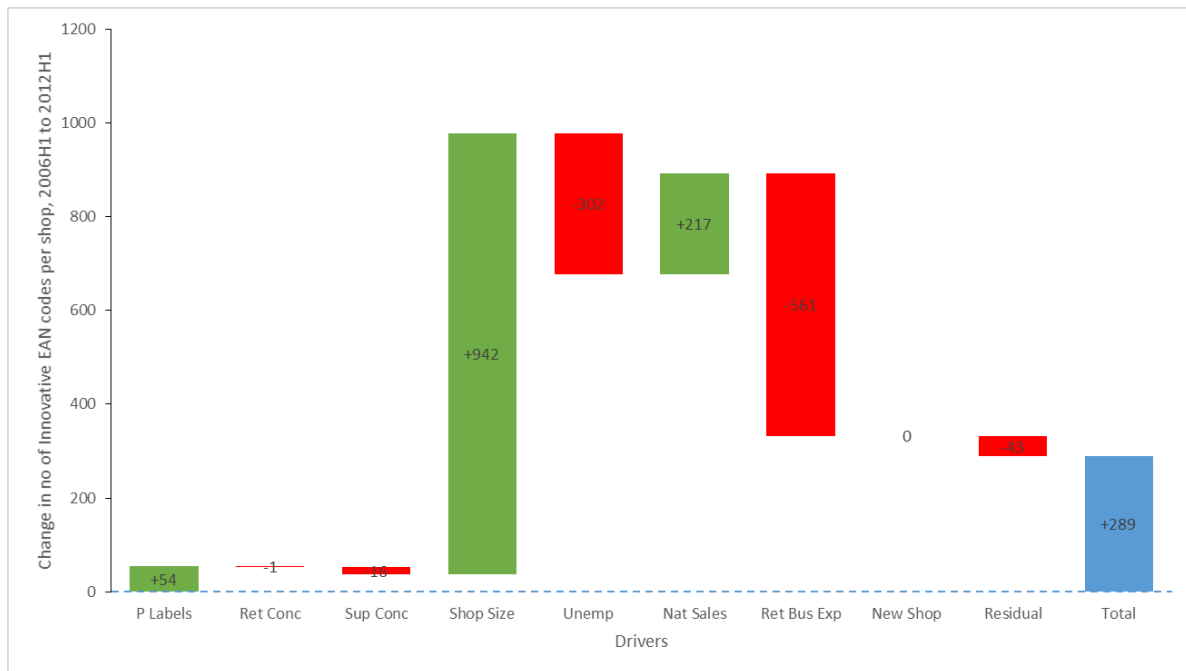


Figure 164: Contribution of drivers accounting for change in total choice and innovation 2006-12 in a supermarket in Spain

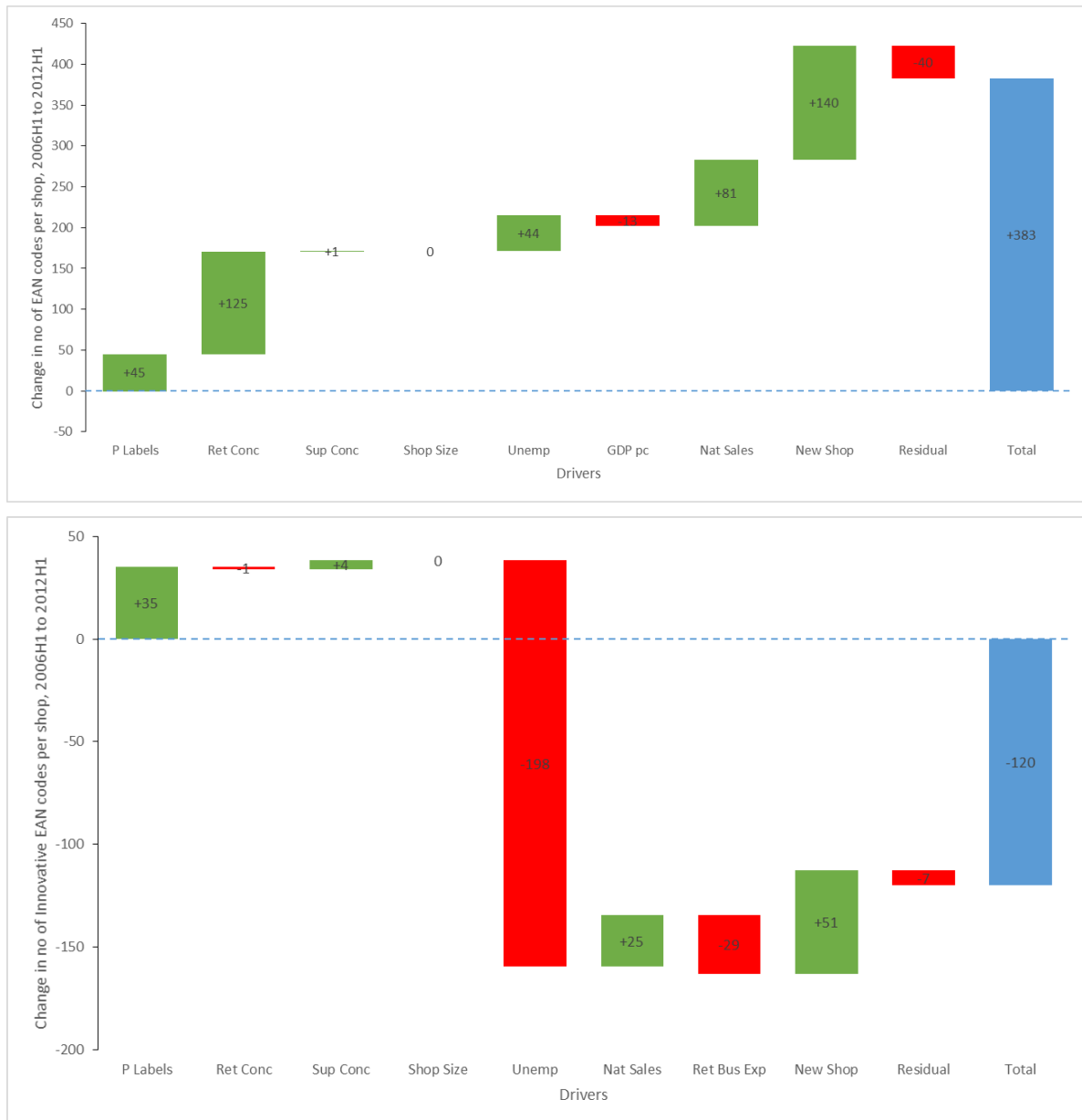


Figure 165: Contribution of drivers accounting for change in total choice and innovation 2006-12 in a hypermarket in Poland

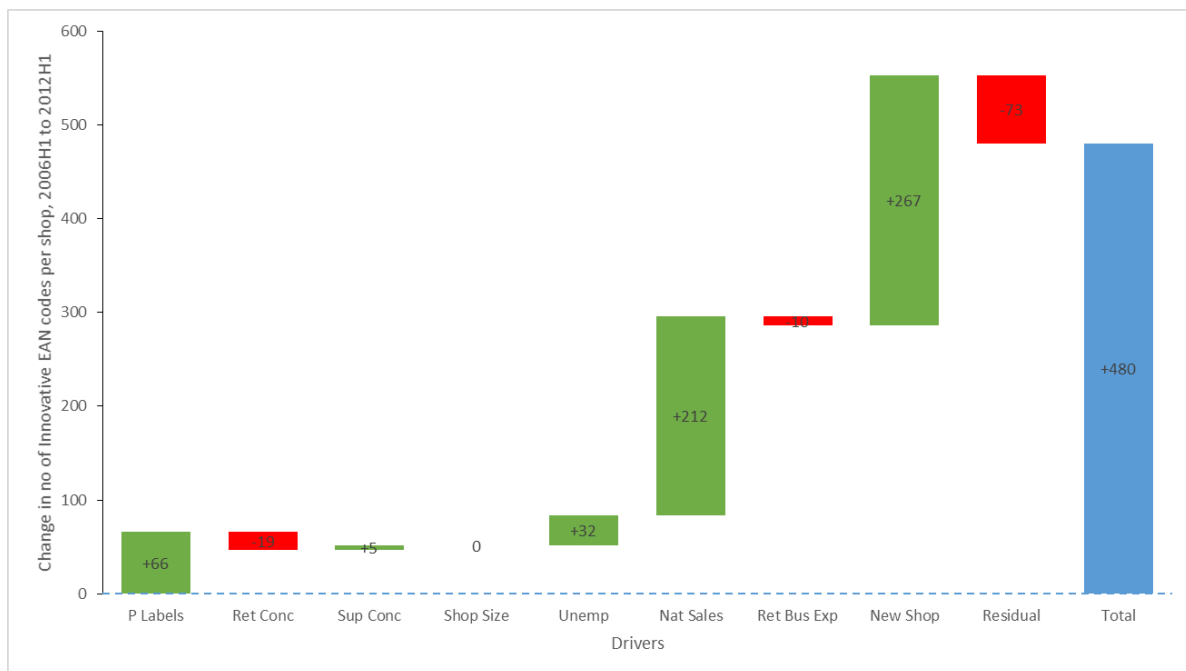
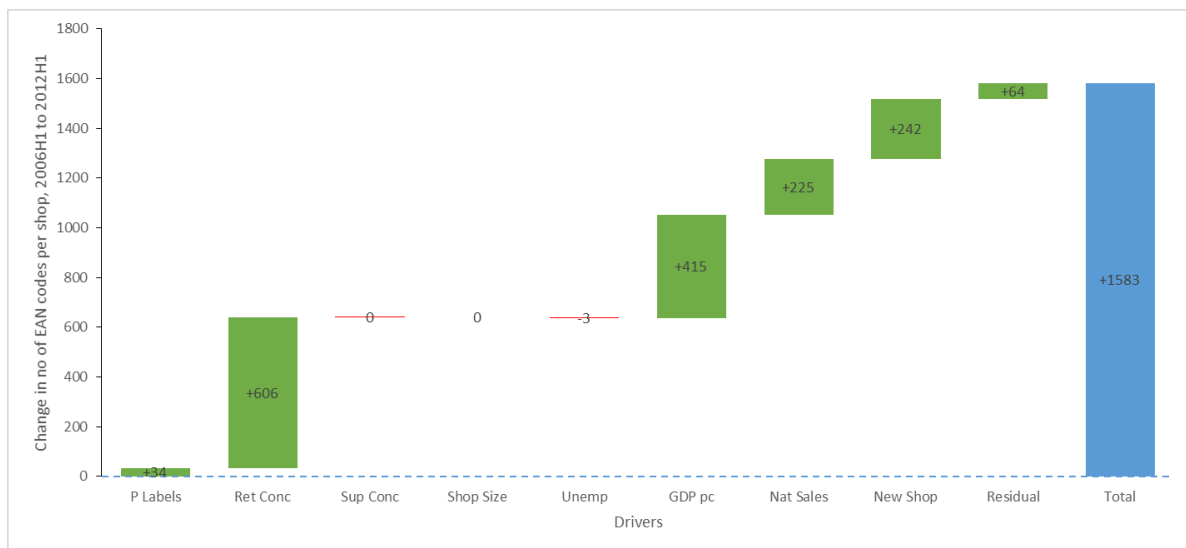
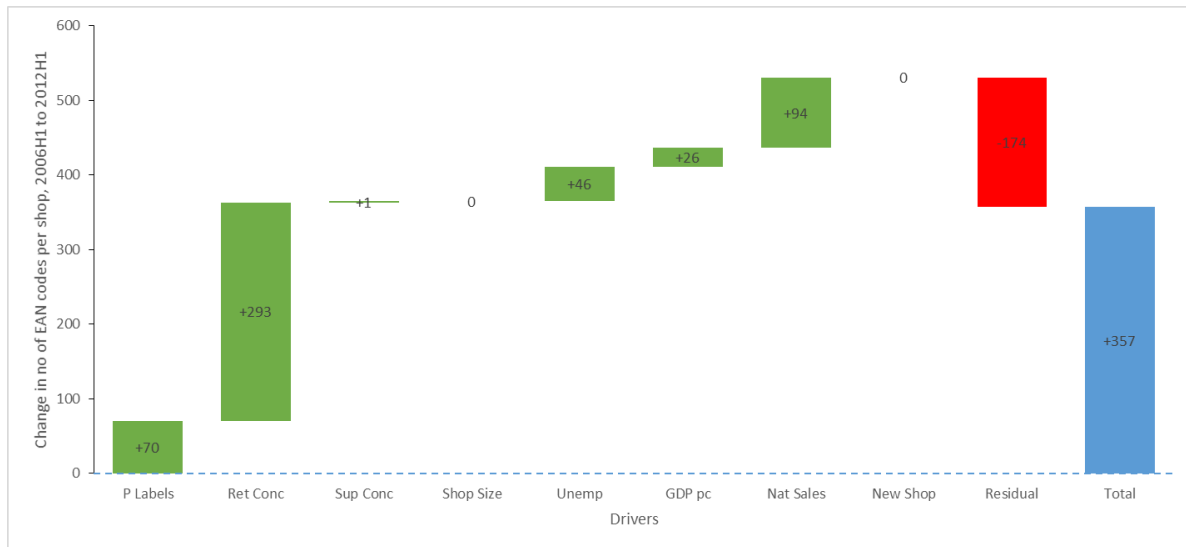


Figure 166: Contribution of drivers accounting for change in total choice and innovation 2006-12 in a supermarket in Portugal

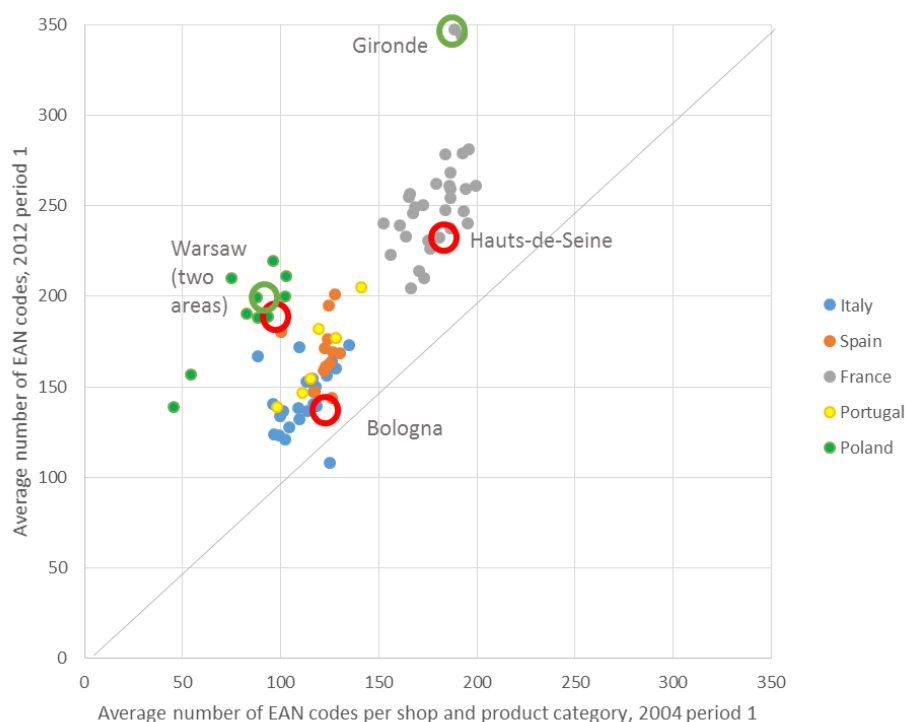


10.2. Examples of the impacts of the drivers in five CSAs

Figure 167 shows the average number of EAN codes per shop and product category in the CSA areas from which hypermarkets¹⁸⁹ in the long data set were sampled. Each point in the figure represents a single CSA area. The horizontal axis shows the average number of EAN codes in 2004 (first period), while the vertical axis shows the number in 2012 (first period).

All but one of the points lie above the 45 degree line that is plotted in the figure, indicating that more choice was available in 2012 than in 2004. The vertical distance above the line indicates the extent to which the 2012 value exceeded the 2004 value. The distribution of CSA areas by Member State reflects the findings at national level shown (for hypermarkets) in Figure 138 above for this indicator of choice. The level in Italy is the lowest and has increased the least; the level in France is the highest and the gap compared with other Member States has remained broadly constant; the level in Poland began low but has increased markedly.

Figure 167: Change in choice (product variety) offered by sample hypermarkets in consumer shopping areas, 2004-2012 (source: analysis based on © Nielsen Opus)



It should be remembered that the number of sample shops in each CSA is not large enough for the averages shown in the figure to be regarded as a reliable estimate of the general level of choice in each CSA. Rather, our purpose is to identify CSAs that include sampled shops where choice has increased markedly, or by relatively little, so as to select shops for further investigation of the reasons for the high or low increase over

¹⁸⁹ The focus here is on hypermarkets to filter out the impact a different representation of shop types in different CSAs.

time. Extreme cases are likely to reflect special factors such as a change in the size of a shop, rather than the impact of one of the other drivers of interest. For this reason, we mainly focus on CSAs where the sample includes more than two hypermarkets.

Five CSAs are circled in Figure 167, and these are the ones that were selected for closer examination. In each of France and Poland there were sufficient hypermarkets in the sample in these CSAs to select a high and low case; in Italy only a low case was selected).

The corresponding data for innovation are shown in Figure 168. Because the number of innovations rose from 2006 and then fell during the recessions, the CSAs represented by the points in the figure lie closer to the 45 degree line. The same five CSAs are circled in the figure.

Figure 168: Change in innovation (total new EAN codes) offered by sample hypermarkets in consumer shopping areas, 2004-2012 (source: analysis based on © Nielsen Opus)

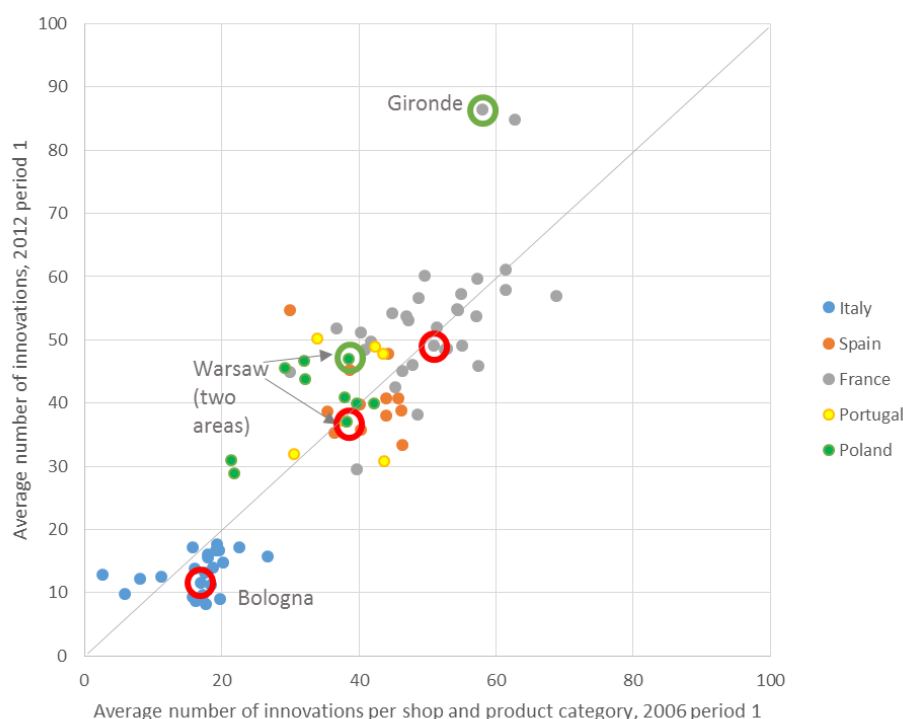


Figure 169 shows the decomposition of the change in product variety for the (average of the) sample shops in the five CSAs, attributing contributions to the various drivers. Since we are looking at the difference between 2012 and 2006, all the control variables that are constant over time (such as Member State fixed effects, or product category fixed effects) drop out of the comparison (they do not change between the two years).

In the case of the two French CSAs, the fact that Gironde had a much larger increase in product variety than Hauts-de-Seine is largely unexplained: the driver with the largest difference between the two CSAs is the 'Residual' driver. More precisely, the outcome in Hauts-de-Seine is largely explained by the contributions of the drivers, but for Gironde there is a large positive residual. In other words, the outturn for the drivers in Gironde compared with those in Hauts-de-Seine was not sufficiently different to account for the difference in outcomes.

In the case of the two Warsaw CSAs, both areas saw fairly similar growth in product variety. As with the two French CSAs, the difference between the outcomes between

Warsaw (High) and Warsaw (low) is unexplained as shown by the large difference in the residual (relative to the collective impact of the other drivers).

In the case of Bologna, the growth in most of the drivers is lower than in the other four CSAs, but there is also a substantial negative residual: the outturn for product variety was even smaller than predicted on the basis of the drivers.

Figure 169: Contribution of drivers accounting for change in product variety 2006-12 in five CSAs

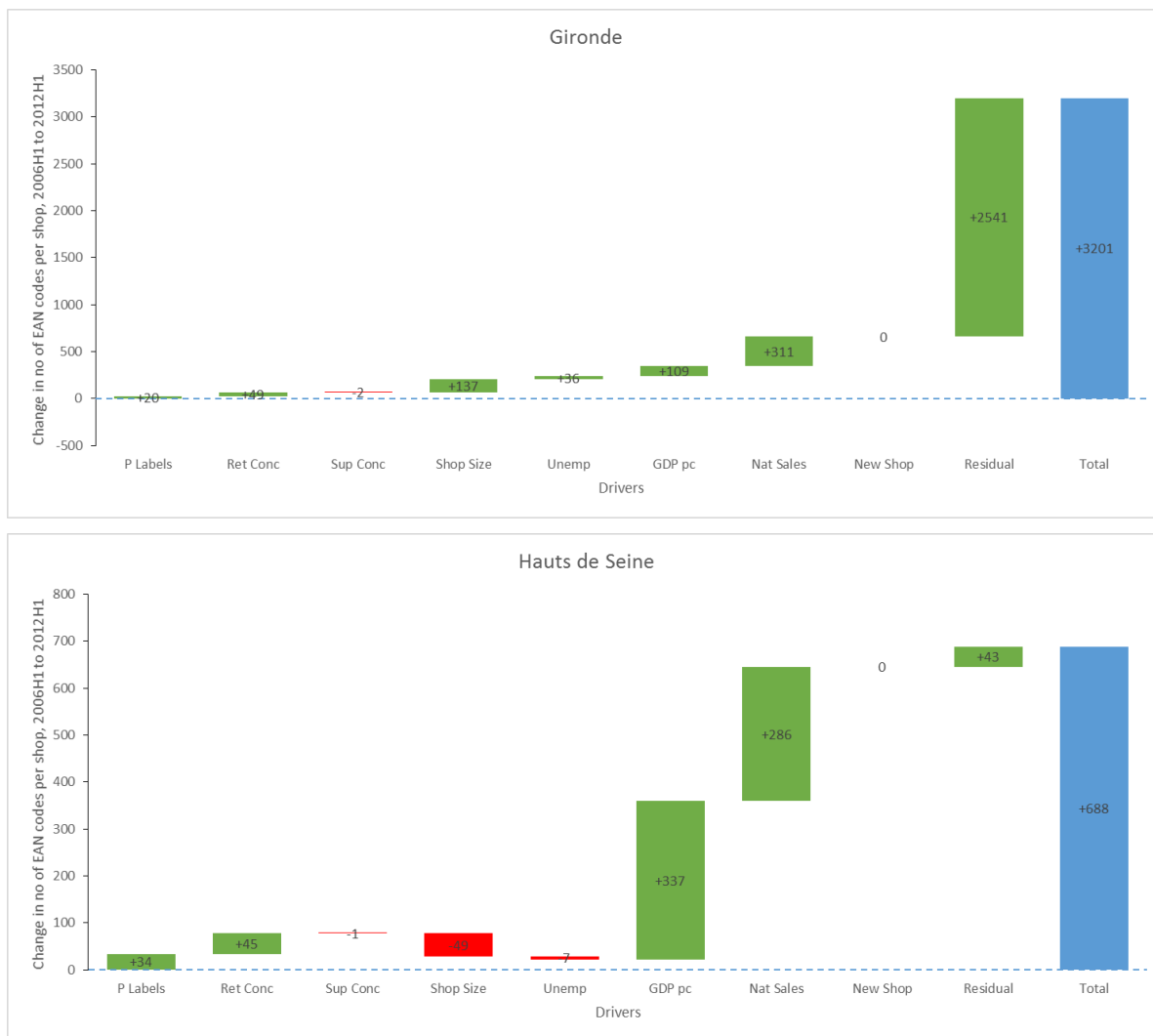




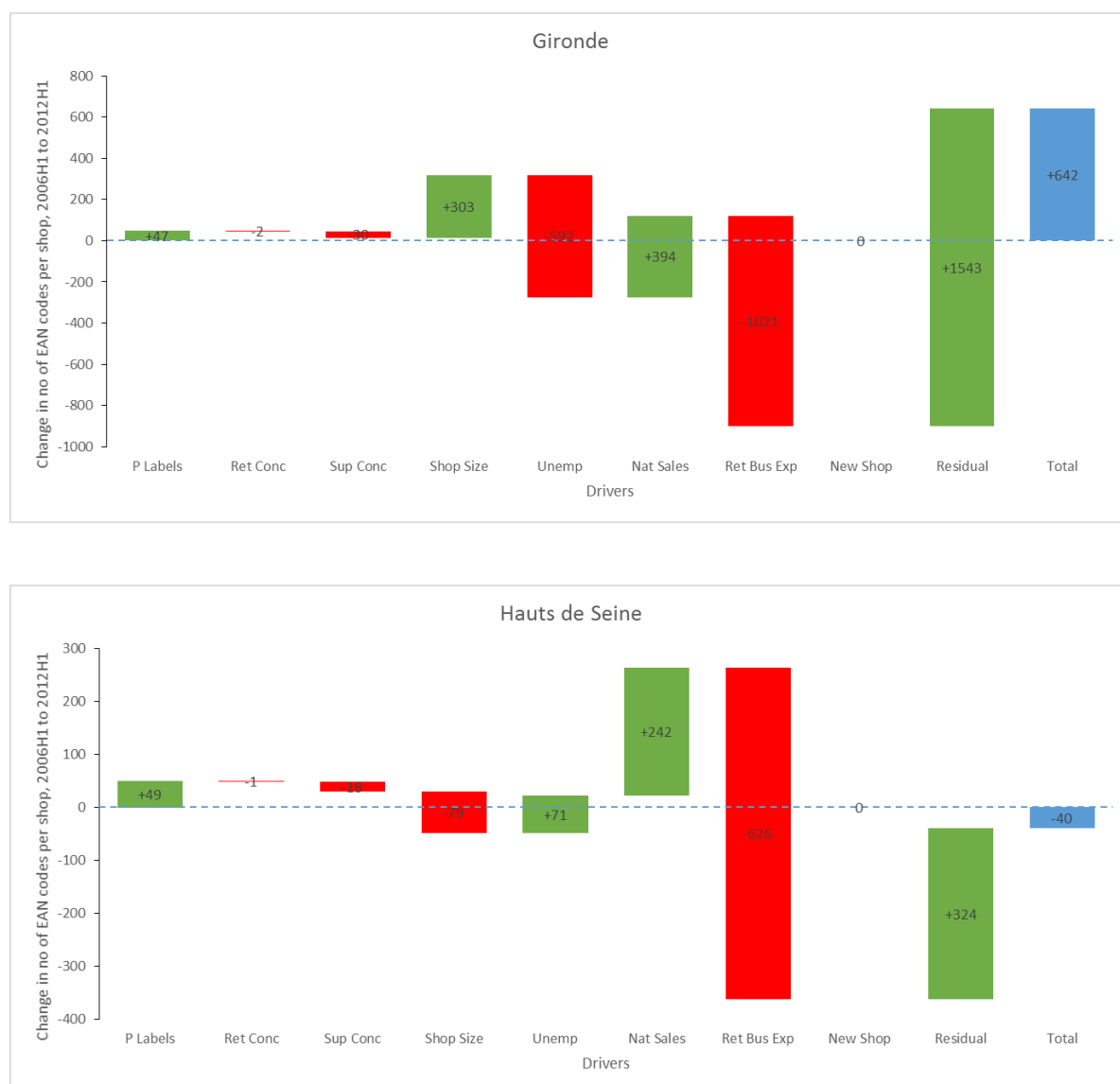
Figure 170 shows the equivalent analysis for the total innovation indicator.

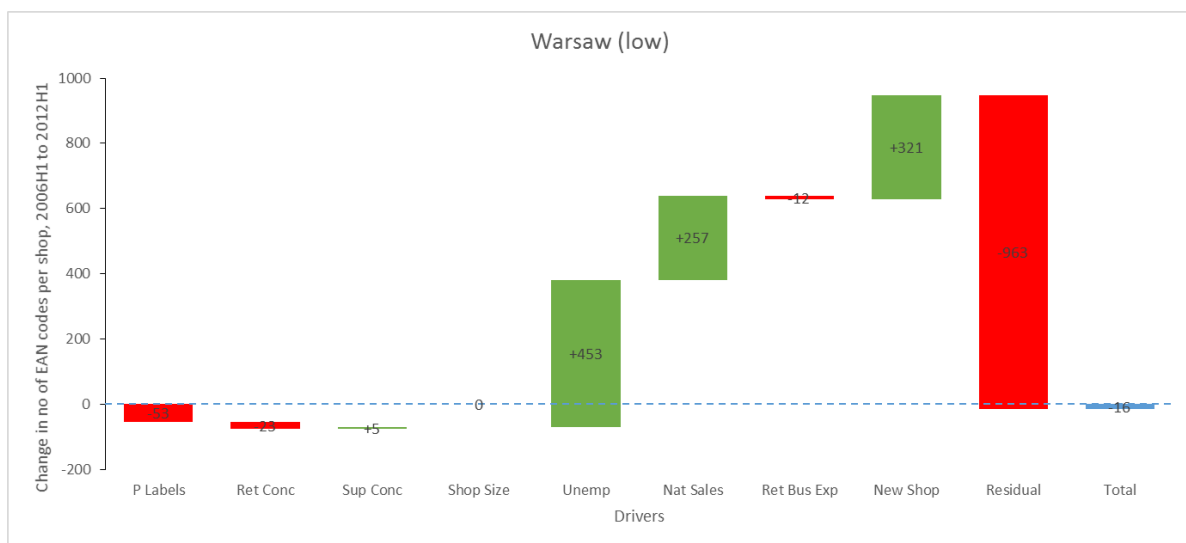
Once again, much of the difference in outturn between Gironde and Hauts-de-Seine lies in the residual factor, but there are also some local differences (the impact of shop expansion in Gironde) and somewhat different impacts from national influences (reflecting different product mixes in the two areas, because some of the national effects are specific to particular products).

One difference between the two Warsaw areas is the contribution that comes from the stronger growth in the share of private labels in one area.

In Bologna the outturn was very close to as the equation predicted on the basis of the drivers: positive drivers made small contributions which were largely countered by the negative impact of the economic crisis.

Figure 170: Contribution of drivers accounting for change in total innovations 2006-12 in five CSAs





11. Annexes

11.1. Annex A: Illustration of © Mintel GNPD launch types

The Global New Products Database (GNPD) relies on Mintel's global network of field associates to identify new and changed FMCG product launches in 50 countries around the world records are assigned a Launch Type (or Innovation type). Some Launch Types are dependent on the Brand field¹⁹⁰, which is used to document a product range or line of products. There are five GNPD Launch Types: New Product, New Variety/Range Extension, New Packaging, New Formulation, Relaunch. Every product in the database is coded with an innovation Type.

Definitions are as follows:

- **New Product:** This launch type is dependent on the Brand field. It is assigned when a new range, line, or family of products is encountered. This launch type is also used if a brand that already exists on GNPD, in one country, crosses over to a new sub-category¹⁹¹.
- **New Variety/Range Extension:** This launch type is dependent on the Brand field. It is used to document an extension to an existing range of products on the GNPD.
- **New Packaging:** This launch type is determined by visually inspecting the product for changes, and also when terms like New Look, New Packaging, or New Size are written on pack.
- **New Formulation:** This launch type is determined when terms such as New Formula, Even Better, Tastier, Now Lower in Fat, New and Improved, or Great New Taste are indicated on pack. They do not look at the ingredient list to determine a new formulation.
- **Relaunch:** This launch type is determined when specified on pack, via secondary source information (trade shows, PR, websites, and press) or when a product has been both significantly repackaged and also reformulated

GNPD products are a representative sampling of the new and/or changed FMCG products in a country. Each product sample or version thereof is purchased once per country--the database does not include information on all the regions and store types in which a product can be found.

Each country's brand activity is treated independently, so if a range of products exists in one particular country, any brand activity in another country is treated independently.

¹⁹⁰ Brand is a free text field where Mintel GNPD shoppers enter all the brand and range information off the product packaging. Brand is used in relation to innovation types to determine whether a new product is a new variety or a new product. A new variety would be an extension to an existing brand, ie. Danone yogurt in a new flavour. A new product would be if they haven't seen the brand before in a particular country, ie. Coca-cola Super Awesome.

¹⁹¹ A new sub-category in this context refers to a sub-category that Mintel GNPD shoppers have not seen the product in within the same country. For instance, carbonated soft drinks are launched under the Coca-cola brand regularly but if diapers or hand cream were launched under Coca-cola that would constitute expanding into a new sub-category. Each country is treated independently.

New Product

This launch type is dependent on the Brand field. It is assigned when a new range, line, or family of products is encountered. This launch type is also used if a brand that already exists on GNPD, in one country, crosses over to a new sub-category.

Examples

Strawberry Cereal

| | |
|--------------------------|-------------------------------------|
| Record ID: | 1507893 |
| Company: | Kellogg |
| Brand: | Kellogg's Special K Pépites |
| Category: | Breakfast Cereals |
| Sub-Category: | Cold Cereals |
| Country: | France |
| Store Name: | Carrefour |
| Store Type: | Mass Merchandise/Hype rmarket |
| Store Address: | Chambourcy 78240 |
| Date Published: | Mar 2011 |
| Product source: | Shopper |
| Launch Type: | New Product |
| Price in local currency: | €2.92 |
| Price in US Dollars: | 3.89 |
| Bar Code: | 5050083533365 |



Product Description

Kellogg's Special K Pépites Fraise (Strawberry) Cereal is made with fruit pieces and enriched with vitamins B1, B2, PP, B6, B9 and B12 and iron. It contains a maximum of 3% fat and is said to be an innovative product. This cereal retails in a recyclable 375g pack. A Nature (Natural) variety is also available in this range.

Product Analysis

| | |
|------------------------|------------------------------|
| Package Type: | Flexible |
| Package Material: | Plastic unspecified |
| Pack Size: | 375.00 g |
| Storage: | Shelf stable |
| Alcohol By Volume (%): | |
| Private Label: | Branded |
| Store Type: | Mass Merchandise/Hypermarket |

Zucchini with Pasta and Hake Baby Meal

Record ID: 1538772
 Company: Numil
 Brand: Milupa Las Recetas De Mamá
 Category: Baby Food
 Sub-Category: Baby Savoury Meals & Dishes
 Country: Spain
 Store Name: AhorraMas
 Store Type: Supermarket
 Store Address: Cordoba 14007
 Date Published: Jun 2011
 Product source: Shopper
 Launch Type: New Product
 Price in local currency: €2.79
 Price in US Dollars: 3.90
 Bar Code: 3041090830013



Product Description

Milupa Las Recetas De Mamá Calabacín con Pasta de Estrellitas y Merluza (Zucchini with Pasta and Hake Baby Meal) contains no colouring or preservatives and is said to be low in salt. The meal can be microwaved or steam cooked and is suitable for babies aged from eight months. It is made according to a traditional Mediterranean recipe and provides a portion of vegetables to provide the necessary vitamins for baby growth. The UHT sterilized product retails in a 2 x 200g pack.

Product Analysis

Package Type: Tub
 Package Material: Plastic PP
 Pack Size: 200.00 g
 Storage: Shelf stable
 Alcohol By Volume (%):
 Private Label: Branded
 Store Type: Supermarket

Butter with Truffle

Record ID: 1566662
Company: Galateo & Friends
Brand: Galateo & Friends
Category: Dairy
Sub-Category: Butter
Country: Italy
Date Published: Jun 2011
Product source: Trade Show
Launch Type: New Product



Product Description

Galateo & Friends Burro con Tartufo (Butter with Truffle) is now available. The product is retailed in a 25g jar and was on display at Tuttofood 2011 trade show in Milan, Italy.

Product Analysis

Package Type:
Package Material:
Pack Size:
Storage: Chilled
Alcohol By Volume (%):
Private Label: Branded

Frozen Vegetables for Minestrone

Record ID: 1955964
Company: Agrifood Abruzzo
Brand: Grandi Panieri
Category: Fruit & Vegetables
Sub-Category: Vegetables
Country: Italy
Store Name: Conad superstore
Store Type: Mass Merchandise/Hypermarket
Store Address: Cava dei Tirreni 84013
Date Published: Dec 2012
Product source: Shopper



Launch Type: New Product
Price in local currency: €3.30
Price in US Dollars: 4.10
Bar Code: 8015536000402

Product Description

Grandi Panieri Il Grande Minestrone Surgelato (Frozen Vegetables for Minestrone) are a mix of diced vegetables. This product retails in a 1000g pack featuring cooking instructions.

Product Analysis

Package Type: Flexible
Package Material: Plastic LDPE
Pack Size: 1000.00 g
Storage: Frozen
Alcohol By Volume (%):
Private Label: Branded
Store Type: Mass Merchandise/Hypermarket

Veal & Poultry Sausages

Record ID: 1901757
Company: Sokolów
Brand: Sokolów Sokoliki
Category: Processed Meat & Egg Products
Sub-Category: Meat Products
Country: Poland
Store Name: Piotr i Pawel
Store Type: Supermarket
Store Address: Warsaw 02-777
Date Published: Oct 2012
Product source: Shopper
Launch Type: New Product
Price in local currency: PLN3.99
Price in US Dollars: 1.22
Price in Euros: 0.96
Bar Code: 5906712808277



Product Description

Sokolów Sokoliki Veal & Poultry Sausages) are low-fat sausages for children. They are made with 87% meat and natural seasonings. The product is rich in protein and retails in a 140g pack.

Product Analysis

| | |
|------------------------|---------------------|
| Package Type: | Tray |
| Package Material: | Plastic unspecified |
| Pack Size: | 140.00 g |
| Storage: | Chilled |
| Alcohol By Volume (%): | |
| Private Label: | Branded |
| Store Type: | Supermarket |

New Variety/Range Extension

This launch type is dependent on the Brand field. It is used to document an extension to an existing range of products on the GNPD.

Examples

Prepared Noodle Meal

Record ID: 566420
 Company: Jean Stalaven
 Brand: Rudix
 Category: Meals & Meal Centers
 Sub-Category: Prepared Meals
 Country: Poland
 Date Published: Aug 2006
 Product source: Shopper
 Launch Type: New Variety/Range Extension
 Price in local currency: PLN3.29
 Price in US Dollars: 1.07
 Price in Euros: 0.84
 Bar Code: 5900961000024



Product Description

Rudix Prepared Noodle Meal is claimed to be free from preservatives and can be heated up in sauce-pan or microwave. This product is available in a 400g pack.

Product Analysis

Package Type: Tray
 Package Material: Plastic PP
 Pack Size: 400.00 g
 Storage: Chilled
 Alcohol By Volume (%):
 Private Label: Branded

Spicy Mince Meat Pizza

Record ID: 1179045
 Company: Campofrio Food Group
 Brand: Campofrio Pizza & Salsa
 Category: Meals & Meal Centers
 Sub-Category: Pizzas
 Country: Portugal
 Date Published: Oct 2009
 Product source: Shopper
 Launch Type: New Variety/Range Extension
 Price in local currency: €2.75
 Price in US Dollars: 3.94
 Bar Code: 8410320033497



Product Description

Campofrio Pizza & Salsa has launched Parrila Argentina (Spicy Mince Meat Pizza). The product is available in a 410g pack containing one sachet of Chimichurri sauce, made with oil, garlic and fine herbs.

Product Analysis

Package Type: Tray
 Package Material: Plastic unspecified
 Pack Size: 410.00 g
 Storage: Frozen
 Alcohol By Volume (%):
 Private Label: Branded

Cherry Cream Flavoured Alpine Milk Chocolate

Record ID: 1772680
 Company: Kraft Foods
 Brand: Milka
 Category: Chocolate Confectionery
 Sub-Category: Chocolate Tablets
 Country: Czech Republic



Store Name: Billa
Store Type: Supermarket
Store Address: Prague 25101
Date Published: Apr 2012
Product source: Shopper
Launch Type: New
Variety/Range
Extension
Price in local currency: CZK24.90
Price in US Dollars: 1.36
Price in Euros: 1.01
Bar Code: 7622300674595

Product Description

Milka Alpska Mlečna Cokolada (Cherry Cream Flavoured Alpine Milk Chocolate) is now available. The product retails in a 100g pack.

Product Analysis

Package Type: Flexible
Package Material: Plastic PP
Pack Size: 100.00 g
Storage: Shelf stable
Alcohol By Volume (%):
Private Label: Branded
Store Type: Supermarket

Whole Green Bean Pods

Record ID: 1850716
Company: Bonduelle
Brand: Bonduelle
Category: Fruit & Vegetables
Sub-Category: Vegetables
Country: Czech Republic
Store Name: Kaufland
Store Type: Mass
Merchandise/Hype
rmarket
Store Address: Prague 10100
Date Published: Aug 2012
Product source: Shopper
Launch Type: New
Variety/Range
Extension



Price in local currency: CZK37.90
Price in US Dollars: 1.87
Price in Euros: 1.49
Bar Code: 3083680002295

Product Description

Bonduelle Zelene Fazulove Struky Cele (Whole Green Bean Pods) are now available. The product retails in a 425ml can.

Product Analysis

Package Type: Can
Package Material: Metal steel
Pack Size: 400.00 g
Storage: Shelf stable
Alcohol By Volume (%):
Private Label: Branded
Store Type: Mass Merchandise/Hypermarket

Black Pepper & Sea Salt Crackers

Record ID: 1185038
Company: Verduijn's
Brand: Verduijn's
Category: Bakery
Sub-Category: Savoury Biscuits/Crackers
Country: Belgium
Date Published: Sep 2009
Product source: Shopper
Launch Type: New Variety/Range Extension
Price in local currency: €1.68
Price in US Dollars: 2.46
Bar Code: 8713726300539



Product Description

Verduijn's Black Pepper and Sea Salt Crackers are said to be delicious as nibbles with drinks. This product can be served with a dip or topped with sour cream and salmon. The product is retailed in a 75g pack. Also available are the following varieties: Sesame and Sea Salt; and Rosemary and Sea Salt.

Product Analysis

| | |
|------------------------|-----------------|
| Package Type: | Flexible |
| Package Material: | Metallised Film |
| Pack Size: | 2.60 g |
| Storage: | Shelf stable |
| Alcohol By Volume (%): | |
| Private Label: | Branded |

New Packaging

This launch type is determined by visually inspecting the product for changes, and also when terms like New Look, New Packaging, or New Size are written on pack.

ExamplesBolognese penne pasta

| | |
|--------------------------|---------------------------------|
| Record ID: | 1510482 |
| Company: | Sodebo |
| Brand: | Pasta Box by Sodeb'O |
| Category: | Meals & Meal Centers |
| Sub-Category: | Instant Pasta |
| Country: | Spain |
| Store Name: | Alcampo |
| Store Type: | Mass Merchandise/Hypermarket |
| Store Address: | Torrelodones 28240 |
| Date Published: | Mar 2011 |
| Product source: | Shopper |
| Launch Type: | New Packaging |
| Price in local currency: | €2.99 |
| Price in US Dollars: | 3.99 |
| Bar Code: | 3242272252054 |



Product Description

Pasta Box by Sodeb'O Penne Boloñesa (Bolognese Penne Pasta) has been repackaged and is now available in a 300g pack complete with a fork. The precooked product can be prepared in the microwave in two minutes.

Product Analysis

| | |
|-------------------|---------------------|
| Package Type: | Tub |
| Package Material: | Plastic unspecified |
| Pack Size: | 300.00 g |

Storage: Chilled
Alcohol By Volume (%):
Private Label: Branded
Store Type: Mass Merchandise/Hypermarket

Chili con Carne and Rice Kit

Record ID: 1708460
Company: Carrefour - CMI
Brand: Carrefour
Category: Meals & Meal Centers
Sub-Category: Meal Kits
Country: France
Store Name: Carrefour
Store Type: Mass Merchandise/Hypermarket
Store Address: Montesson 78360
Date Published: Jan 2012
Product source: Shopper
Launch Type: New Packaging
Price in local currency: €1.64
Price in US Dollars: 2.19
Bar Code: 3270190131038



Product Description

Carrefour Chili con Carne (Chili con Carne and Rice Kit) has been repackaged in a newly designed 510g box containing a 400g can of chili with beef mixture and a 110g sachet of long grain rice. The can content can be heated in the microwave once cooked on a pan. This product serves 2 people.

Product Analysis

Package Type: Can
Package Material: Metal steel
Pack Size: 510.00 g
Storage: Shelf stable
Alcohol By Volume (%):
Private Label: Private Label
Store Type: Mass Merchandise/Hypermarket

Organic Mini Rice Cakes

Record ID: 1693571
Company: Fiorentini Alimentari
Brand: Fiorentini Bio
Category: Bakery
Sub-Category: Savoury Biscuits/Crackers
Country: Italy
Store Name: Conad superstore
Store Type: Mass
Merchandise/Hypermarket
Store Address: Cava dei Tirreni 84013
Date Published: Dec 2011
Product source: Shopper
Launch Type: New Packaging
Price in local currency: €1.90
Price in US Dollars: 2.61
Bar Code: 8002885000160



Product Description

Fiorentini Bio Mini Gallette di Riso (Organic Mini Rice Cakes) have been repackaged and now retail in a newly designed 200g pack with a resealable tab. This product from Italian rice has a low fat content.

Product Analysis

Package Type: Flexible
Package Material: Plastic PP
Pack Size: 200.00 g
Storage: Shelf stable
Alcohol By Volume (%):
Private Label: Branded
Store Type: Mass Merchandise/Hypermarket

Wholegrain Subs

Record ID: 1918744
Company: Kohberg Brød
Brand: Kohberg
Category: Bakery
Sub-Category: Bread & Bread Products
Country: Denmark
Store Name: Føtex
Store Type: Supermarket
Store Address: Aalborg 9000
Date Published: Nov 2012
Product source: Shopper
Launch Type: New Packaging
Price in local currency: DKK15.00
Price in US Dollars: 2.59
Price in Euros: 2.09
Bar Code: 5701246108325



Product Description

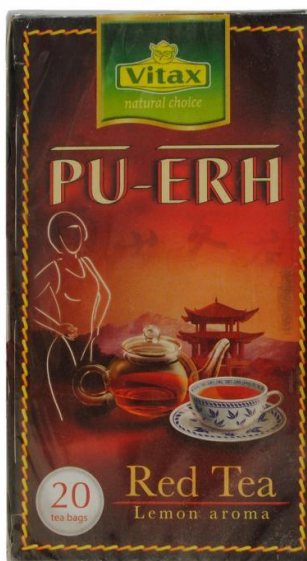
Kohberg Fuld Kornssubs (Wholegrain Subs) have been repackaged in a newly designed 510g pack containing six units. The design features a pink bra to support the fight against breast cancer, and 1 kr. will be donated to this campaign for each purchased bag. The packaging bears a Green Keyhole logo for a healthier choice.

Product Analysis

Package Type: Flexible
Package Material: Plastic unspecified
Pack Size: 510.00 g
Storage: Shelf stable
Alcohol By Volume (%):
Private Label: Branded
Store Type: Supermarket

Pu-Erh Red Tea with Lemon Aroma

Record ID: 1374368
Company: Foltin Globe
Brand: Vitax
Category: Hot Beverages
Sub-Category: Tea
Country: Hungary
Store Name: Tesco
Store Type: Supermarket
Store Address: Gödöllő 2100
Date Published: Jul 2010
Product source: Shopper
Launch Type: New Packaging
Price in local currency: HUF286.00
Price in US Dollars: 1.29
Price in Euros: 1.02
Bar Code: 5902806061054



Product Description

Vitax Pu-Erh Red Tea with Lemon Aroma has been repackaged and is now available in a 30g pack with an updated design. One pack contains 20 x 1.5g tea bags. The tea is said to be discovered thousand years ago in China and was used in a secret by Chinese emperors of the country and their families only.

Product Analysis

Package Type: Carton
Package Material: Board white lined
Pack Size: 30.00 g
Storage: Shelf stable
Alcohol By Volume (%):
Private Label: Branded
Store Type: Supermarket

Chocolate Flavour Mini Biscuits

Record ID: 1917236
Company: Kraft Foods
Brand: Lu Prince Mini
Mystery Box
Category: Bakery
Sub-Category: Sweet
Biscuits/Cookies
Country: Belgium
Store Name: Colruyt
Store Type: Supermarket
Store Address: Nossegem 1930
Date Published: Oct 2012
Product source: Shopper
Launch Type: New Packaging
Price in local currency: €3.89
Price in US Dollars: 4.82
Bar Code: 5629400759803



Product Description

Lu Prince Mini Mystery Box Biscuits Fourrés Goût Chocolat (Chocolate Flavour Mini Biscuits) are now available in a limited edition festive treasure box. The product retails in a pack containing 10 x 42g biscuits and a games booklet.

Product Analysis

Package Type: Flexible
Package Material: Metallised Film
Pack Size: 42.00 g
Storage: Shelf stable
Alcohol By Volume (%):
Private Label: Branded
Store Type: Supermarket

Coffee Repackaging

Record ID: 385791
 Company: Christgau Kaffe
 Brand: Christgau
 Category: Hot Beverages
 Sub-Category: Coffee
 Country: Denmark
 Date Published: Aug 2005
 Product source: Publication
 Launch Type: New Packaging



Product Description

The Christgau coffee range has been repackaged in resealable packs with a tiny air hole to preserve the aroma.

Product Analysis

Package Type: Flexible
 Package Material:
 Pack Size: 250.00 g
 Storage:
 Alcohol By Volume (%):
 Private Label: Branded
 Patent Number:

Carbonated Drink

Record ID: 1216205
 Company: Fashion Drinks
 Brand: Moxito by Fashion Drinks
 Category: Carbonated Soft Drinks
 Sub-Category: Carbonated Soft Drinks
 Country: Spain
 Date Published: Dec 2009
 Product source: Shopper
 Launch Type: New Packaging
 Price in local currency: €0.65



Price in US Dollars: 0.97
Bar Code: 8435040300117

Product Description

Moxito by Fashion Drinks Carbonated Drink has been repackaged and is now retailed in a 250ml pack featuring a new design. This drink is alcohol-free and is available in an original citrus and peppermint flavour.

Product Analysis

| | |
|------------------------|-----------------|
| Package Type: | Can |
| Package Material: | Metal aluminium |
| Pack Size: | 250.00 ml |
| Storage: | Shelf stable |
| Alcohol By Volume (%): | |
| Private Label: | Branded |

New Formulation

This launch type is determined by visually looking for key terms on pack like New Formula, Even Better, Tastier, Now Lower in Fat, New and Improved, Great New Taste, Now With..., or Better We cannot assume that a product is newly reformulated unless it is clearly stated on pack or we know from secondary sources that this is the case.

Examples

Frying Oil

| | |
|--------------------------|---------------------|
| Record ID: | 1455097 |
| Company: | Lesieur |
| Brand: | Lesieur Frial |
| Category: | Sauces & Seasonings |
| Sub-Category: | Oils |
| Country: | France |
| Store Name: | Intermarché |
| Store Type: | Supermarket |
| Store Address: | Montendre 17240 |
| Date Published: | Dec 2010 |
| Product source: | Shopper |
| Launch Type: | New Formulation |
| Price in local currency: | €2.35 |
| Price in US Dollars: | 3.18 |
| Bar Code: | 3265479327011 |



Product Description

Lesieur Frial Frying Oil is now available featuring a new recipe containing no palm oil, which is a source of saturated fat. This product is said to make crunchy and light food without bad odours and retails in a 1L bottle.

Product Analysis

| | |
|------------------------|--------------|
| Package Type: | Bottle |
| Package Material: | Plastic PET |
| Pack Size: | 1.00 litre |
| Storage: | Shelf stable |
| Alcohol By Volume (%): | |
| Private Label: | Branded |
| Store Type: | Supermarket |

Chocolate and Hazelnut Flavoured Milk

Record ID: 940330
 Company: Zott
 Brand: Zott Monte Drink
 Category: Dairy
 Sub-Category: Flavoured Milk
 Country: Hungary
 Date Published: Jul 2008
 Product source: Shopper
 Launch Type: New Formulation
 Price in local currency: HUF135.00
 Price in US Dollars: 0.87
 Price in Euros: 0.56
 Bar Code: 4014500024424



Product Description

Zott Monte Drink Chocolate and Hazelnut Flavoured Milk has been reformulated and made using grape sugar. This product contains calcium and vitamin B12 and is available in a 200ml bottle.

Product Analysis

Package Type: Bottle
 Package Material: Plastic PE
 Pack Size: 200.00 ml
 Storage: Chilled
 Alcohol By Volume (%):
 Private Label: Branded

Low-Fat Strawberry Yogurt

Record ID: 1813219
 Company: Danone
 Brand: Danone Vitalinea SatisfAcción Pro
 Category: Dairy
 Sub-Category: Spoonable Yogurt
 Country: Spain
 Store Name: Mercadona
 Store Type: Supermarket
 Store Address: Empuriabrava 17487



Date Published: Jun 2012
Product source: Shopper
Launch Type: New Formulation
Price in local currency: €2.45
Price in US Dollars: 3.17
Bar Code: 8410500013608

Product Description

Danone Vitalinea SatisfAcción Pro Fresa (Low-Fat Strawberry Yogurt) is now available with a new formula that is said to have double the protein, providing 10.5g of protein per portion. This gluten-free yogurt comprises fermented milk with skimmed fresh cheese and strawberries. This product with a creamy texture is retailed in a 540g pack with four 135g tubs. Also reformulated in this range are varieties with the following flavours: Natural; and Peach.

Product Analysis

Package Type: Tub
Package Material: Plastic PS
Pack Size: 135.00 g
Storage: Chilled
Alcohol By Volume (%):
Private Label: Branded
Store Type: Supermarket

Semolina Dessert Reformulation

Record ID: 379401
Company: Emmi
Brand: Emmi Griess Töpfli
Category: Desserts & Ice Cream
Sub-Category: Chilled Desserts
Country: Portugal
Date Published: Jul 2005
Product source: Shopper
Launch Type: New Formulation
Price in local currency: €0.99
Price in US Dollars: 1.27
Bar Code: 7610900118380



Product Description

Believed to be reformulated is Griess-Töpfli, a semolina dessert with cream, packaged in a 175g tub.

Product Analysis

| | |
|------------------------|------------|
| Package Type: | Tub |
| Package Material: | Plastic PS |
| Pack Size: | 175.00 g |
| Storage: | Chilled |
| Alcohol By Volume (%): | |
| Private Label: | Branded |
| Patent Number: | |

Relaunch

This launch type is determined when: there is some wording to the effect that the product has been relaunched on the packaging or the product does not exist on the database but there is secondary source information (such as from a press release, magazine, trade show, website or a shop display) that the product has been relaunched. Key phrases to look out for include "previously or formerly known as..." and "new name". If a product meets the criteria for the new packaging launch type and for the new formulation launch type, then the relaunch launch type should be selected.

Examples

Multifruit Smoothie

| | |
|--------------------------|-------------------------------------|
| Record ID: | 1813068 |
| Company: | Marwit |
| Brand: | Marwit Owocudo Happy |
| Category: | Juice Drinks |
| Sub-Category: | Juice |
| Country: | Poland |
| Store Name: | Real |
| Store Type: | Mass Merchandise/Hyper market |
| Store Address: | Warsaw 02-801 |
| Date Published: | Jun 2012 |
| Product source: | Shopper |
| Launch Type: | Relaunch |
| Price in local currency: | PLN3.69 |
| Price in US Dollars: | 1.10 |
| Price in Euros: | 0.85 |
| Bar Code: | 5904373000368 |



Product Description

Marwit Owocudo Happy Sok Wieloowocowy (Multifruit Smoothie) has been relaunched and comprises pasteurised juice with fruit mousse, partially from concentrate and purée. It contains no added sugars and only natural sugars. The product retails in a 200ml bottle.

Product Analysis

| | |
|------------------------|-------------|
| Package Type: | Bottle |
| Package Material: | Glass plain |
| Pack Size: | 200.00 ml |
| Storage: | Chilled |
| Alcohol By Volume (%): | |

Private Label:

Branded

Store Type:

Mass Merchandise/Hypermarket

Sliced Brigante Cheese

Record ID: 1941519
Company: Fratelli Pinna
Azienda Casearia
Brand: F.Ili Pinna
Category: Dairy
Sub-Category: Hard Cheese &
Semi-Hard Cheese
Country: Italy
Store Name: Auchan
Store Type: Mass
Merchandise/Hype
rmarket
Store Address: Nola 80035
Date Published: Nov 2012
Product source: Shopper
Launch Type: Relaunch
Price in local currency: €1.89
Price in US Dollars: 2.35
Bar Code: 8010861005092



Product Description

F.Ili Pinna Brigante a Fette (Sliced Brigante Cheese) has been relaunched. The sheep cheese now retails in a 0.100kg tray pack.

Product Analysis

Package Type: Tray
Package Material: Plastic unspecified
Pack Size: 100.00 g
Storage: Chilled
Alcohol By Volume (%):
Private Label: Branded
Store Type: Mass Merchandise/Hypermarket

Natural Mineral Water

Record ID: 1927347
 Company: SEAB
 Brand: Marque Savoie Aix
 Les Bains
 Category: Water
 Sub-Category: Water
 Country: France
 Date Published: Nov 2012
 Product source: Trade Show
 Launch Type: Relaunch



Product Description

Marque Savoie Aix Les Bains Eau Minérale Naturelle (Natural Mineral Water) has been relaunched with a new brand name and in a newly designed pack. The product retails in a 0.75L bottle and was on display at the SIAL 2012 trade show, in Paris.

Product Analysis

Package Type: Bottle
 Package Material: Plastic PET
 Pack Size: 0.75 litre
 Storage: Shelf stable
 Alcohol By Volume (%):
 Private Label: Branded

Pistachio Ice Cream

Record ID: 1957719
 Company: Auchan
 Brand: Auchan
 Category: Desserts & Ice Cream
 Sub-Category: Dairy-Based Frozen Products
 Country: France
 Store Name: Auchan
 Store Type: Mass Merchandise/Hypermarket
 Store Address: Plaisir 78370
 Date Published: Dec 2012
 Product source: Shopper
 Launch Type: Relaunch



Price in local currency: €2.09

Price in US Dollars: 2.60

Bar Code: 3254563259420

Product Description

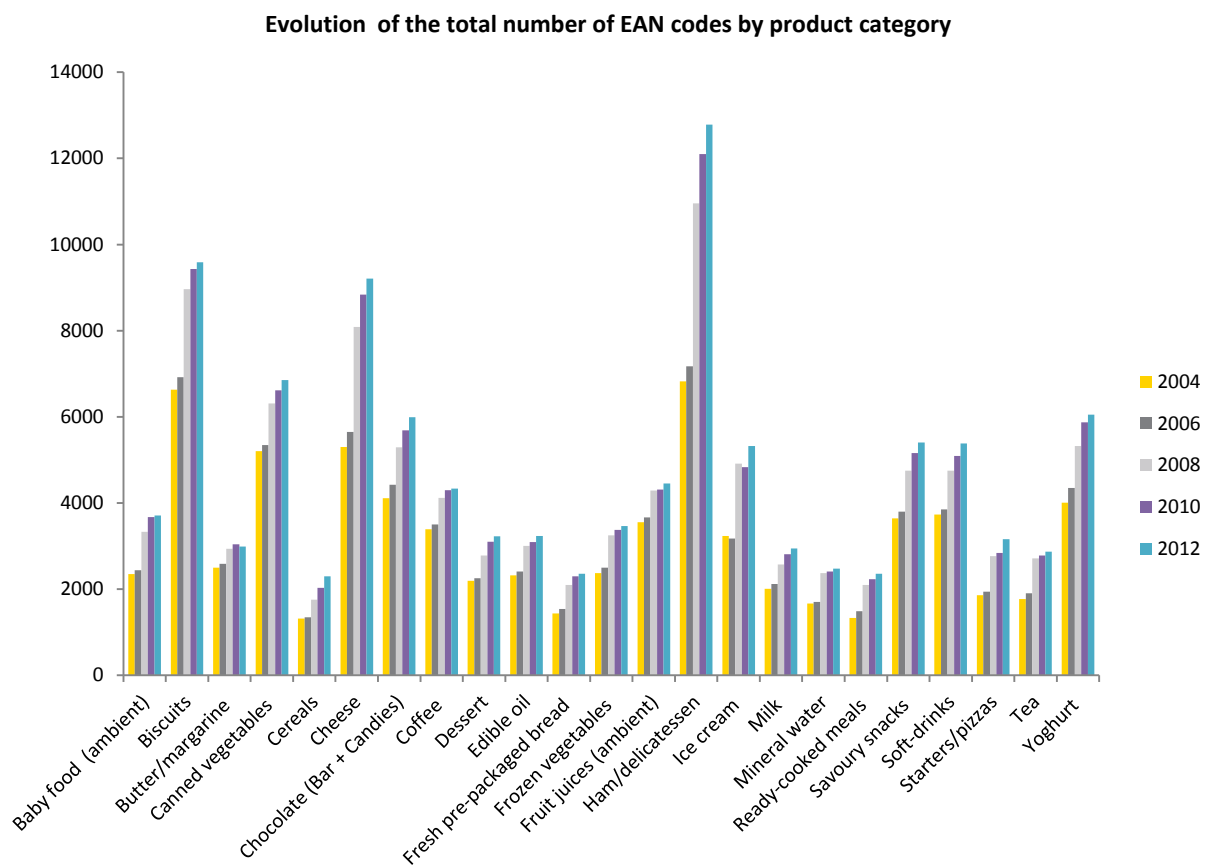
Auchan Glace Pistache (Pistachio Ice Cream) has been reformulated with a new recipe. The product contains pieces of roasted pistachios and retails in a newly designed 1L tub, which contains approximately 20 servings.

Product Analysis

| | |
|------------------------|------------------------------|
| Package Type: | Tub |
| Package Material: | Plastic unspecified |
| Pack Size: | 1.00 litre |
| Storage: | Frozen |
| Alcohol By Volume (%): | |
| Private Label: | Private Label |
| Store Type: | Mass Merchandise/Hypermarket |

11.2. Annex B: Descriptive statistics

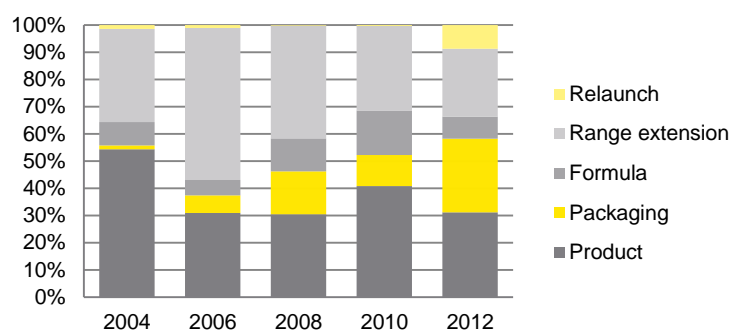
11.2.1. Evolution of choice



11.2.2. Evolution of innovation per product category

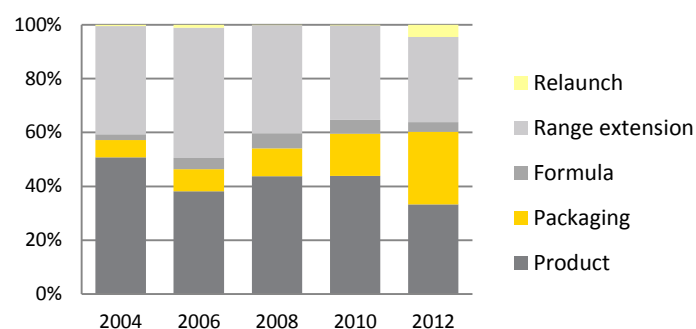
| Proportion of new product innovations | 2004 | 2006 | 2008 | 2010 | 2012 |
|---------------------------------------|------|------|------|------|------|
| Baby food (ambient) | | | | | |
| Product | 54% | 31% | 31% | 41% | 31% |
| Packaging | 1% | 6% | 16% | 11% | 27% |
| Formula | 9% | 6% | 12% | 16% | 8% |
| Range extension | 34% | 56% | 41% | 31% | 25% |
| Relaunch | 1% | 1% | 0% | 0% | 9% |
| TOTAL | 100% | 100% | 100% | 100% | 100% |

Proportion of new product innovations - baby food (ambient)



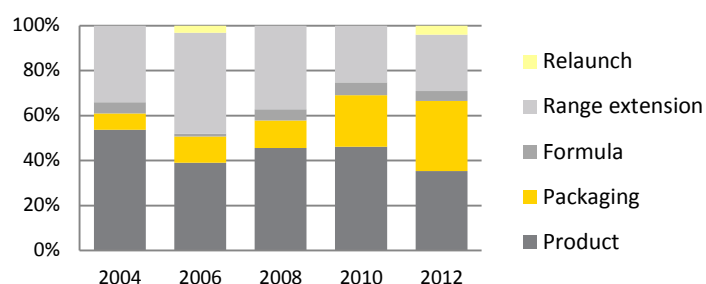
| Proportion of new product innovations | 2004 | 2006 | 2008 | 2010 | 2012 |
|---------------------------------------|------|------|------|------|------|
| Biscuits | | | | | |
| Product | 51% | 38% | 44% | 44% | 33% |
| Packaging | 6% | 8% | 10% | 16% | 27% |
| Formula | 2% | 4% | 6% | 5% | 4% |
| Range extension | 40% | 48% | 40% | 35% | 32% |
| Relaunch | 1% | 1% | 0% | 0% | 5% |
| TOTAL | 100% | 100% | 100% | 100% | 100% |

Proportion of new product innovations - Biscuits



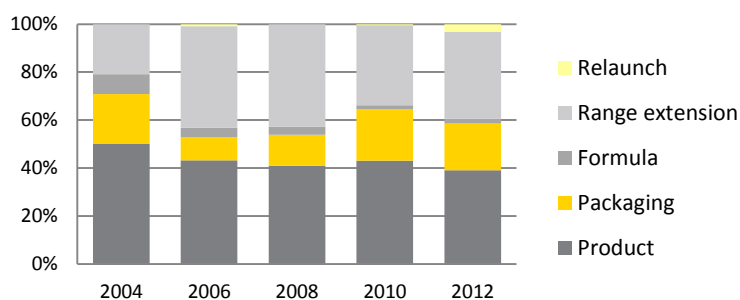
| Proportion of new product innovations Butter/margarine | 2004 | 2006 | 2008 | 2010 | 2012 |
|---|-------------|-------------|-------------|-------------|-------------|
| Product | 54% | 39% | 46% | 46% | 35% |
| Packaging | 7% | 12% | 12% | 23% | 31% |
| Formula | 5% | 1% | 5% | 6% | 4% |
| Range extension | 34% | 45% | 37% | 25% | 25% |
| Relaunch | 0% | 3% | 0% | 0% | 4% |
| TOTAL | 100% | 100% | 100% | 100% | 100% |

Proportion of new product innovations -
Butter/margarine



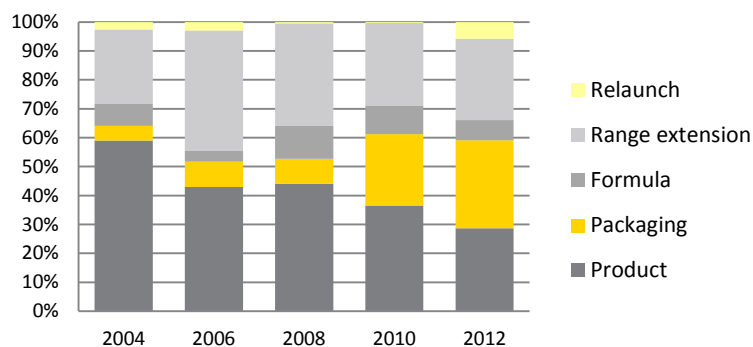
| Proportion of new product innovations Canned vegetables | 2004 | 2006 | 2008 | 2010 | 2012 |
|--|-------------|-------------|-------------|-------------|-------------|
| Product | 50% | 43% | 41% | 43% | 39% |
| Packaging | 21% | 10% | 13% | 22% | 19% |
| Formula | 8% | 4% | 3% | 2% | 2% |
| Range extension | 21% | 42% | 43% | 33% | 36% |
| Relaunch | 0% | 1% | 0% | 0% | 3% |
| TOTAL | 100% | 100% | 100% | 100% | 100% |

Proportion of new product innovations - Canned
vegetables



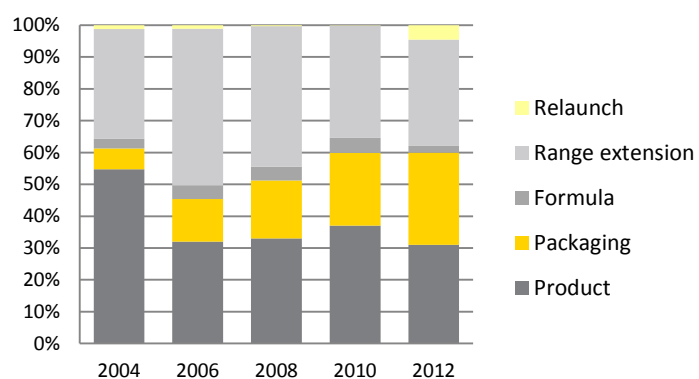
| <i>Proportion of new product innovations</i> Cereals | 2004 | 2006 | 2008 | 2010 | 2012 |
|--|-------------|-------------|-------------|-------------|-------------|
| Product | 59% | 43% | 44% | 37% | 29% |
| Packaging | 5% | 9% | 9% | 25% | 31% |
| Formula | 8% | 4% | 11% | 10% | 7% |
| Range extension | 26% | 42% | 35% | 29% | 28% |
| Relaunch | 3% | 3% | 0% | 0% | 6% |
| TOTAL | 100% | 100% | 100% | 100% | 100% |

Proportion of new product innovations - Cereals



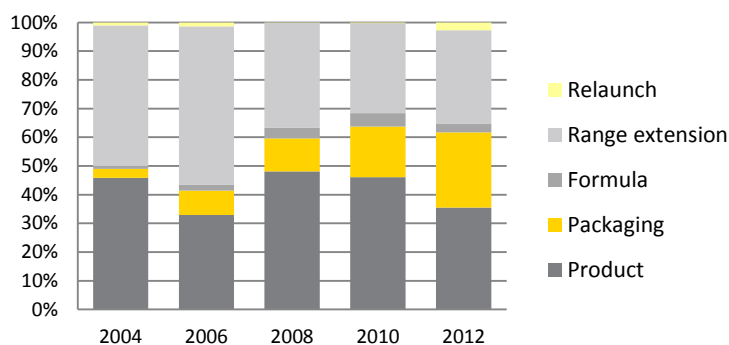
| <i>Proportion of new product innovations</i> Cheese | 2004 | 2006 | 2008 | 2010 | 2012 |
|---|-------------|-------------|-------------|-------------|-------------|
| Product | 55% | 32% | 33% | 37% | 31% |
| Packaging | 7% | 13% | 18% | 23% | 29% |
| Formula | 3% | 4% | 4% | 5% | 2% |
| Range extension | 35% | 49% | 44% | 35% | 33% |
| Relaunch | 1% | 1% | 0% | 0% | 5% |
| TOTAL | 100% | 100% | 100% | 100% | 100% |

Proportion of new product innovations - Cheese



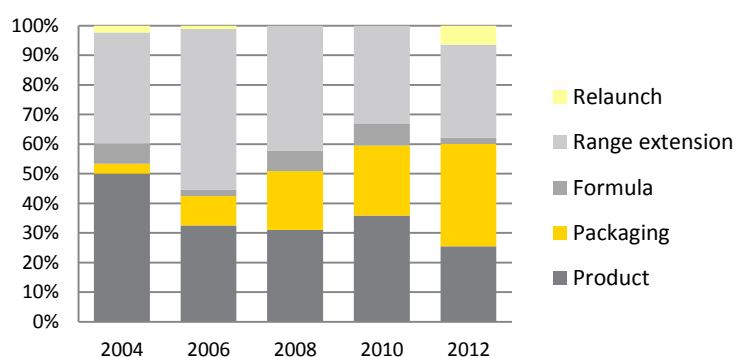
| Proportion of new product innovations Chocolate (Bar + Candies) | 2004 | 2006 | 2008 | 2010 | 2012 |
|--|-------------|-------------|-------------|-------------|-------------|
| Product | 46% | 33% | 48% | 46% | 36% |
| Packaging | 3% | 8% | 11% | 18% | 26% |
| Formula | 1% | 2% | 4% | 5% | 3% |
| Range extension | 49% | 55% | 37% | 31% | 33% |
| Relaunch | 1% | 1% | 0% | 0% | 3% |
| TOTAL | 100% | 100% | 100% | 100% | 100% |

Proportion of new product innovations - Chocolate
(Bar + Candies)



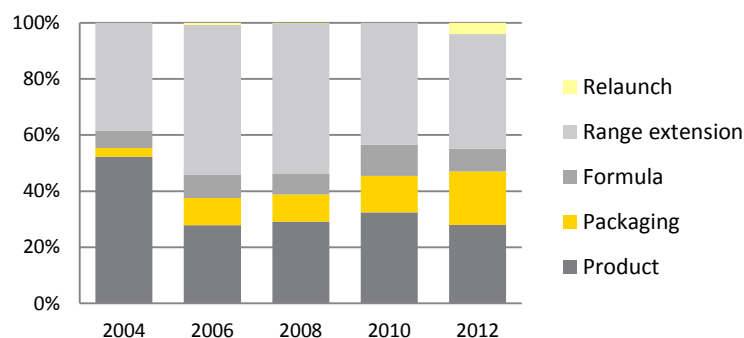
| Proportion of new product innovations Coffee | 2004 | 2006 | 2008 | 2010 | 2012 |
|---|-------------|-------------|-------------|-------------|-------------|
| Product | 50% | 33% | 31% | 36% | 25% |
| Packaging | 3% | 10% | 20% | 24% | 35% |
| Formula | 7% | 2% | 7% | 7% | 2% |
| Range extension | 38% | 54% | 42% | 33% | 32% |
| Relaunch | 2% | 1% | 0% | 0% | 6% |
| TOTAL | 100% | 100% | 100% | 100% | 100% |

Proportion of new product innovations - Coffee



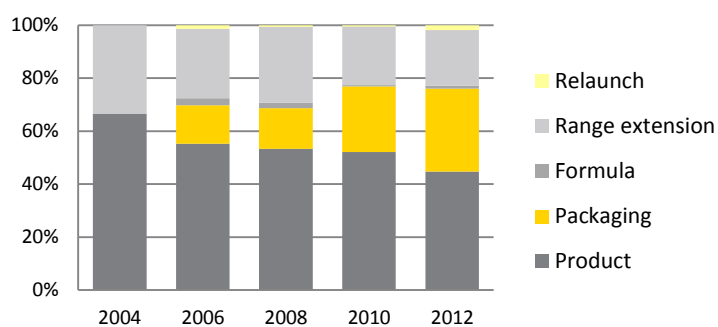
| Proportion of new product innovations Dessert | 2004 | 2006 | 2008 | 2010 | 2012 |
|--|-------------|-------------|-------------|-------------|-------------|
| Product | 52% | 28% | 29% | 32% | 28% |
| Packaging | 3% | 10% | 10% | 13% | 19% |
| Formula | 6% | 8% | 7% | 11% | 8% |
| Range extension | 38% | 54% | 54% | 44% | 41% |
| Relaunch | 0% | 1% | 0% | 0% | 4% |
| TOTAL | 100% | 100% | 100% | 100% | 100% |

Proportion of new product innovations - Dessert



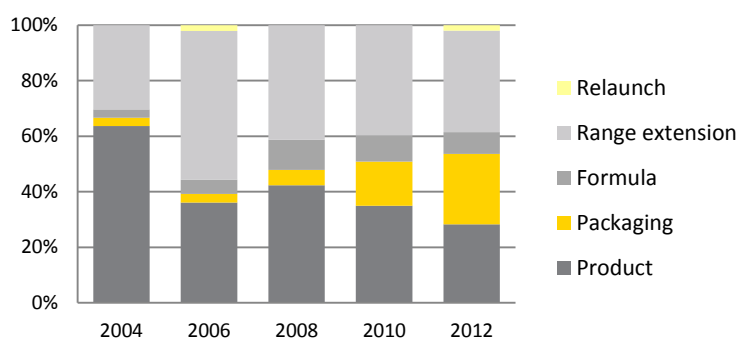
| Proportion of new product innovations Edible oil | 2004 | 2006 | 2008 | 2010 | 2012 |
|---|-------------|-------------|-------------|-------------|-------------|
| Product | 67% | 55% | 53% | 52% | 45% |
| Packaging | 0% | 14% | 15% | 25% | 31% |
| Formula | 0% | 3% | 2% | 1% | 1% |
| Range extension | 33% | 26% | 29% | 22% | 21% |
| Relaunch | 0% | 1% | 1% | 1% | 2% |
| TOTAL | 100% | 100% | 100% | 100% | 100% |

Proportion of new product innovations - Edible oil



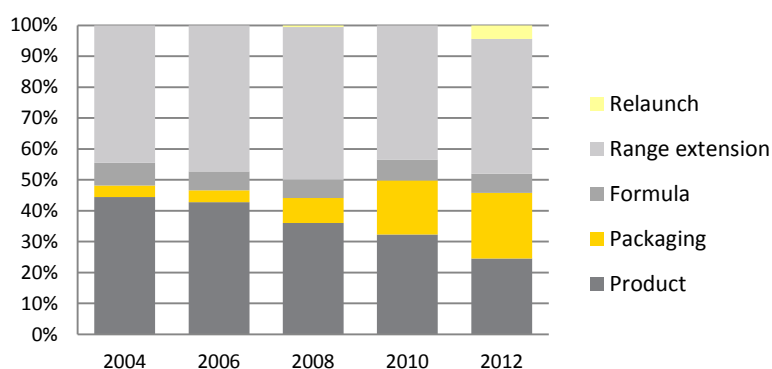
| Proportion of new product innovations Fresh pre-packaged bread | 2004 | 2006 | 2008 | 2010 | 2012 |
|---|-------------|-------------|-------------|-------------|-------------|
| Product | 64% | 36% | 42% | 35% | 28% |
| Packaging | 3% | 3% | 5% | 16% | 25% |
| Formula | 3% | 5% | 11% | 9% | 8% |
| Range extension | 30% | 54% | 41% | 40% | 37% |
| Relaunch | 0% | 2% | 0% | 0% | 2% |
| TOTAL | 100% | 100% | 100% | 100% | 100% |

Proportion of new product innovations - Fresh pre-packaged bread



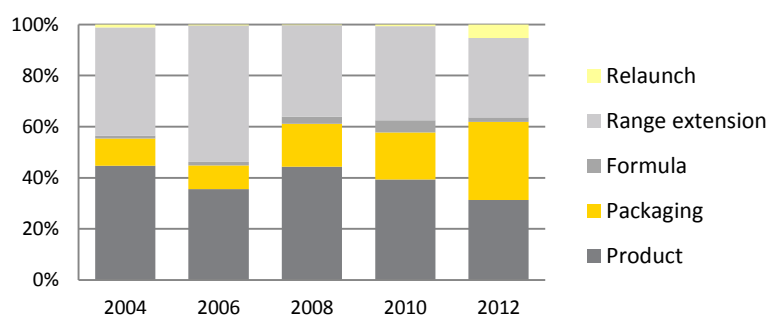
| Proportion of new product innovations Frozen vegetables | 2004 | 2006 | 2008 | 2010 | 2012 |
|--|-------------|-------------|-------------|-------------|-------------|
| Product | 44% | 43% | 36% | 32% | 25% |
| Packaging | 4% | 4% | 8% | 17% | 21% |
| Formula | 7% | 6% | 6% | 7% | 6% |
| Range extension | 44% | 47% | 49% | 43% | 44% |
| Relaunch | 0% | 0% | 1% | 0% | 4% |
| TOTAL | 100% | 100% | 100% | 100% | 100% |

Proportion of new product innovations - Frozen vegetables



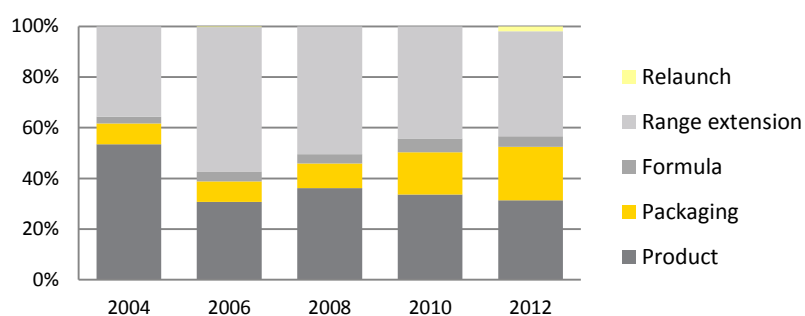
| Proportion of new product innovations Fruit juices (ambient) | 2004 | 2006 | 2008 | 2010 | 2012 |
|---|-------------|-------------|-------------|-------------|-------------|
| Product | 45% | 36% | 44% | 39% | 31% |
| Packaging | 11% | 9% | 17% | 18% | 31% |
| Formula | 1% | 1% | 3% | 5% | 2% |
| Range extension | 42% | 53% | 36% | 37% | 31% |
| Relaunch | 1% | 0% | 0% | 1% | 5% |
| TOTAL | 100% | 100% | 100% | 100% | 100% |

Proportion of new product innovations - Fruit juices
(ambient)



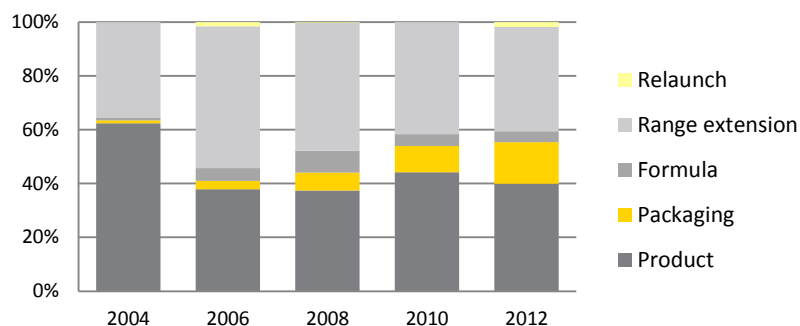
| Proportion of new product innovations Ham/delicatessen | 2004 | 2006 | 2008 | 2010 | 2012 |
|---|-------------|-------------|-------------|-------------|-------------|
| Product | 53% | 31% | 36% | 34% | 31% |
| Packaging | 8% | 8% | 10% | 17% | 21% |
| Formula | 3% | 4% | 4% | 6% | 4% |
| Range extension | 36% | 57% | 50% | 44% | 41% |
| Relaunch | 0% | 0% | 0% | 0% | 2% |
| TOTAL | 100% | 100% | 100% | 100% | 100% |

Proportion of new product innovations -
Ham/delicatessen



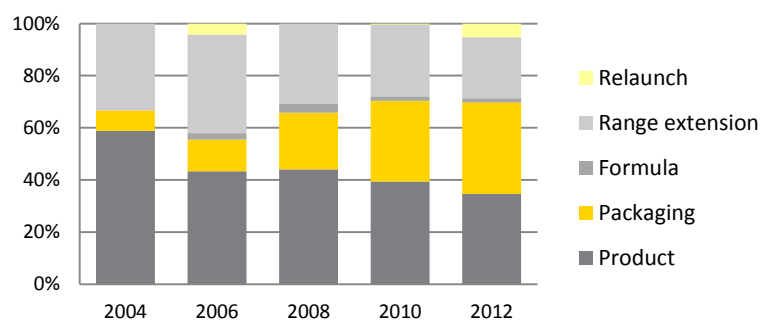
| Proportion of new product innovations Ice cream | 2004 | 2006 | 2008 | 2010 | 2012 |
|--|-------------|-------------|-------------|-------------|-------------|
| Product | 62% | 38% | 37% | 44% | 40% |
| Packaging | 1% | 3% | 7% | 10% | 15% |
| Formula | 1% | 5% | 8% | 4% | 4% |
| Range extension | 35% | 53% | 48% | 42% | 39% |
| Relaunch | 0% | 2% | 0% | 0% | 2% |
| TOTAL | 100% | 100% | 100% | 100% | 100% |

Proportion of new product innovations - Ice cream



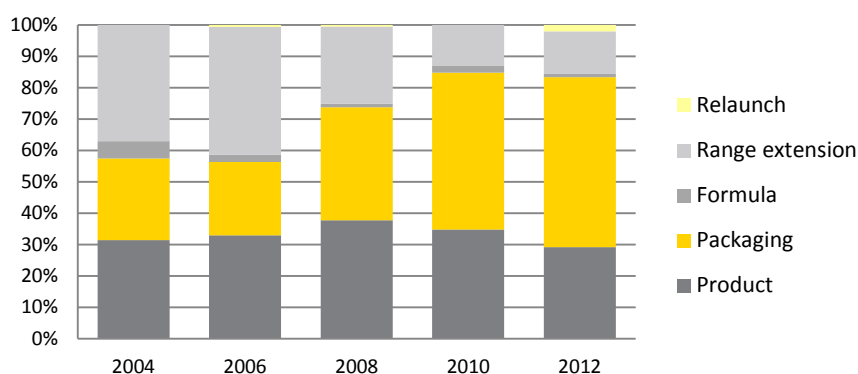
| Proportion of new product innovations Milk | 2004 | 2006 | 2008 | 2010 | 2012 |
|---|-------------|-------------|-------------|-------------|-------------|
| Product | 59% | 43% | 44% | 39% | 35% |
| Packaging | 8% | 12% | 22% | 31% | 35% |
| Formula | 0% | 2% | 3% | 2% | 2% |
| Range extension | 33% | 38% | 31% | 28% | 23% |
| Relaunch | 0% | 4% | 0% | 0% | 5% |
| TOTAL | 100% | 100% | 100% | 100% | 100% |

Proportion of new product innovations - Milk



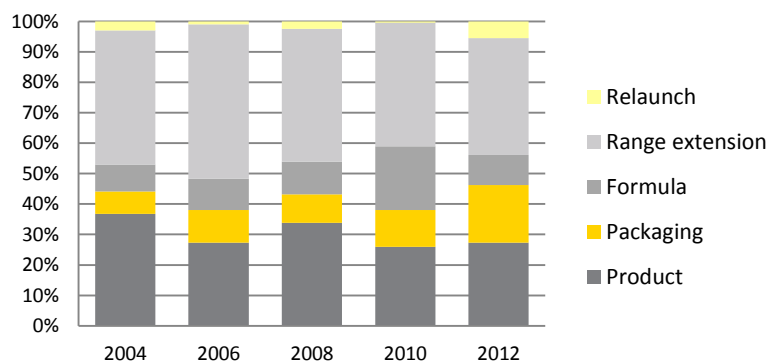
| Proportion of new product innovations Mineral water | 2004 | 2006 | 2008 | 2010 | 2012 |
|--|-------------|-------------|-------------|-------------|-------------|
| Product | 31% | 33% | 38% | 35% | 29% |
| Packaging | 26% | 23% | 36% | 50% | 54% |
| Formula | 6% | 2% | 1% | 2% | 1% |
| Range extension | 37% | 41% | 25% | 13% | 14% |
| Relaunch | 0% | 1% | 1% | 0% | 2% |
| TOTAL | 100% | 100% | 100% | 100% | 100% |

Proportion of new product innovations - Mineral water



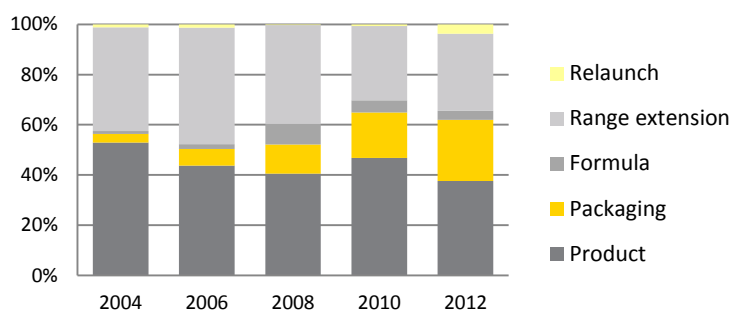
| <i>Proportion of new product innovations</i> | 2004 | 2006 | 2008 | 2010 | 2012 |
|--|------|------|------|------|------|
| Ready-cooked meals | | | | | |
| Product | 37% | 27% | 34% | 26% | 27% |
| Packaging | 7% | 11% | 9% | 12% | 19% |
| Formula | 9% | 10% | 11% | 21% | 10% |
| Range extension | 44% | 51% | 44% | 41% | 38% |
| Relaunch | 3% | 1% | 2% | 0% | 6% |
| TOTAL | 100% | 100% | 100% | 100% | 100% |

Proportion of new product innovations - Ready-cooked meals



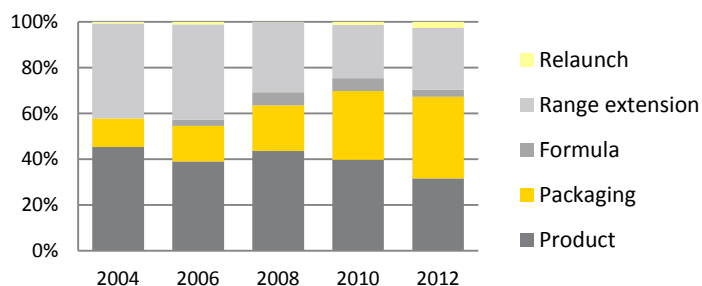
| <i>Proportion of new product innovations</i> | 2004 | 2006 | 2008 | 2010 | 2012 |
|--|------|------|------|------|------|
| Savoury snacks | | | | | |
| Product | 53% | 44% | 41% | 47% | 38% |
| Packaging | 3% | 7% | 12% | 18% | 24% |
| Formula | 1% | 2% | 8% | 5% | 4% |
| Range extension | 41% | 46% | 39% | 30% | 31% |
| Relaunch | 1% | 1% | 0% | 1% | 4% |
| TOTAL | 100% | 100% | 100% | 100% | 100% |

Proportion of new product innovations - Savoury snacks



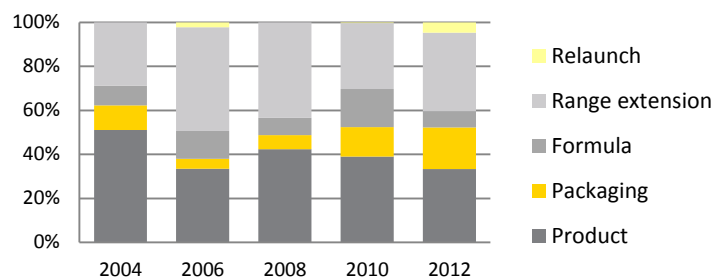
| <i>Proportion of new product innovations</i> | 2004 | 2006 | 2008 | 2010 | 2012 |
|--|------|------|------|------|------|
| Soft-drinks | | | | | |
| Product | 45% | 39% | 44% | 40% | 32% |
| Packaging | 12% | 16% | 20% | 30% | 36% |
| Formula | 0% | 3% | 6% | 6% | 3% |
| Range extension | 42% | 42% | 31% | 23% | 27% |
| Relaunch | 1% | 1% | 0% | 1% | 3% |
| TOTAL | 100% | 100% | 100% | 100% | 100% |

Proportion of new product innovations - Soft-drinks



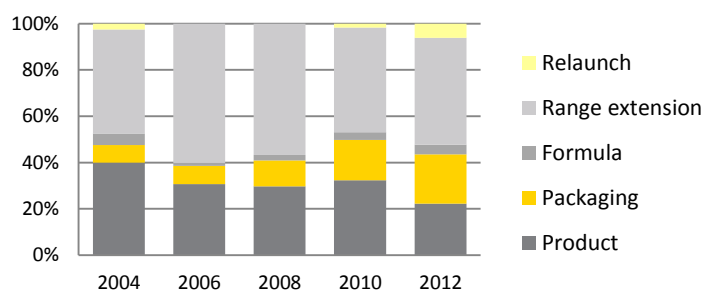
| <i>Proportion of new product innovations</i> | 2004 | 2006 | 2008 | 2010 | 2012 |
|--|------|------|------|------|------|
| Starters/pizzas | | | | | |
| Product | 51% | 33% | 42% | 39% | 33% |
| Packaging | 11% | 5% | 6% | 13% | 19% |
| Formula | 9% | 13% | 8% | 17% | 7% |
| Range extension | 29% | 47% | 43% | 30% | 36% |
| Relaunch | 0% | 2% | 0% | 0% | 5% |
| TOTAL | 100% | 100% | 100% | 100% | 100% |

Proportion of new product innovations -
Starters/pizzas

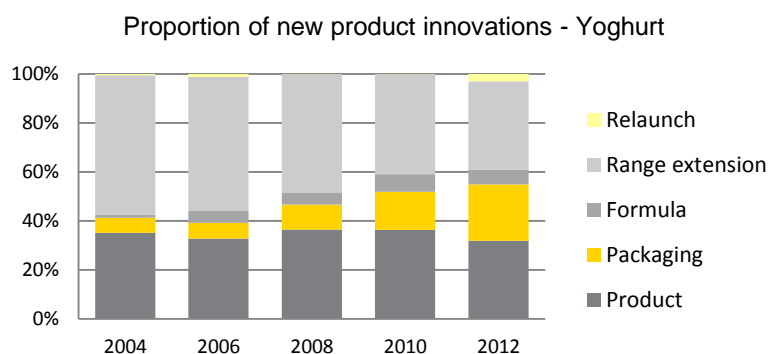


| Proportion of new product innovations Tea | 2004 | 2006 | 2008 | 2010 | 2012 |
|--|-------------|-------------|-------------|-------------|-------------|
| Product | 40% | 31% | 30% | 32% | 22% |
| Packaging | 8% | 8% | 11% | 17% | 21% |
| Formula | 5% | 1% | 2% | 3% | 4% |
| Range extension | 45% | 60% | 57% | 45% | 46% |
| Relaunch | 3% | 0% | 0% | 2% | 6% |
| TOTAL | 100% | 100% | 100% | 100% | 100% |

Proportion of new product innovations - Tea



| Proportion of new product innovations Yoghurt | 2004 | 2006 | 2008 | 2010 | 2012 |
|--|-------------|-------------|-------------|-------------|-------------|
| Product | 35% | 33% | 36% | 36% | 32% |
| Packaging | 6% | 6% | 10% | 15% | 23% |
| Formula | 1% | 5% | 5% | 7% | 6% |
| Range extension | 57% | 55% | 48% | 41% | 36% |
| Relaunch | 1% | 1% | 0% | 0% | 3% |
| TOTAL | 100% | 100% | 100% | 100% | 100% |



11.2.3. Evolution of private labels per Member State (Euromonitor)

Note: Euromonitor bread category covers a wider range of products than fresh prepackaged bread only.

| Percentage of private labels per product category | 2004 | 2006 | 2008 | 2010 | 2012 |
|---|------|------|------|------|------|
| BELGIUM | | | | | |
| Baby food | 0,6 | 0,6 | 0,7 | 1,4 | 1,8 |
| Biscuits | 39,6 | 42,0 | 43,0 | 44,5 | 46,9 |
| Bread | 8,1 | 8,7 | 9,0 | 9,2 | 9,8 |
| Butter/margarine | 18,4 | 18,2 | 18,1 | 18,5 | 18,9 |
| Canned vegetables | 46,3 | 51,5 | 53,0 | 54,2 | 54,4 |
| Cereals | 25,1 | 25,0 | 26,4 | 28,7 | 30,1 |
| Cheese | 19,2 | 19,9 | 19,3 | 19,8 | 20,2 |
| Chocolate | 12,0 | 13,1 | 12,3 | 12,8 | 13,6 |
| Coffee | 18,5 | 18,7 | 19,0 | 18,9 | 18,2 |
| Desserts | 26,4 | 28,6 | 30,3 | 31,8 | 33,0 |
| Edible oil | 34,2 | 40,9 | 43,2 | 45,1 | 47,7 |
| Frozen pizzas/starters | 23,4 | 23,3 | 21,6 | 17,5 | 16,0 |
| Frozen ready cooked meals | 34,7 | 36,5 | 35,9 | 35,0 | 33,5 |
| Frozen vegetables | 40,8 | 45,1 | 46,6 | 46,2 | 44,9 |
| Fruit Juices | 42,7 | 38,0 | 37,5 | 39,0 | 38,3 |
| Ham | 59,1 | 66,4 | 69,8 | 68,9 | 65,9 |
| Ice Cream | 23,0 | 23,0 | 23,4 | 23,7 | 23,9 |
| Milk | 64,1 | 62,7 | 62,4 | 62,2 | 62,2 |
| Mineral water | 15,2 | 16,4 | 16,0 | 16,3 | 16,9 |
| Savoury snacks | 23,2 | 21,9 | 22,1 | 22,6 | 23,1 |
| Soft drinks | 16,0 | 15,7 | 15,1 | 14,5 | 14,0 |
| Tea | 21,5 | 21,5 | 21,9 | 21,4 | 22,6 |
| Yoghurt | 20,8 | 20,2 | 20,0 | 20,5 | 22,9 |

| Percentage of private labels per product category | 2004 | 2006 | 2008 | 2010 | 2012 |
|--|-------------|-------------|-------------|-------------|-------------|
| CZECH REPUBLIC | | | | | |
| Baby food | 0,0 | 0,0 | 0,7 | 1,9 | 2,4 |
| Biscuits | 3,1 | 5,5 | 6,4 | 8,2 | 8,5 |
| Bread | 1,9 | 2,6 | 2,5 | 2,6 | 2,5 |
| Butter/margarine | 11,9 | 13,0 | 14,5 | 14,2 | 14,8 |
| Canned vegetables | 12,3 | 12,7 | 15,7 | 17,3 | 18,5 |
| Cereals | 6,3 | 9,1 | 11,3 | 13,3 | 13,2 |
| Cheese | 3,5 | 3,2 | 5,3 | 5,8 | 7,3 |
| Chocolate | 2,4 | 5,9 | 6,9 | 7,5 | 8,6 |
| Coffee | 3,8 | 3,8 | 5,1 | 5,1 | 5,1 |
| Desserts | 7,9 | 9,2 | 9,9 | 10,1 | 11,4 |
| Edible oil | 20,3 | 23,9 | 28,0 | 30,7 | 35,0 |
| Frozen pizzas/starters | 23,9 | 32,6 | 43,7 | 40,5 | 39,4 |
| Frozen ready cooked meals | 7,0 | 9,4 | 16,0 | 18,4 | 18,9 |
| Frozen vegetables | 14,3 | 17,1 | 19,1 | 21,1 | 21,3 |
| Fruit Juices | 10,8 | 10,8 | 9,6 | 9,0 | 9,5 |
| Ham | 8,7 | 10,0 | 11,0 | 14,0 | 15,0 |
| Ice Cream | 2,8 | 3,0 | 4,0 | 4,1 | 4,7 |
| Milk | 19,6 | 21,3 | 24,0 | 23,6 | 26,2 |
| Mineral water | 4,0 | 4,4 | 4,1 | 3,9 | 3,2 |
| Savoury snacks | 9,4 | 10,5 | 11,7 | 13,7 | 14,2 |
| Soft drinks | 6,6 | 6,9 | 7,2 | 7,6 | 7,6 |
| Tea | 3,8 | 4,4 | 4,7 | 6,1 | 6,9 |
| Yoghurt | 4,7 | 6,5 | 7,8 | 7,3 | 9,8 |

| Percentage of private labels per product category | 2004 | 2006 | 2008 | 2010 | 2012 |
|--|-------------|-------------|-------------|-------------|-------------|
| DENMARK | | | | | |
| Baby food | 0,0 | 0,0 | 0,0 | 0,0 | 0,0 |
| Biscuits | 13,7 | 14,8 | 16,5 | 20,5 | 23,2 |
| Bread | 9,9 | 9,5 | 10,2 | 9,0 | 8,6 |
| Butter/margarine | 5,7 | 6,3 | 7,1 | 9,2 | 12,1 |
| Canned vegetables | 49,6 | 55,0 | 55,6 | 56,2 | 59,5 |
| Cereals | 20,3 | 22,0 | 20,6 | 23,8 | 22,1 |
| Cheese | 10,8 | 11,6 | 12,4 | 13,7 | 14,5 |
| Chocolate | 4,1 | 4,3 | 5,0 | 5,7 | 6,4 |
| Coffee | 12,1 | 10,5 | 11,0 | 11,7 | 14,8 |
| Desserts | 9,4 | 9,8 | 9,0 | 10,4 | 11,6 |
| Edible oil | 26,4 | 27,3 | 31,1 | 32,7 | 36,7 |
| Frozen pizzas/starters | 24,2 | 28,7 | 28,8 | 30,4 | 32,2 |
| Frozen ready cooked meals | 44,0 | 40,0 | 41,0 | 30,0 | 31,0 |
| Frozen vegetables | 51,3 | 54,8 | 56,3 | 56,0 | 59,9 |
| Fruit Juices | 18,2 | 19,8 | 21,1 | 23,7 | 27,1 |
| Ham | 25,9 | 28,9 | 28,6 | 27,7 | 33,4 |
| Ice Cream | 8,3 | 9,4 | 11,7 | 13,2 | 13,6 |
| Milk | 14,5 | 14,5 | 15,7 | 17,8 | 17,7 |
| Mineral water | 12,4 | 13,4 | 13,8 | 12,8 | 13,6 |
| Savoury snacks | 15,4 | 16,4 | 16,9 | 18,7 | 20,0 |
| Soft drinks | 12,5 | 12,3 | 14,4 | 15,2 | 13,2 |
| Tea | 12,9 | 15,6 | 16,2 | 16,5 | 18,3 |
| Yoghurt | 5,1 | 5,0 | 6,1 | 6,4 | 7,3 |

| Percentage of private labels per product category | 2004 | 2006 | 2008 | 2010 | 2012 |
|--|-------------|-------------|-------------|-------------|-------------|
| FINLAND | | | | | |
| Baby food | 1,6 | 0,7 | 0,5 | 0,0 | 0,0 |
| Biscuits | 8,5 | 8,8 | 10,9 | 12,9 | 13,8 |
| Bread | 2,2 | 2,2 | 3,4 | 5,4 | 7,5 |
| Butter/margarine | 5,7 | 6,1 | 7,2 | 7,4 | 8,1 |
| Canned vegetables | 54,4 | 54,3 | 54,4 | 55,9 | 55,9 |
| Cereals | 10,2 | 12,6 | 15,6 | 17,3 | 18,1 |
| Cheese | 10,1 | 11,4 | 11,6 | 13,5 | 15,0 |
| Chocolate | 3,4 | 3,7 | 4,8 | 5,5 | 5,7 |
| Coffee | 5,5 | 5,6 | 6,3 | 10,3 | 21,3 |
| Desserts | 7,0 | 8,0 | 9,8 | 11,5 | 15,3 |
| Edible oil | 40,6 | 41,8 | 41,9 | 44,6 | 45,9 |
| Frozen pizzas/starters | 21,8 | 24,1 | 24,5 | 26,7 | 26,3 |
| Frozen ready cooked meals | 25,1 | 32,0 | 32,8 | 34,9 | 35,2 |
| Frozen vegetables | 33,7 | 40,4 | 41,4 | 42,4 | 43,2 |
| Fruit Juices | 15,3 | 15,9 | 17,4 | 18,3 | 20,3 |
| Ham | 11,8 | 14,4 | 16,6 | 19,2 | 19,6 |
| Ice Cream | 6,8 | 7,1 | 9,1 | 9,9 | 10,8 |
| Milk | 1,5 | 1,8 | 3,0 | 4,8 | 6,7 |
| Mineral water | 5,7 | 8,6 | 8,9 | 10,4 | 11,0 |
| Savoury snacks | 18,3 | 20,5 | 21,5 | 23,3 | 22,8 |
| Soft drinks | 5,6 | 7,2 | 7,5 | 9,2 | 11,2 |
| Tea | 12,0 | 12,1 | 10,3 | 11,8 | 12,4 |
| Yoghurt | 6,3 | 8,1 | 8,9 | 9,7 | 11,1 |

| Percentage of private labels per product category | 2004 | 2006 | 2008 | 2010 | 2012 |
|--|-------------|-------------|-------------|-------------|-------------|
| France | | | | | |
| Baby food | 1,7 | 1,9 | 2,1 | 3,0 | 3,1 |
| Biscuits | 22,7 | 24,3 | 26,1 | 25,4 | 21,4 |
| Bread | 2,4 | 2,7 | 3,2 | 3,6 | 3,8 |
| Butter/margarine | 28,4 | 29,1 | 30,6 | 32,3 | 33,3 |
| Canned vegetables | 44,3 | 44,8 | 44,9 | 45,4 | 45,2 |
| Cereals | 16,0 | 17,4 | 18,5 | 15,3 | 13,5 |
| Cheese | 24,5 | 25,6 | 27,1 | 28,3 | 28,1 |
| Chocolate | 8,0 | 8,1 | 7,9 | 7,8 | 7,2 |
| Coffee | 7,0 | 6,9 | 6,9 | 5,8 | 5,3 |
| Desserts | 25,3 | 27,2 | 29,5 | 29,2 | 29,5 |
| Edible oil | 35,4 | 37,4 | 39,6 | 41,6 | 43,4 |
| Frozen pizzas/starters | 38,3 | 37,8 | 38,1 | 39,1 | 36,8 |
| Frozen ready cooked meals | 48,5 | 46,9 | 52,1 | 51,5 | 51,4 |
| Frozen vegetables | 47,7 | 46,6 | 45,8 | 49,6 | 46,2 |
| Fruit Juices | 24,6 | 25,0 | 24,0 | 22,4 | 21,3 |
| Ham | 33,6 | 34,3 | 35,1 | 39,5 | 38,3 |
| Ice Cream | 16,1 | 16,9 | 16,7 | 16,2 | 14,3 |
| Milk | 36,7 | 38,2 | 40,9 | 40,9 | 42,3 |
| Mineral water | 9,8 | 10,7 | 11,0 | 11,7 | 12,2 |
| Savoury snacks | 27,0 | 28,8 | 31,0 | 33,6 | 32,6 |
| Soft drinks | 10,3 | 10,4 | 9,6 | 9,7 | 9,0 |
| Tea | 12,1 | 16,7 | 16,1 | 16,3 | 15,4 |
| Yoghurt | 14,6 | 15,5 | 16,6 | 17,2 | 17,2 |

| Percentage of private labels per product category | 2004 | 2006 | 2008 | 2010 | 2012 |
|--|-------------|-------------|-------------|-------------|-------------|
| GERMANY | | | | | |
| Baby food | 2,7 | 2,9 | 2,8 | 3,1 | 3,2 |
| Biscuits | 35,5 | 36,5 | 37,4 | 36,8 | 36,9 |
| Bread | 20,6 | 21,1 | 21,2 | 19,9 | 20,1 |
| Butter/margarine | 40,2 | 42,6 | 45,3 | 43,8 | 43,1 |
| Canned vegetables | 54,5 | 55,2 | 55,7 | 62,0 | 61,2 |
| Cereals | 31,9 | 33,4 | 34,9 | 31,4 | 31,2 |
| Cheese | 29,4 | 30,0 | 30,9 | 30,3 | 30,1 |
| Chocolate | 15,9 | 16,7 | 17,2 | 16,1 | 16,0 |
| Coffee | 18,3 | 21,9 | 21,9 | 21,6 | 21,2 |
| Desserts | 36,8 | 39,4 | 39,7 | 39,5 | 40,0 |
| Edible oil | 44,4 | 45,7 | 47,9 | 48,1 | 47,1 |
| Frozen pizzas/starters | 29,8 | 31,8 | 32,5 | 32,8 | 28,5 |
| Frozen ready cooked meals | 35,3 | 38,0 | 42,8 | 40,2 | 35,4 |
| Frozen vegetables | 35,5 | 39,8 | 41,1 | 44,6 | 42,7 |
| Fruit Juices | 29,2 | 31,0 | 30,9 | 31,8 | 31,5 |
| Ham | 69,4 | 69,7 | 69,5 | 72,2 | 71,4 |
| Ice Cream | 21,5 | 22,0 | 22,0 | 21,7 | 21,9 |
| Milk | 57,8 | 62,7 | 65,5 | 65,0 | 66,8 |
| Mineral water | 7,2 | 10,3 | 11,4 | 13,2 | 13,5 |
| Savoury snacks | 24,5 | 26,5 | 35,2 | 37,7 | 36,0 |
| Soft drinks | 19,0 | 20,6 | 19,6 | 18,4 | 18,0 |
| Tea | 19,2 | 19,8 | 19,8 | 19,1 | 18,5 |
| Yoghurt | 22,6 | 22,7 | 22,3 | 22,2 | 23,2 |

| Percentage of private labels per product category | 2004 | 2006 | 2008 | 2010 | 2012 |
|--|-------------|-------------|-------------|-------------|-------------|
| HUNGARY | | | | | |
| Baby food | 1,7 | 1,8 | 2,1 | 1,9 | 2,2 |
| Biscuits | 11,1 | 16,3 | 21,9 | 26,4 | 26,5 |
| Bread | 0,6 | 1,2 | 1,7 | 2,2 | 2,4 |
| Butter/margarine | 10,2 | 11,9 | 13,9 | 18,0 | 20,7 |
| Canned vegetables | 16,0 | 12,9 | 19,0 | 23,5 | 25,2 |
| Cereals | 9,5 | 17,0 | 32,9 | 37,1 | 38,2 |
| Cheese | 3,7 | 5,6 | 9,4 | 10,9 | 11,5 |
| Chocolate | 3,1 | 6,3 | 8,5 | 10,0 | 10,0 |
| Coffee | 4,5 | 5,4 | 7,4 | 7,8 | 8,0 |
| Desserts | 17,1 | 19,6 | 23,3 | 24,7 | 25,3 |
| Edible oil | 25,8 | 28,0 | 31,8 | 33,4 | 33,3 |
| Frozen pizzas/starters | 12,1 | 11,9 | 12,9 | 17,3 | 23,1 |
| Frozen ready cooked meals | 7,4 | 10,3 | 12,7 | 14,6 | 15,9 |
| Frozen vegetables | 11,4 | 28,6 | 35,7 | 39,6 | 42,6 |
| Fruit Juices | 8,4 | 13,3 | 17,1 | 20,9 | 24,8 |
| Ham | 4,1 | 16,4 | 26,1 | 32,3 | 33,5 |
| Ice Cream | 8,7 | 11,4 | 13,6 | 16,2 | 16,9 |
| Milk | 15,0 | 17,9 | 21,0 | 23,3 | 25,7 |
| Mineral water | 3,7 | 4,4 | 9,5 | 14,8 | 12,3 |
| Savoury snacks | 7,8 | 11,7 | 17,0 | 18,2 | 20,7 |
| Soft drinks | 3,7 | 5,7 | 8,1 | 9,8 | 10,5 |
| Tea | 3,6 | 5,0 | 6,5 | 8,3 | 8,3 |
| Yoghurt | 9,7 | 10,7 | 13,2 | 14,6 | 15,0 |

| Percentage of private labels per product category | 2004 | 2006 | 2008 | 2010 | 2012 |
|--|-------------|-------------|-------------|-------------|-------------|
| ITALY | | | | | |
| Baby food | 1,4 | 2,0 | 2,1 | 2,2 | 2,4 |
| Biscuits | 12,7 | 14,4 | 15,4 | 16,0 | 16,7 |
| Bread | 2,4 | 2,6 | 3,0 | 3,5 | 3,9 |
| Butter/margarine | 22,6 | 24,0 | 26,1 | 26,8 | 28,4 |
| Canned vegetables | 37,1 | 38,4 | 39,0 | 39,7 | 41,0 |
| Cereals | 5,5 | 5,5 | 5,8 | 5,7 | 6,1 |
| Cheese | 6,0 | 6,5 | 6,5 | 7,1 | 8,5 |
| Chocolate | 4,0 | 4,1 | 4,1 | 4,7 | 5,1 |
| Coffee | 4,5 | 5,6 | 5,9 | 6,6 | 7,0 |
| Desserts | 7,5 | 7,5 | 7,4 | 10,2 | 11,3 |
| Edible oil | 17,6 | 17,8 | 17,4 | 21,1 | 22,9 |
| Frozen pizzas/starters | 19,4 | 19,3 | 20,3 | 22,1 | 23,8 |
| Frozen ready cooked meals | 22,2 | 23,8 | 25,3 | 27,7 | 31,8 |
| Frozen vegetables | 34,0 | 34,9 | 35,6 | 37,3 | 39,0 |
| Fruit Juices | 17,2 | 17,3 | 17,2 | 17,3 | 17,8 |
| Ham | 23,5 | 24,6 | 24,8 | 26,9 | 28,2 |
| Ice Cream | 4,4 | 4,1 | 4,0 | 4,4 | 4,3 |
| Milk | 9,2 | 11,6 | 14,5 | 18,6 | 20,2 |
| Mineral water | 3,6 | 3,8 | 3,9 | 4,1 | 4,3 |
| Savoury snacks | 12,5 | 12,9 | 13,6 | 14,2 | 14,5 |
| Soft drinks | 5,1 | 5,1 | 5,7 | 6,2 | 7,8 |
| Tea | 4,8 | 6,1 | 6,5 | 6,6 | 7,0 |
| Yoghurt | 8,2 | 8,5 | 9,0 | 10,2 | 10,8 |

| Percentage of private labels per product category | 2004 | 2006 | 2008 | 2010 | 2012 |
|--|-------------|-------------|-------------|-------------|-------------|
| NETHERLANDS | | | | | |
| Baby food | 0,3 | 1,2 | 2,8 | 4,9 | 6,0 |
| Biscuits | 30,7 | 31,8 | 31,5 | 32,4 | 33,2 |
| Bread | 30,7 | 29,4 | 28,6 | 27,6 | 28,0 |
| Butter/margarine | 22,4 | 23,3 | 23,9 | 26,2 | 26,7 |
| Canned vegetables | 32,4 | 33,5 | 34,1 | 34,9 | 34,5 |
| Cereals | 12,0 | 11,9 | 12,0 | 11,7 | 12,3 |
| Cheese | 26,9 | 27,2 | 27,9 | 31,1 | 32,5 |
| Chocolate | 11,8 | 12,6 | 12,5 | 12,9 | 16,9 |
| Coffee | 10,1 | 12,3 | 14,0 | 16,4 | 17,2 |
| Desserts | 22,7 | 25,2 | 24,2 | 25,7 | 29,1 |
| Edible oil | 39,7 | 40,3 | 41,7 | 44,8 | 45,8 |
| Frozen pizzas/starters | 17,3 | 18,3 | 20,2 | 15,6 | 18,1 |
| Frozen ready cooked meals | 32,3 | 39,7 | 42,9 | 46,7 | 46,9 |
| Frozen vegetables | 27,2 | 28,3 | 28,8 | 29,6 | 28,8 |
| Fruit Juices | 16,4 | 18,9 | 20,1 | 22,9 | 23,0 |
| Ham | 84,6 | 86,1 | 87,0 | 90,0 | 88,3 |
| Ice Cream | 9,2 | 10,1 | 10,6 | 12,7 | 13,7 |
| Milk | 39,2 | 39,3 | 38,2 | 41,2 | 43,2 |
| Mineral water | 8,8 | 8,6 | 8,3 | 9,8 | 12,2 |
| Savoury snacks | 23,9 | 26,0 | 25,0 | 26,3 | 25,9 |
| Soft drinks | 14,0 | 13,8 | 14,2 | 15,2 | 15,4 |
| Tea | 12,8 | 13,6 | 14,2 | 13,9 | 16,3 |
| Yoghurt | 20,8 | 20,7 | 20,7 | 23,1 | 26,7 |

| Percentage of private labels per product category | 2004 | 2006 | 2008 | 2010 | 2012 |
|--|-------------|-------------|-------------|-------------|-------------|
| POLAND | | | | | |
| Baby food | 0,0 | 0,0 | 0,0 | 0,0 | 0,0 |
| Biscuits | 2,2 | 4,1 | 4,3 | 4,9 | 12,7 |
| Bread | 2,0 | 2,4 | 2,6 | 3,2 | 8,7 |
| Butter/margarine | 6,3 | 6,8 | 7,1 | 9,4 | 17,6 |
| Canned vegetables | 5,8 | 6,3 | 6,7 | 6,7 | 6,4 |
| Cereals | 6,7 | 7,8 | 7,9 | 8,6 | 16,1 |
| Cheese | 8,4 | 9,6 | 11,6 | 14,6 | 18,9 |
| Chocolate | 3,1 | 4,6 | 6,0 | 7,4 | 12,0 |
| Coffee | 0,7 | 0,7 | 0,8 | 0,7 | 0,8 |
| Desserts | 8,2 | 9,3 | 10,2 | 11,6 | 15,6 |
| Edible oil | 6,6 | 7,4 | 7,5 | 8,7 | 16,0 |
| Frozen pizzas/starters | 13,1 | 14,6 | 14,5 | 14,5 | 14,7 |
| Frozen ready cooked meals | 1,8 | 2,3 | 2,5 | 2,9 | 3,5 |
| Frozen vegetables | 15,5 | 16,5 | 16,7 | 17,5 | 18,4 |
| Fruit Juices | 4,9 | 5,3 | 5,5 | 6,7 | 6,0 |
| Ham | 8,4 | 7,6 | 7,5 | 7,3 | 7,4 |
| Ice Cream | 0,9 | 1,3 | 1,4 | 1,7 | 4,2 |
| Milk | 6,8 | 7,5 | 10,3 | 15,8 | 22,7 |
| Mineral water | 5,6 | 6,6 | 6,3 | 8,1 | 10,9 |
| Savoury snacks | 5,8 | 7,0 | 7,6 | 8,3 | 9,0 |
| Soft drinks | 2,5 | 3,8 | 6,2 | 7,1 | 8,3 |
| Tea | 4,9 | 5,7 | 6,1 | 8,2 | 12,4 |
| Yoghurt | 6,0 | 6,7 | 7,2 | 9,6 | 15,2 |

| Percentage of private labels per product category | 2004 | 2006 | 2008 | 2010 | 2012 |
|--|-------------|-------------|-------------|-------------|-------------|
| Portugal | | | | | |
| Baby food | 6,2 | 6,0 | 5,8 | 6,3 | 6,4 |
| Biscuits | 28,1 | 32,3 | 36,4 | 40,2 | 41,5 |
| Bread | 2,7 | 4,1 | 4,6 | 5,1 | 5,2 |
| Butter/margarine | 15,1 | 16,4 | 18,0 | 21,1 | 22,4 |
| Canned vegetables | 42,1 | 47,6 | 54,8 | 60,7 | 64,3 |
| Cereals | 13,6 | 16,1 | 19,6 | 24,7 | 25,5 |
| Cheese | 9,0 | 11,7 | 16,2 | 20,7 | 21,8 |
| Chocolate | 11,1 | 10,5 | 12,4 | 13,0 | 13,1 |
| Coffee | 9,7 | 10,7 | 11,3 | 10,9 | 15,6 |
| Desserts | 11,6 | 15,1 | 20,6 | 23,6 | 26,3 |
| Edible oil | 22,9 | 27,4 | 32,2 | 37,7 | 37,9 |
| Frozen pizzas/starters | 29,4 | 30,7 | 40,7 | 46,4 | 51,8 |
| Frozen ready cooked meals | 43,5 | 44,5 | 46,0 | 53,1 | 57,0 |
| Frozen vegetables | 36,1 | 41,5 | 50,5 | 53,8 | 59,6 |
| Fruit Juices | 17,2 | 20,9 | 25,3 | 28,3 | 30,0 |
| Ham | 23,8 | 26,2 | 33,1 | 38,2 | 43,6 |
| Ice Cream | 10,3 | 13,1 | 14,6 | 15,9 | 17,0 |
| Milk | 16,8 | 18,1 | 20,3 | 23,0 | 29,1 |
| Mineral water | 6,3 | 10,8 | 14,4 | 22,6 | 26,8 |
| Savoury snacks | 19,2 | 19,6 | 23,5 | 26,3 | 31,5 |
| Soft drinks | 7,2 | 9,3 | 17,8 | 26,6 | 29,6 |
| Tea | 5,1 | 5,0 | 6,4 | 8,5 | 10,2 |
| Yoghurt | 9,9 | 14,5 | 17,5 | 22,8 | 25,0 |

| Percentage of private labels per product category | 2004 | 2006 | 2008 | 2010 | 2012 |
|---|------|------|------|------|------|
| ROMANIA | | | | | |
| Baby food | 0,0 | 0,0 | 0,0 | 0,0 | 0,0 |
| Biscuits | 0,0 | 0,0 | 0,0 | 0,0 | 0,0 |
| Bread | 0,0 | 0,0 | 0,0 | 0,0 | 0,2 |
| Butter/margarine | 0,0 | 0,0 | 0,0 | 0,0 | 0,0 |
| Canned vegetables | 0,0 | 0,0 | 0,0 | 0,0 | 0,0 |
| Cereals | 0,0 | 0,0 | 0,0 | 0,0 | 0,0 |
| Cheese | 0,0 | 0,0 | 0,0 | 0,0 | 0,0 |
| Chocolate | 0,0 | 0,0 | 0,0 | 0,0 | 0,1 |
| Coffee | 0,0 | 0,0 | 0,0 | 0,0 | 0,0 |
| Desserts | 0,0 | 0,0 | 0,0 | 0,0 | 5,3 |
| Edible oil | 2,2 | 3,0 | 3,9 | 8,1 | 12,6 |
| Frozen pizzas/starters | 22,7 | 28,1 | 28,3 | 30,8 | 33,9 |
| Frozen ready cooked meals | 0,0 | 10,0 | 11,0 | 10,1 | 9,4 |
| Frozen vegetables | 0,0 | 0,0 | 0,0 | 0,0 | 0,0 |
| Fruit Juices | 0,0 | 0,1 | 0,1 | 0,2 | 0,2 |
| Ham | 33,6 | 37,8 | 34,7 | 33,7 | 34,1 |
| Ice Cream | 0,0 | 0,0 | 0,0 | 0,0 | 0,1 |
| Milk | 0,0 | 0,0 | 0,0 | 0,0 | 0,5 |
| Mineral water | 1,1 | 2,1 | 2,6 | 3,9 | 4,8 |
| Savoury snacks | 0,0 | 0,0 | 0,0 | 0,0 | 0,0 |
| Soft drinks | 0,0 | 0,0 | 0,2 | 0,7 | 1,5 |
| Tea | 0,0 | 0,0 | 0,0 | 0,0 | 0,0 |
| Yoghurt | 0,0 | 0,0 | 0,0 | 0,0 | 2,3 |

| Percentage of private labels per product category | 2004 | 2006 | 2008 | 2010 | 2012 |
|---|------|------|------|------|------|
| SPAIN | | | | | |
| Baby food | 0,0 | 0,2 | 0,6 | 1,2 | 3,7 |
| Biscuits | 19,8 | 21,9 | 24,5 | 29,1 | 34,4 |
| Bread | 2,9 | 3,3 | 3,9 | 5,7 | 7,4 |
| Butter/margarine | 25,8 | 26,9 | 29,9 | 34,2 | 36,9 |
| Canned vegetables | 36,8 | 43,4 | 45,2 | 46,6 | 47,4 |
| Cereals | 20,6 | 23,0 | 25,5 | 29,7 | 37,8 |
| Cheese | 9,2 | 11,0 | 17,0 | 20,4 | 23,2 |
| Chocolate | 14,0 | 14,3 | 15,6 | 19,2 | 20,0 |
| Coffee | 17,9 | 19,0 | 17,7 | 21,4 | 20,3 |
| Desserts | 23,2 | 24,8 | 27,9 | 31,0 | 34,6 |
| Edible oil | 40,8 | 43,3 | 48,6 | 49,6 | 54,4 |
| Frozen pizzas/starters | 29,3 | 29,5 | 30,8 | 32,0 | 33,6 |
| Frozen ready cooked meals | 29,2 | 31,8 | 35,1 | 39,9 | 42,3 |
| Frozen vegetables | 55,7 | 58,2 | 59,1 | 59,4 | 59,8 |
| Fruit Juices | 28,9 | 30,6 | 32,9 | 34,4 | 37,4 |
| Ham | 20,5 | 23,7 | 27,0 | 44,7 | 52,9 |
| Ice Cream | 9,0 | 9,7 | 14,0 | 18,8 | 26,9 |
| Milk | 22,9 | 28,1 | 32,9 | 36,9 | 46,2 |
| Mineral water | 10,9 | 12,3 | 17,0 | 21,5 | 23,4 |
| Savoury snacks | 23,9 | 25,3 | 31,9 | 34,9 | 36,1 |
| Soft drinks | 4,5 | 4,9 | 5,6 | 9,2 | 11,1 |
| Tea | 12,0 | 12,9 | 12,9 | 19,8 | 24,0 |
| Yoghurt | 14,9 | 16,1 | 19,2 | 21,3 | 24,7 |

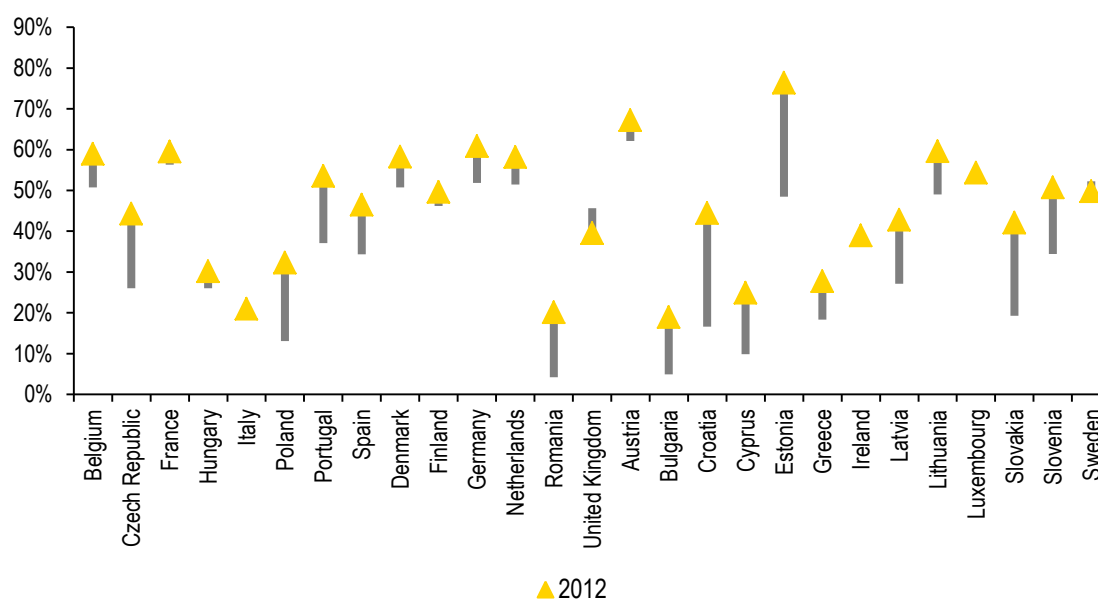
| Percentage of private labels per product category | 2004 | 2006 | 2008 | 2010 | 2012 |
|---|------|------|------|------|------|
| UNITED KINGDOM | | | | | |
| Baby food | 1,1 | 1,0 | 0,6 | 0,7 | 0,7 |
| Biscuits | 22,1 | 22,1 | 21,9 | 21,1 | 21,3 |
| Bread | 11,8 | 14,2 | 14,7 | 14,0 | 14,3 |
| Butter/margarine | 15,4 | 14,7 | 19,2 | 18,2 | 17,4 |
| Canned vegetables | 51,5 | 48,0 | 43,7 | 39,4 | 39,8 |
| Cereals | 20,6 | 20,1 | 20,7 | 21,0 | 21,8 |
| Cheese | 37,7 | 36,6 | 34,4 | 32,3 | 31,5 |
| Chocolate | 7,7 | 7,5 | 7,7 | 7,9 | 8,2 |
| Coffee | 12,9 | 13,8 | 14,4 | 16,3 | 19,8 |
| Desserts | 34,8 | 35,6 | 36,8 | 36,7 | 36,6 |
| Edible oil | 55,1 | 56,8 | 54,8 | 51,7 | 46,6 |
| Frozen pizzas/starters | 38,2 | 35,3 | 37,2 | 39,9 | 40,4 |
| Frozen ready cooked meals | 39,5 | 40,1 | 41,6 | 44,3 | 46,1 |
| Frozen vegetables | 46,9 | 46,4 | 47,9 | 48,6 | 47,8 |
| Fruit Juices | 36,5 | 36,2 | 36,2 | 36,7 | 36,0 |
| Ham | 52,6 | 54,2 | 58,0 | 59,2 | 62,7 |
| Ice Cream | 22,1 | 23,0 | 22,6 | 24,9 | 24,9 |
| Milk | 65,5 | 66,1 | 66,4 | 66,3 | 66,5 |
| Mineral water | 28,4 | 28,2 | 31,6 | 30,3 | 27,8 |
| Savoury snacks | 23,5 | 26,1 | 28,5 | 30,4 | 32,3 |
| Soft drinks | 11,6 | 11,4 | 10,9 | 9,6 | 8,9 |
| Tea | 17,7 | 17,3 | 14,6 | 15,6 | 15,1 |
| Yoghurt | 17,3 | 15,4 | 14,4 | 13,8 | 14,4 |

11.2.4. Retail concentration

| Retailer concentration - Retail Group Level - C5 Edible grocery | 2004 | 2006 | 2008 | 2010 | 2012 CAGR | |
|---|------|------|------|------|-----------|-----|
| Belgium | 51% | 55% | 57% | 58% | 59% | 2% |
| Czech Republic | 26% | 32% | 38% | 41% | 44% | 7% |
| France | 56% | 57% | 58% | 59% | 60% | 1% |
| Hungary | 26% | 29% | 30% | 30% | 30% | 2% |
| Italy | 19% | 19% | 20% | 21% | 21% | 1% |
| Poland | 13% | 16% | 23% | 28% | 32% | 12% |
| Portugal | 37% | 38% | 44% | 49% | 54% | 5% |
| Spain | 34% | 38% | 45% | 45% | 46% | 4% |
| Denmark | 51% | 50% | 54% | 57% | 58% | 2% |
| Finland | 46% | 43% | 45% | 48% | 50% | 1% |
| Germany | 52% | 57% | 57% | 60% | 61% | 2% |
| Netherlands | 51% | 47% | 46% | 53% | 58% | 2% |
| Romania | 4% | 7% | 10% | 15% | 20% | 22% |
| United Kingdom | 46% | 44% | 42% | 42% | 39% | -2% |
| Average 14 MS | 37% | 38% | 41% | 43% | 45% | 4% |
| Austria | 62% | 62% | 66% | 66% | 67% | 1% |
| Bulgaria | 5% | 7% | 10% | 17% | 19% | 18% |
| Croatia | 17% | 20% | 31% | 40% | 44% | 13% |
| Cyprus | 10% | 14% | 17% | 21% | 25% | 12% |
| Estonia | 48% | 59% | 73% | 71% | 76% | 6% |
| Greece | 18% | 21% | 25% | 26% | 28% | 6% |
| Ireland | 36% | 37% | 37% | 37% | 39% | 1% |
| Latvia | 27% | 33% | 39% | 43% | 43% | 6% |
| Lithuania | 49% | 49% | 53% | 58% | 60% | 3% |
| Luxembourg | 54% | 55% | 55% | 56% | 54% | 0% |
| Slovakia | 19% | 31% | 39% | 41% | 42% | 10% |
| Slovenia | 34% | 43% | 48% | 51% | 51% | 5% |
| Sweden | 52% | 51% | 48% | 49% | 50% | 0% |

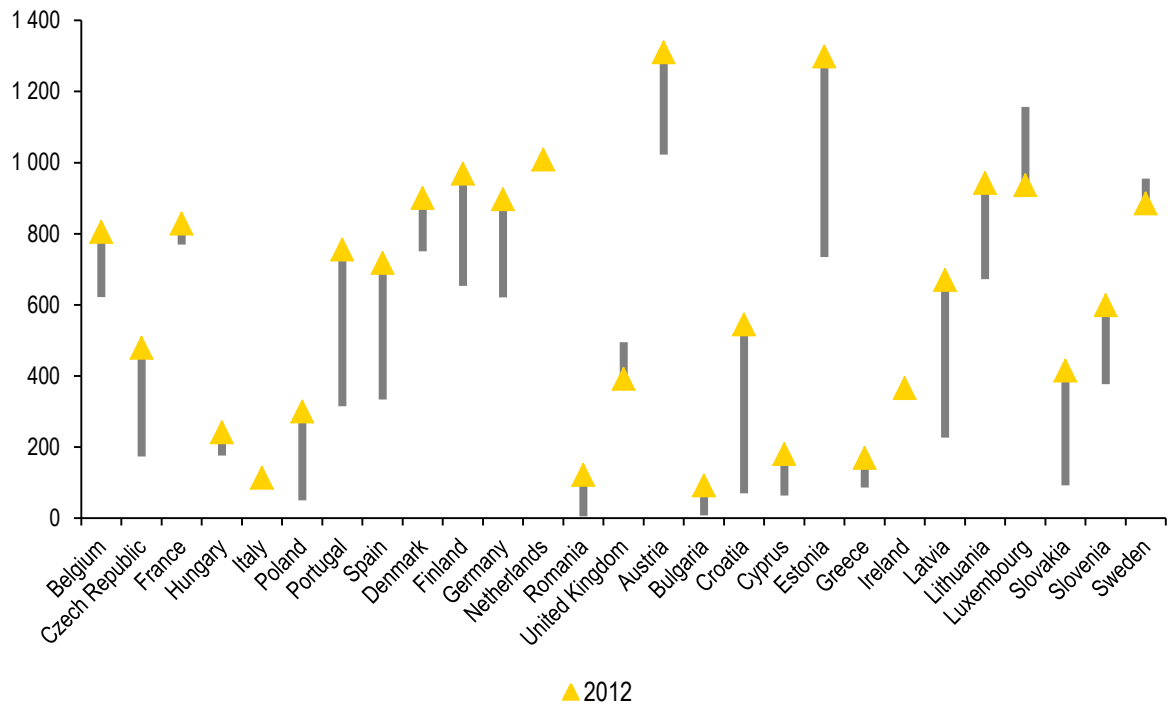
Source: Planet Retail data

Retailer concentration - Retail Group Level - C5 Edible Grocery
2004 - 2012 Evolution



| Retailer concentration - Retail Group Level - HHI edible grocery | 2004 | 2006 | 2008 | 2010 | 2012 CAGR | |
|--|------|------|------|------|-----------|-----|
| Belgium | 622 | 720 | 738 | 776 | 805 | 3% |
| Czech Republic | 173 | 243 | 9 | 390 | 479 | 14% |
| France | 770 | 785 | 808 | 840 | 828 | 1% |
| Hungary | 176 | 211 | 240 | 241 | 241 | 4% |
| Italy | 88 | 91 | 103 | 114 | 113 | 3% |
| Poland | 50 | 65 | 126 | 198 | 300 | 25% |
| Portugal | 314 | 339 | 468 | 633 | 756 | 12% |
| Spain | 333 | 422 | 587 | 625 | 717 | 10% |
| Denmark | 751 | 716 | 846 | 886 | 900 | 2% |
| Finland | 654 | 699 | 773 | 872 | 968 | 5% |
| Germany | 621 | 724 | 731 | 852 | 897 | 5% |
| Netherlands | 986 | 848 | 816 | 817 | 1009 | 0% |
| Romania | 5 | 13 | 26 | 53 | 121 | 49% |
| United Kingdom | 495 | 483 | 460 | 438 | 391 | -3% |
| Average 14 MS | 431 | 454 | 481 | 553 | 609 | 9% |
| Austria | 1022 | 1060 | 1276 | 1271 | 1310 | 3% |
| Bulgaria | 7 | 13 | 24 | 65 | 92 | 38% |
| Croatia | 70 | 111 | 265 | 429 | 545 | 29% |
| Cyprus | 64 | 76 | 102 | 153 | 180 | 14% |
| Estonia | 734 | 892 | 1235 | 1144 | 1298 | 7% |
| Greece | 86 | 106 | 153 | 142 | 169 | 9% |
| Ireland | 374 | 380 | 387 | 353 | 365 | 0% |
| Latvia | 227 | 393 | 559 | 651 | 669 | 14% |
| Lithuania | 673 | 658 | 681 | 872 | 943 | 4% |
| Luxembourg | 1156 | 1127 | 1059 | 990 | 936 | -3% |
| Slovakia | 93 | 211 | 344 | 378 | 415 | 21% |
| Slovenia | 377 | 547 | 574 | 625 | 598 | 6% |
| Sweden | 955 | 896 | 841 | 868 | 885 | -1% |

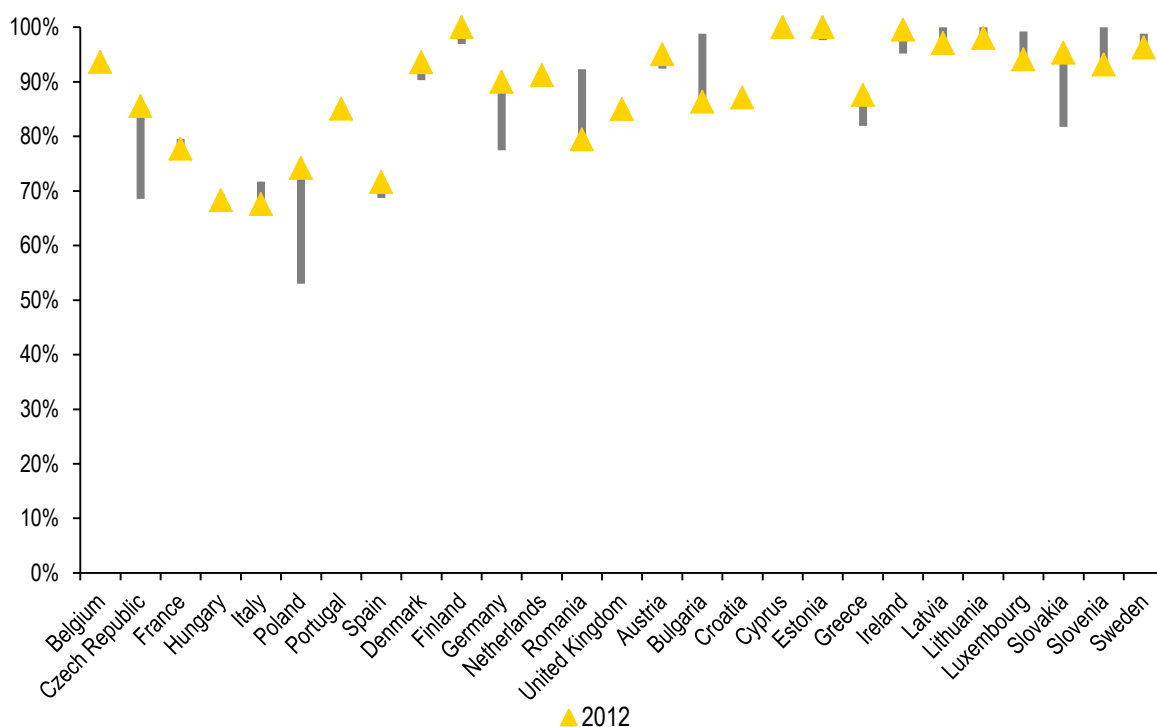
Source: Planet Retail data

Retailer concentration - Retail Group Level - HHI Edible Grocery
2004 - 2012 Evolution

| Retailer concentration - Retail Group Level - C5 Modern Retail | 2004 | 2006 | 2008 | 2010 | 2012 CAGR | |
|--|------|------|------|------|-----------|-----|
| Belgium | 94% | 94% | 93% | 93% | 94% | 0% |
| Czech Republic | 69% | 76% | 85% | 85% | 85% | 3% |
| France | 79% | 79% | 79% | 79% | 78% | 0% |
| Hungary | 69% | 70% | 71% | 67% | 68% | 0% |
| Italy | 72% | 70% | 69% | 69% | 68% | -1% |
| Poland | 53% | 59% | 72% | 72% | 74% | 4% |
| Portugal | 86% | 85% | 86% | 85% | 85% | 0% |
| Spain | 69% | 70% | 76% | 75% | 72% | 1% |
| Denmark | 90% | 93% | 92% | 94% | 94% | 0% |
| Finland | 97% | 100% | 100% | 100% | 100% | 0% |
| Germany | 77% | 85% | 86% | 90% | 90% | 2% |
| Netherlands | 89% | 88% | 78% | 84% | 91% | 0% |
| Romania | 92% | 81% | 77% | 76% | 79% | -2% |
| United Kingdom | 86% | 83% | 83% | 85% | 85% | 0% |
| Average 14 MS | 80% | 81% | 82% | 82% | 83% | 1% |
| Austria | 92% | 91% | 95% | 95% | 95% | 0% |
| Bulgaria | 99% | 90% | 92% | 86% | 86% | -2% |
| Croatia | 85% | 78% | 78% | 87% | 87% | 0% |
| Cyprus | 100% | 100% | 100% | 100% | 100% | 0% |
| Estonia | 98% | 100% | 100% | 100% | 100% | 0% |
| Greece | 82% | 82% | 84% | 86% | 88% | 1% |
| Ireland | 95% | 94% | 94% | 95% | 100% | 1% |
| Latvia | 100% | 98% | 99% | 97% | 97% | 0% |
| Lithuania | 100% | 92% | 100% | 99% | 98% | 0% |
| Luxembourg | 99% | 99% | 96% | 94% | 94% | -1% |
| Slovakia | 82% | 90% | 94% | 95% | 95% | 2% |
| Slovenia | 100% | 98% | 94% | 93% | 93% | -1% |
| Sweden | 99% | 97% | 96% | 96% | 96% | 0% |

Source: Planet Retail data

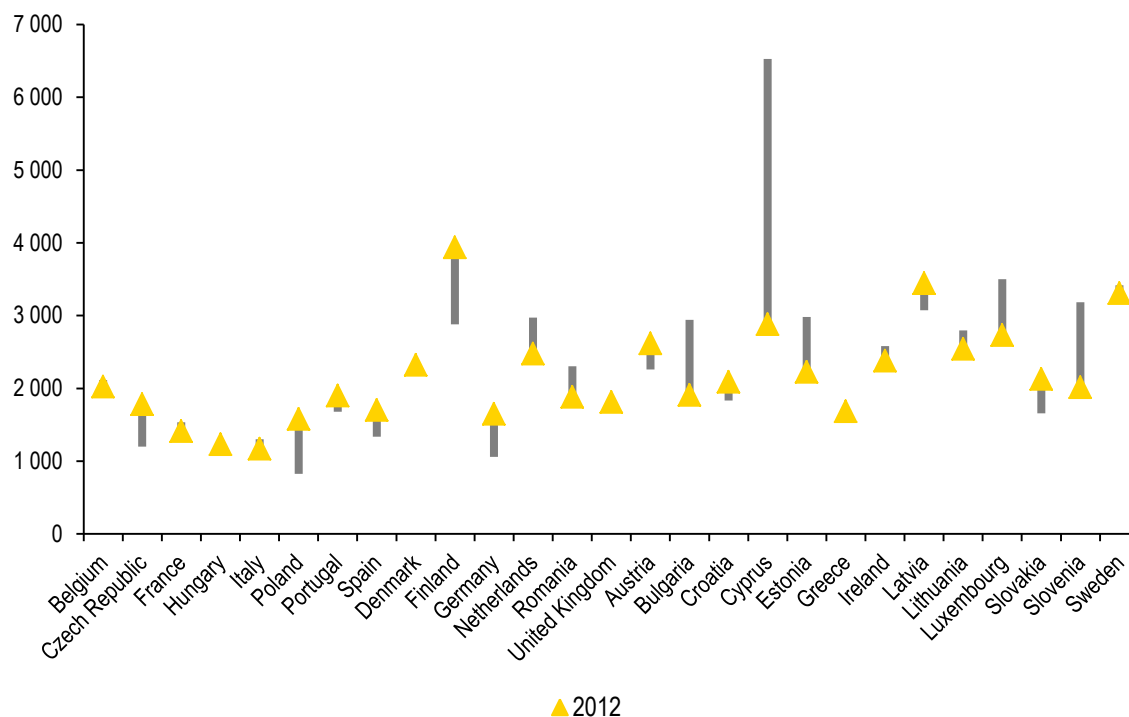
Retailer concentration - Retail Group Level - C5 Modern Retail
2004 - 2012 Evolution



| Retailer concentration - Retail Group Level - HHI Modern Retail | 2004 | 2006 | 2008 | 2010 | 2012 | CAGR |
|---|--------------|--------------|--------------|--------------|--------------|-----------|
| Belgium | 2 116 | 2 062 | 1 992 | 1 998 | 2 023 | -1% |
| Czech Republic | 1 199 | 1 387 | 1 690 | 1 701 | 1 779 | 5% |
| France | 1 533 | 1 528 | 1 492 | 1 482 | 1 410 | -1% |
| Hungary | 1 251 | 1 243 | 1 308 | 1 198 | 1 229 | 0% |
| Italy | 1 299 | 1 220 | 1 188 | 1 192 | 1 170 | -1% |
| Poland | 826 | 926 | 1 228 | 1 353 | 1 580 | 8% |
| Portugal | 1 681 | 1 652 | 1 830 | 1 888 | 1 901 | 2% |
| Spain | 1 335 | 1 422 | 1 686 | 1 735 | 1 701 | 3% |
| Denmark | 2374 | 2481 | 2458 | 2385 | 2320 | 0% |
| Finland | 2881 | 3736 | 3751 | 3862 | 3935 | 4% |
| Germany | 1059 | 1266 | 1307 | 1604 | 1648 | 6% |
| Netherlands | 2972 | 2893 | 2279 | 2043 | 2478 | -2% |
| Romania | 2302 | 1572 | 1394 | 1361 | 1880 | -3% |
| United Kingdom | 1749 | 1745 | 1793 | 1817 | 1811 | 0% |
| Average 14 MS | 1 756 | 1 795 | 1 814 | 1 830 | 1 919 | 1% |
| Austria | 2262 | 2263 | 2615 | 2598 | 2617 | 2% |
| Bulgaria | 2943 | 2047 | 1959 | 1646 | 1907 | -5% |
| Croatia | 1834 | 1622 | 1620 | 1986 | 2088 | 2% |
| Cyprus | 6530 | 4049 | 3634 | 3572 | 2879 | -10% |
| Estonia | 2981 | 2522 | 2308 | 2246 | 2225 | -4% |
| Greece | 1708 | 1648 | 1681 | 1603 | 1682 | 0% |
| Ireland | 2582 | 2511 | 2451 | 2294 | 2381 | -1% |
| Latvia | 3076 | 3460 | 3590 | 3244 | 3443 | 1% |
| Lithuania | 2796 | 2282 | 2451 | 2525 | 2543 | -1% |
| Luxembourg | 3499 | 3343 | 2998 | 2704 | 2730 | -3% |
| Slovakia | 1659 | 1772 | 1964 | 2035 | 2127 | 3% |
| Slovenia | 3183 | 2838 | 2216 | 2077 | 2015 | -6% |
| Sweden | 3418 | 3261 | 3386 | 3359 | 3305 | 0% |

Source: Planet Retail data

Retailer concentration - Retail Group Level - HHI Modern Retail
2004 - 2012 Evolution

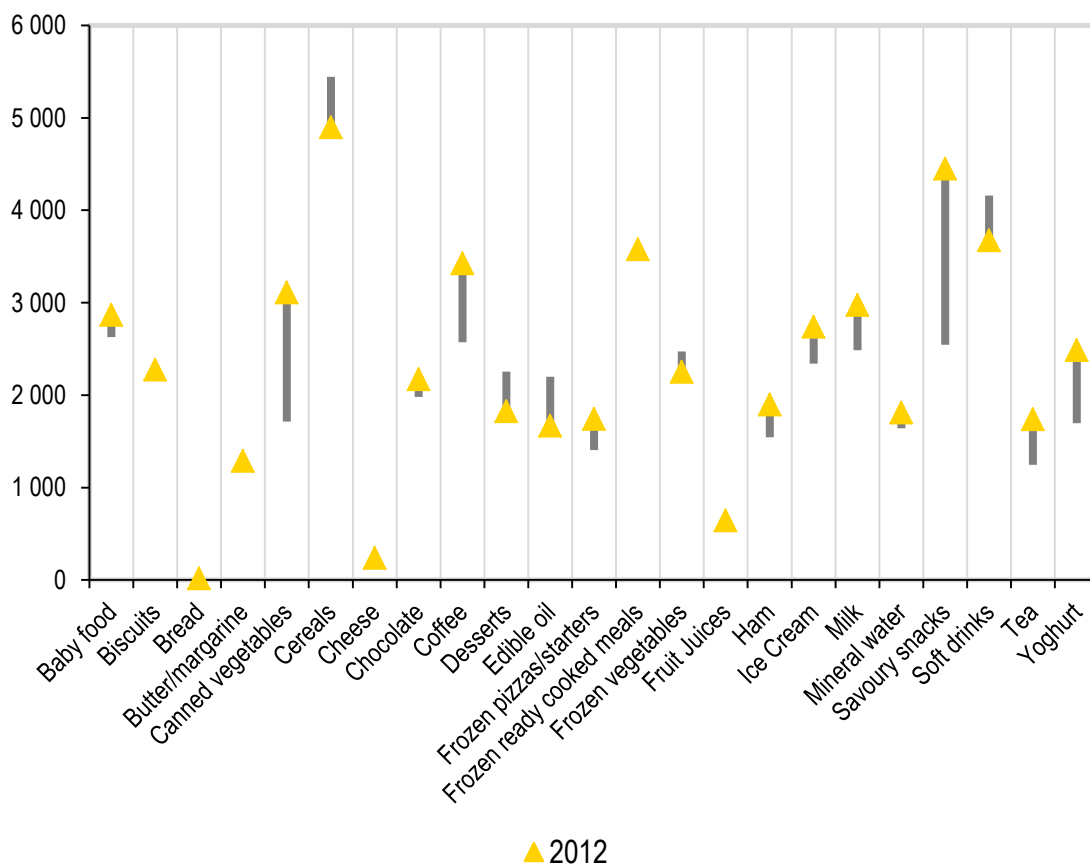


11.2.5. Supplier concentration

| Belgium | 2004 | 2006 | 2008 | 2010 | 2012 | CAGR 2004-2012 |
|---------------------------|---------------|---------------|---------------|---------------|---------------|----------------|
| Baby food | 2 628 | 2 626 | 2 860 | 2 830 | 2 867 | 1,1% |
| Biscuits | 2 189 | 2 319 | 1 745 | 2 256 | 2 275 | 0,5% |
| Bread | 12 | 15 | 16 | 16 | 16 | 4,0% |
| Butter/margarine | 1 310 | 1 344 | 1 228 | 1 220 | 1 289 | -0,2% |
| Canned vegetables | 1 713 | 2 190 | 2 643 | 3 078 | 3 109 | 7,7% |
| Cereals | 5 443 | 5 465 | 5 198 | 5 141 | 4 895 | -1,3% |
| Cheese | 208 | 249 | 264 | 273 | 238 | 1,7% |
| Chocolate | 1 981 | 1 923 | 2 157 | 2 108 | 2 171 | 1,2% |
| Coffee | 2 574 | 2 569 | 2 967 | 3 248 | 3 423 | 3,6% |
| Desserts | 2 254 | 1 938 | 1 922 | 1 841 | 1 824 | -2,6% |
| Edible oil | 2 198 | 2 075 | 1 609 | 1 667 | 1 668 | -3,4% |
| Frozen pizzas/starters | 1 407 | 1 791 | 1 489 | 1 795 | 1 740 | 2,7% |
| Frozen ready cooked meals | 3 496 | 3 975 | 4 223 | 4 247 | 3 577 | 0,3% |
| Frozen vegetables | 2 472 | 2 526 | 2 486 | 2 477 | 2 250 | -1,2% |
| Fruit Juices | 665 | 683 | 688 | 688 | 643 | -0,4% |
| Ham/Delicatessen | 1 545 | 1 890 | 2 218 | 2 159 | 1 897 | 2,6% |
| Ice Cream | 2 341 | 2 505 | 2 681 | 2 908 | 2 738 | 2,0% |
| Milk | 2 486 | 2 345 | 3 295 | 3 051 | 2 976 | 2,3% |
| Mineral water | 1 643 | 1 521 | 1 523 | 1 680 | 1 810 | 1,2% |
| Savoury snacks | 2 544 | 3 627 | 4 123 | 4 349 | 4 448 | 7,2% |
| Soft drinks | 4 159 | 4 076 | 3 895 | 3 688 | 3 675 | -1,5% |
| Tea | 1 245 | 1 367 | 1 457 | 1 490 | 1 738 | 4,3% |
| Yoghurt | 1 697 | 2 495 | 2 781 | 2 915 | 2 485 | 4,9% |
| Average | 2096,1 | 2239,7 | 2324,7 | 2396,8 | 2337,1 | |

Source: EY analysis based on Euromonitor Passport data

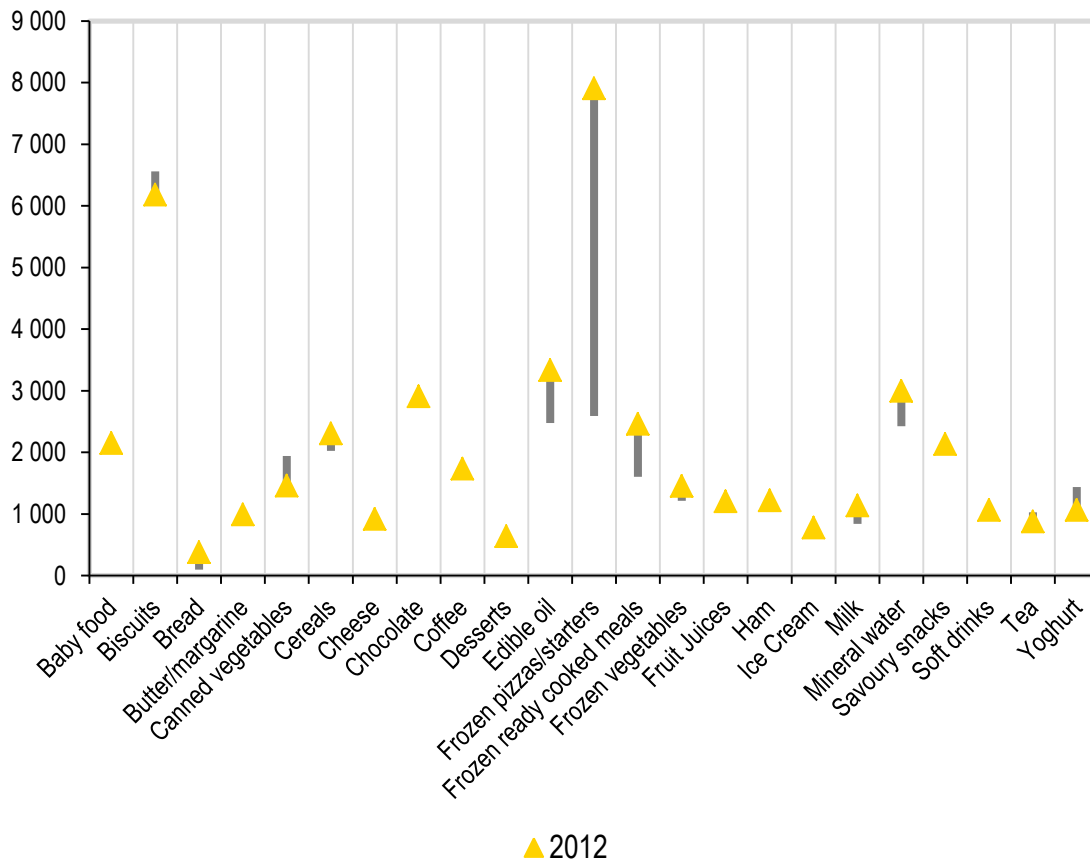
Supplier concentration - Belgium - HHI (brand only)
2004 - 2012 Evolution



| Czech Republic | 2004 | 2006 | 2008 | 2010 | 2012 | CAGR 2004-2012 |
|---------------------------|---------------|---------------|---------------|---------------|---------------|----------------|
| Baby food | 2 156 | 2 179 | 2 139 | 2 172 | 2 152 | 0,0% |
| Biscuits | 6 563 | 6 252 | 6 386 | 6 188 | 6 184 | -0,7% |
| Bread | 98 | 165 | 227 | 227 | 376 | 18,4% |
| Butter/margarine | 929 | 1 043 | 1 027 | 993 | 991 | 0,8% |
| Canned vegetables | 1 941 | 1 492 | 1 593 | 1 551 | 1 457 | -3,5% |
| Cereals | 2 026 | 2 073 | 2 309 | 2 354 | 2 308 | 1,6% |
| Cheese | 789 | 792 | 856 | 891 | 920 | 1,9% |
| Chocolate | 2 857 | 2 726 | 2 876 | 2 874 | 2 909 | 0,2% |
| Coffee | 1 783 | 1 702 | 1 649 | 1 752 | 1 737 | -0,3% |
| Desserts | 501 | 542 | 546 | 566 | 640 | 3,1% |
| Edible oil | 2 479 | 2 822 | 3 030 | 3 023 | 3 333 | 3,8% |
| Frozen pizzas/starters | 2 590 | 3 960 | 8 743 | 8 502 | 7 904 | 15,0% |
| Frozen ready cooked meals | 1 604 | 1 825 | 1 760 | 1 963 | 2 460 | 5,5% |
| Frozen vegetables | 1 217 | 1 371 | 1 421 | 1 456 | 1 453 | 2,2% |
| Fruit Juices | 1 026 | 1 018 | 1 116 | 1 196 | 1 203 | 2,0% |
| Ham/Delicatessen | 1 034 | 1 165 | 1 323 | 1 276 | 1 222 | 2,1% |
| Ice Cream | 720 | 678 | 775 | 777 | 777 | 1,0% |
| Milk | 839 | 916 | 996 | 951 | 1 139 | 3,9% |
| Mineral water | 2 425 | 3 717 | 3 514 | 3 193 | 2 998 | 2,7% |
| Savoury snacks | 1 985 | 1 900 | 1 776 | 2 357 | 2 137 | 0,9% |
| Soft drinks | 1 080 | 1 063 | 951 | 1 009 | 1 066 | -0,2% |
| Tea | 1 029 | 895 | 820 | 848 | 877 | -2,0% |
| Yoghurt | 1 439 | 1 121 | 1 139 | 1 185 | 1 064 | -3,7% |
| Average | 1700,4 | 1800,8 | 2042,2 | 2056,7 | 2056,8 | |

Source: EY analysis based on Euromonitor Passport data

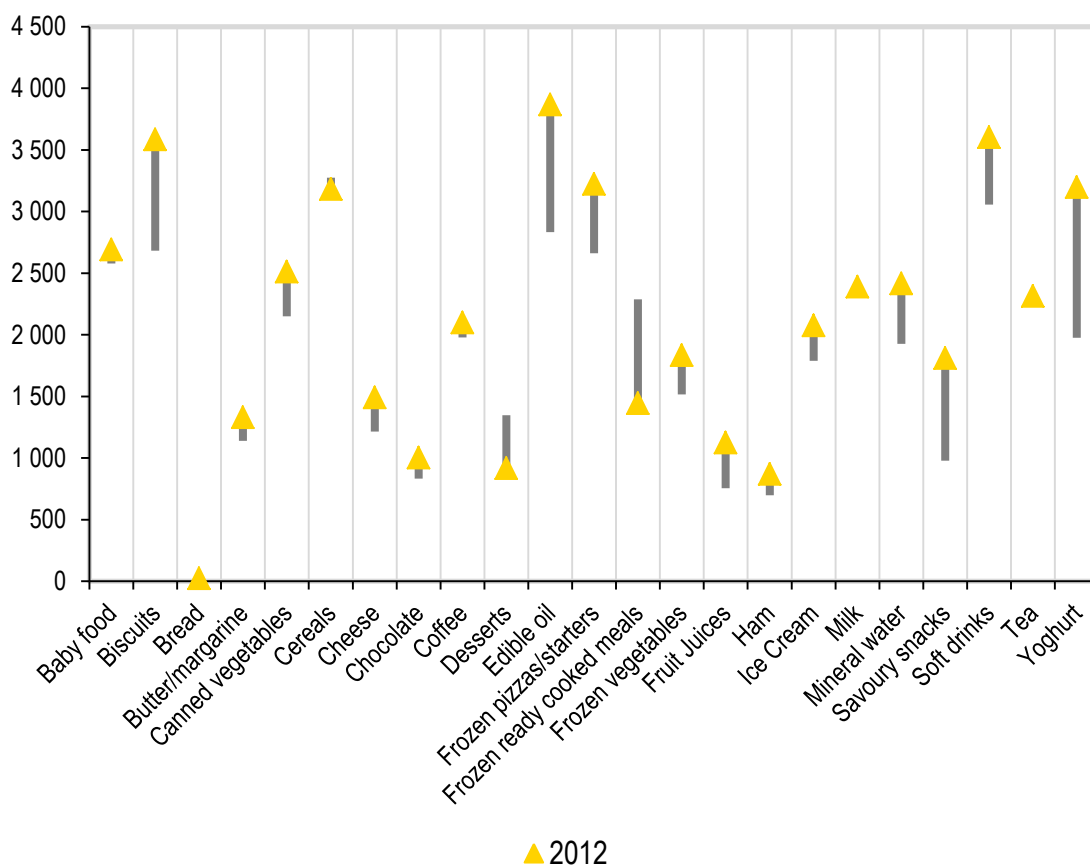
Supplier concentration - Czech Republic - HHI (brand only)
2004 - 2012 Evolution



| France | 2004 | 2006 | 2008 | 2010 | 2012 | CAGR 2004-2012 |
|---------------------------|---------------|---------------|---------------|---------------|---------------|----------------|
| Baby food | 2 578 | 2 507 | 2 546 | 2 672 | 2 690 | 0,5% |
| Biscuits | 2 682 | 2 993 | 3 208 | 3 479 | 3 584 | 3,7% |
| Bread | 24 | 23 | 21 | 21 | 23 | -0,8% |
| Butter/margarine | 1 139 | 1 154 | 1 291 | 1 316 | 1 329 | 1,9% |
| Canned vegetables | 2 149 | 2 226 | 2 296 | 2 366 | 2 512 | 2,0% |
| Cereals | 3 275 | 3 305 | 3 318 | 3 271 | 3 182 | -0,4% |
| Cheese | 1 216 | 1 487 | 1 523 | 1 569 | 1 491 | 2,6% |
| Chocolate | 832 | 870 | 896 | 958 | 1 002 | 2,3% |
| Coffee | 1 980 | 2 016 | 2 057 | 2 061 | 2 098 | 0,7% |
| Desserts | 1 347 | 1 167 | 1 038 | 930 | 916 | -4,7% |
| Edible oil | 2 832 | 3 613 | 3 793 | 4 343 | 3 867 | 4,0% |
| Frozen pizzas/starters | 2 662 | 2 564 | 2 620 | 2 972 | 3 222 | 2,4% |
| Frozen ready cooked meals | 2 288 | 1 670 | 1 452 | 1 490 | 1 444 | -5,6% |
| Frozen vegetables | 1 516 | 1 542 | 1 526 | 1 764 | 1 835 | 2,4% |
| Fruit Juices | 754 | 901 | 957 | 1 029 | 1 124 | 5,1% |
| Ham/Delicatessen | 698 | 803 | 707 | 1 019 | 871 | 2,8% |
| Ice Cream | 1 789 | 1 715 | 1 813 | 1 983 | 2 074 | 1,9% |
| Milk | 2 322 | 2 407 | 2 318 | 2 661 | 2 390 | 0,4% |
| Mineral water | 1 927 | 2 120 | 2 110 | 2 148 | 2 415 | 2,9% |
| Savoury snacks | 978 | 1 332 | 1 641 | 1 741 | 1 809 | 8,0% |
| Soft drinks | 3 057 | 3 294 | 3 435 | 3 590 | 3 603 | 2,1% |
| Tea | 2 273 | 2 339 | 2 294 | 2 334 | 2 314 | 0,2% |
| Yoghurt | 1 975 | 2 920 | 3 112 | 3 107 | 3 197 | 6,2% |
| Average | 1838,8 | 1955,1 | 1998,8 | 2122,9 | 2130,1 | |

Source: EY analysis based on Euromonitor Passport data

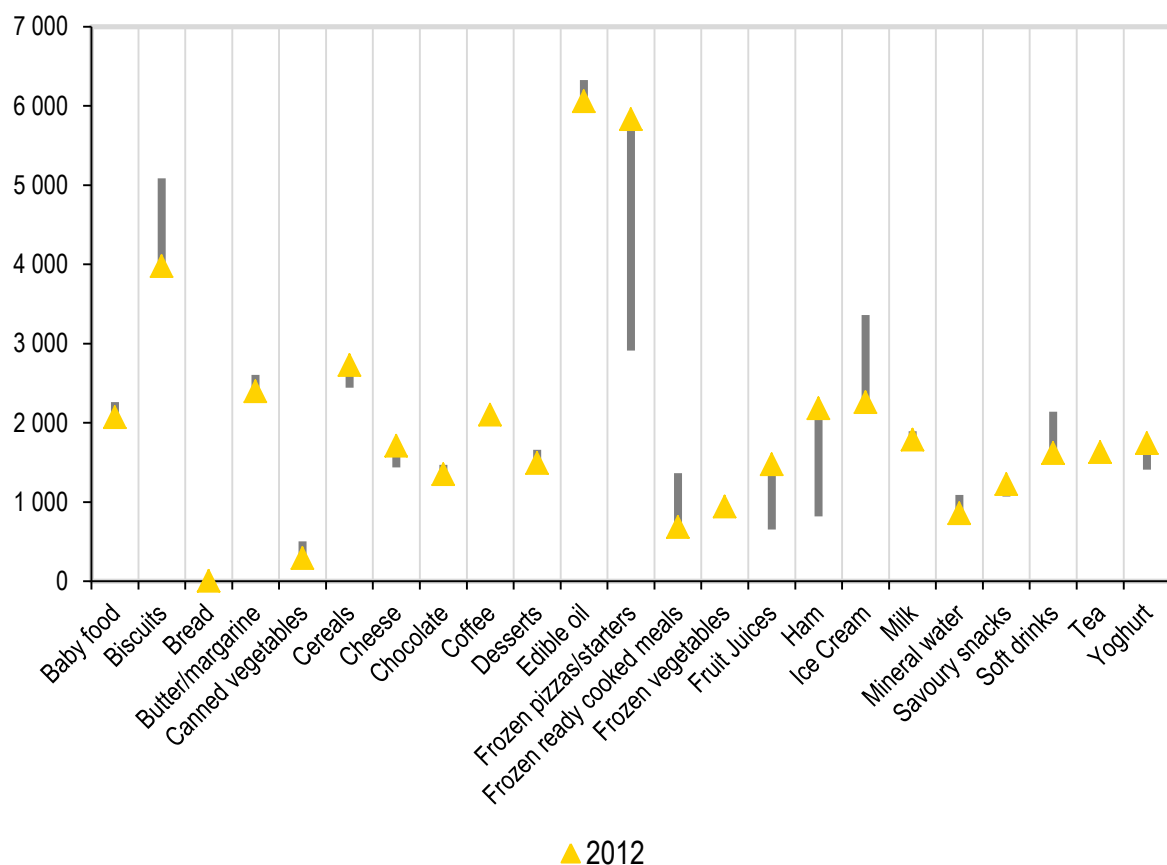
Supplier concentration - France - HHI (brand only)
2004 - 2012 Evolution



| Hungary | 2004 | 2006 | 2008 | 2010 | 2012 | CAGR 2004-2012 |
|---------------------------|---------------|---------------|---------------|---------------|---------------|----------------|
| Baby food | 2 261 | 2 261 | 2 135 | 2 171 | 2 067 | -1,1% |
| Biscuits | 5 086 | 4 900 | 3 900 | 4 127 | 3 976 | -3,0% |
| Bread | 2 | 2 | 3 | 3 | 3 | 6,4% |
| Butter/margarine | 2 607 | 2 475 | 2 305 | 2 409 | 2 395 | -1,1% |
| Canned vegetables | 506 | 297 | 177 | 255 | 290 | -6,7% |
| Cereals | 2 444 | 2 744 | 2 660 | 2 594 | 2 727 | 1,4% |
| Cheese | 1 440 | 1 799 | 1 681 | 1 645 | 1 709 | 2,2% |
| Chocolate | 1 469 | 1 446 | 1 371 | 1 374 | 1 349 | -1,1% |
| Coffee | 2 131 | 2 036 | 2 039 | 2 043 | 2 101 | -0,2% |
| Desserts | 1 658 | 1 752 | 1 467 | 1 493 | 1 490 | -1,3% |
| Edible oil | 6 326 | 7 362 | 6 556 | 5 802 | 6 056 | -0,5% |
| Frozen pizzas/starters | 2 913 | 2 917 | 5 133 | 5 941 | 5 830 | 9,1% |
| Frozen ready cooked meals | 1 363 | 1 342 | 1 152 | 1 363 | 683 | -8,3% |
| Frozen vegetables | 838 | 1 130 | 976 | 986 | 939 | 1,4% |
| Fruit Juices | 656 | 843 | 1 287 | 1 400 | 1 474 | 10,7% |
| Ham/Delicatessen | 818 | 1 863 | 2 224 | 2 373 | 2 179 | 13,0% |
| Ice Cream | 3 363 | 2 991 | 2 184 | 2 181 | 2 259 | -4,9% |
| Milk | 1 895 | 2 696 | 2 112 | 1 757 | 1 784 | -0,8% |
| Mineral water | 1 091 | 1 073 | 900 | 1 013 | 858 | -3,0% |
| Savoury snacks | 1 069 | 1 060 | 1 249 | 1 308 | 1 225 | 1,7% |
| Soft drinks | 2 142 | 2 133 | 1 853 | 1 800 | 1 618 | -3,4% |
| Tea | 1 683 | 1 785 | 1 891 | 1 656 | 1 629 | -0,4% |
| Yoghurt | 1 410 | 1 551 | 1 553 | 1 572 | 1 739 | 2,7% |
| Average | 1964,0 | 2106,8 | 2035,1 | 2055,0 | 2016,6 | |

Source: EY analysis based on Euromonitor Passport data

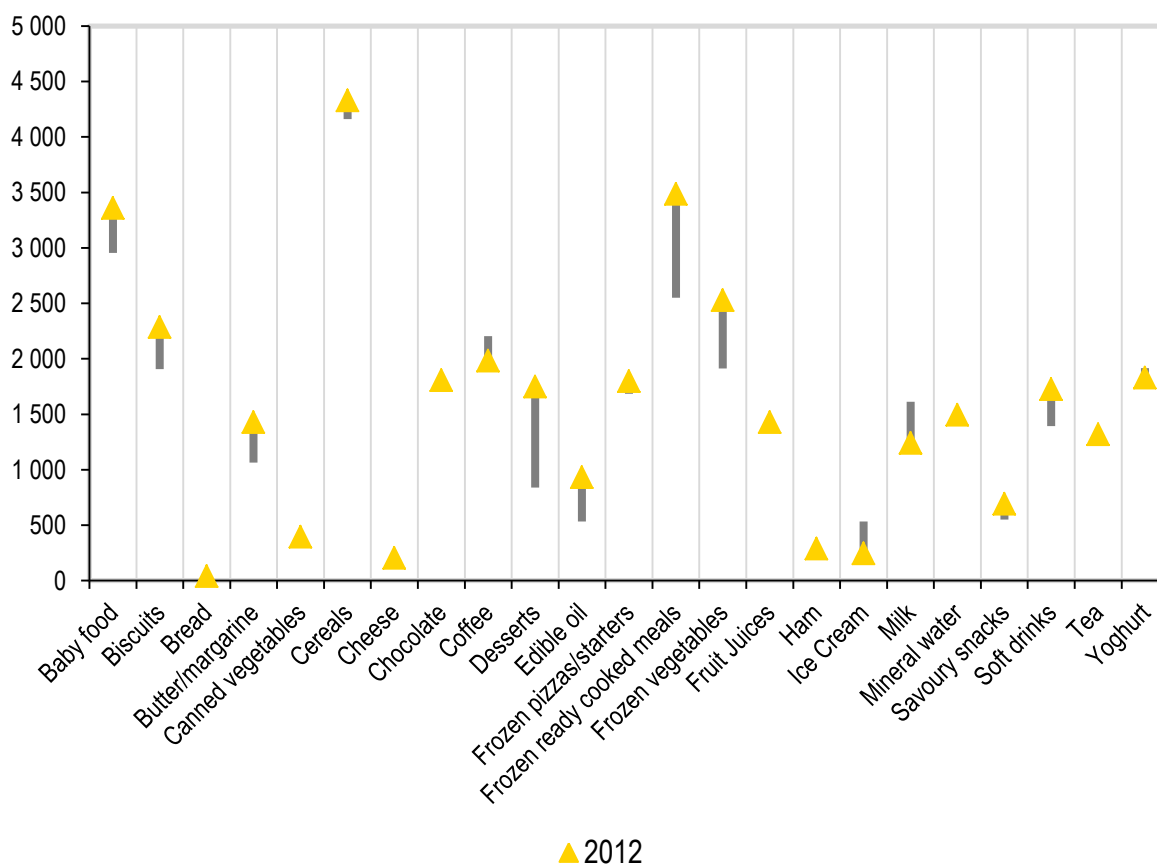
Supplier concentration - Hungary - HHI (brand only)
2004 - 2012 Evolution



| Italy | 2004 | 2006 | 2008 | 2010 | 2012 | CAGR 2004-2012 |
|---------------------------|---------------|---------------|---------------|---------------|---------------|----------------|
| Baby food | 2 956 | 3 213 | 3 280 | 3 339 | 3 358 | 1,6% |
| Biscuits | 1 907 | 2 144 | 2 171 | 2 265 | 2 285 | 2,3% |
| Bread | 21 | 21 | 26 | 33 | 39 | 8,3% |
| Butter/margarine | 1 065 | 1 149 | 1 118 | 1 155 | 1 428 | 3,7% |
| Canned vegetables | 319 | 339 | 358 | 385 | 397 | 2,8% |
| Cereals | 4 161 | 4 335 | 4 457 | 4 258 | 4 328 | 0,5% |
| Cheese | 131 | 194 | 185 | 184 | 205 | 5,8% |
| Chocolate | 1 712 | 1 733 | 1 842 | 1 846 | 1 806 | 0,7% |
| Coffee | 2 206 | 2 252 | 2 261 | 2 228 | 1 981 | -1,3% |
| Desserts | 840 | 994 | 1 311 | 1 460 | 1 747 | 9,6% |
| Edible oil | 534 | 540 | 928 | 844 | 931 | 7,2% |
| Frozen pizzas/starters | 1 686 | 1 795 | 1 839 | 1 867 | 1 797 | 0,8% |
| Frozen ready cooked meals | 2 551 | 2 508 | 2 532 | 2 658 | 3 485 | 4,0% |
| Frozen vegetables | 1 914 | 1 906 | 2 005 | 2 338 | 2 527 | 3,5% |
| Fruit Juices | 1 454 | 1 509 | 1 531 | 1 526 | 1 428 | -0,2% |
| Ham/Delicatessen | 239 | 239 | 225 | 263 | 289 | 2,4% |
| Ice Cream | 533 | 428 | 383 | 297 | 245 | -9,3% |
| Milk | 1 613 | 1 704 | 1 401 | 1 290 | 1 240 | -3,2% |
| Mineral water | 1 426 | 1 388 | 1 370 | 1 327 | 1 494 | 0,6% |
| Savoury snacks | 550 | 609 | 648 | 690 | 692 | 2,9% |
| Soft drinks | 1 394 | 1 537 | 1 617 | 1 642 | 1 725 | 2,7% |
| Tea | 1 224 | 1 281 | 1 290 | 1 267 | 1 319 | 0,9% |
| Yoghurt | 1 916 | 1 792 | 1 720 | 1 779 | 1 829 | -0,6% |
| Average | 1406,6 | 1461,4 | 1499,9 | 1519,1 | 1590,2 | |

Source: EY analysis based on Euromonitor Passport data

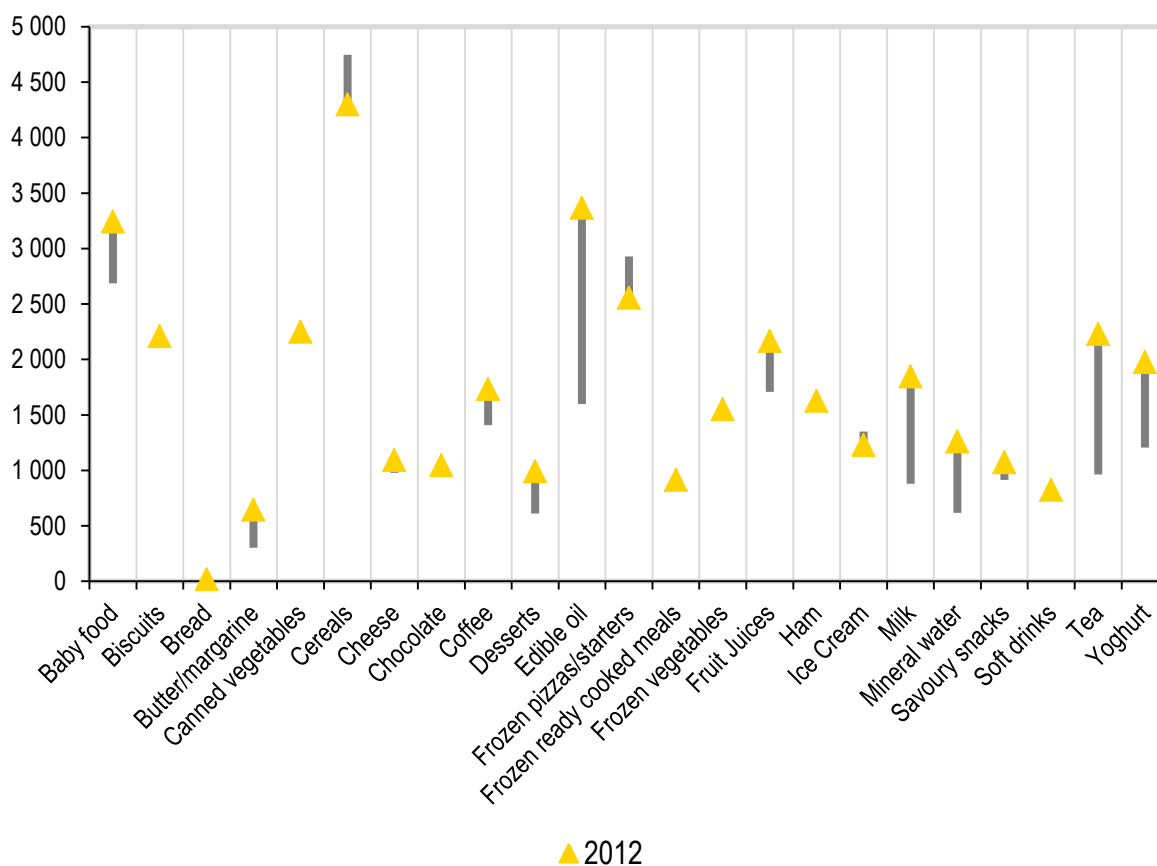
Supplier concentration - Italy - HHI (brand only)
2004 - 2012 Evolution



| Poland | 2004 | 2006 | 2008 | 2010 | 2012 | CAGR 2004-2012 |
|---------------------------|---------------|---------------|---------------|---------------|---------------|----------------|
| Baby food | 2 688 | 2 834 | 3 270 | 3 276 | 3 241 | 2,4% |
| Biscuits | 2 150 | 2 329 | 2 293 | 2 327 | 2 209 | 0,3% |
| Bread | 8 | 4 | 6 | 9 | 17 | 9,4% |
| Butter/margarine | 303 | 306 | 374 | 443 | 644 | 9,9% |
| Canned vegetables | 2 246 | 2 256 | 2 284 | 2 275 | 2 248 | 0,0% |
| Cereals | 4 748 | 4 550 | 4 253 | 4 265 | 4 298 | -1,2% |
| Cheese | 977 | 932 | 949 | 1 057 | 1 090 | 1,4% |
| Chocolate | 1 055 | 1 099 | 1 109 | 1 113 | 1 044 | -0,1% |
| Coffee | 1 408 | 1 577 | 1 615 | 1 688 | 1 731 | 2,6% |
| Desserts | 610 | 664 | 811 | 857 | 989 | 6,2% |
| Edible oil | 1 599 | 1 528 | 2 825 | 3 252 | 3 364 | 9,7% |
| Frozen pizzas/starters | 2 928 | 2 760 | 2 682 | 2 624 | 2 553 | -1,7% |
| Frozen ready cooked meals | 936 | 978 | 954 | 926 | 910 | -0,3% |
| Frozen vegetables | 1 463 | 1 596 | 1 579 | 1 518 | 1 549 | 0,7% |
| Fruit Juices | 1 707 | 2 467 | 2 482 | 2 690 | 2 166 | 3,0% |
| Ham/Delicatessen | 1 617 | 1 608 | 1 632 | 1 605 | 1 626 | 0,1% |
| Ice Cream | 1 350 | 1 270 | 1 329 | 1 278 | 1 226 | -1,2% |
| Milk | 881 | 1 102 | 1 618 | 1 876 | 1 843 | 9,7% |
| Mineral water | 617 | 872 | 980 | 1 084 | 1 257 | 9,3% |
| Savoury snacks | 914 | 962 | 1 062 | 1 066 | 1 070 | 2,0% |
| Soft drinks | 743 | 738 | 722 | 751 | 821 | 1,3% |
| Tea | 965 | 1 353 | 1 541 | 1 922 | 2 228 | 11,0% |
| Yoghurt | 1 207 | 1 378 | 1 543 | 1 764 | 1 973 | 6,3% |
| Average | 1440,0 | 1528,9 | 1648,4 | 1724,6 | 1743,4 | |

Source: EY analysis based on Euromonitor Passport data

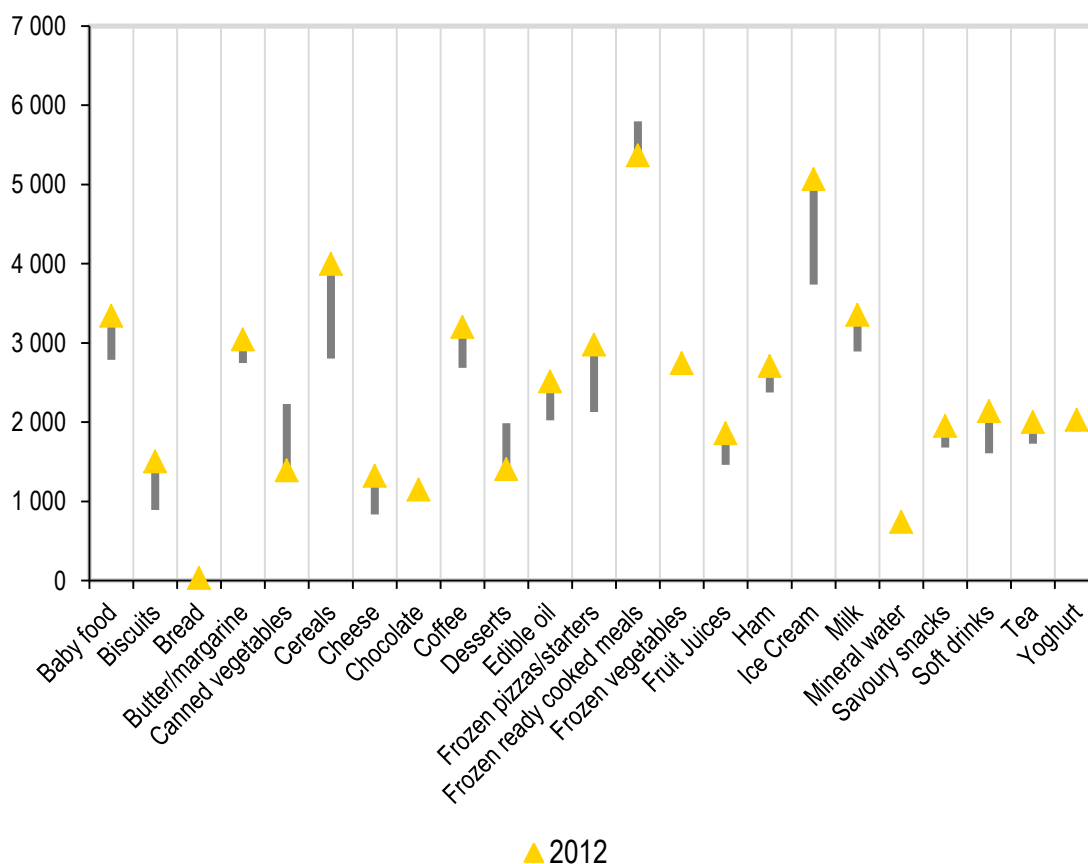
Supplier concentration - Poland - HHI (brand only)
2004 - 2012 Evolution



| Portugal | 2004 | 2006 | 2008 | 2010 | 2012 | CAGR 2004-2012 |
|---------------------------|---------------|---------------|---------------|---------------|---------------|----------------|
| Baby food | 2 787 | 2 770 | 3 153 | 3 348 | 3 341 | 2,3% |
| Biscuits | 890 | 1 304 | 1 432 | 1 521 | 1 503 | 6,8% |
| Bread | 35 | 38 | 35 | 32 | 30 | -1,9% |
| Butter/margarine | 2 745 | 2 832 | 3 043 | 3 144 | 3 044 | 1,3% |
| Canned vegetables | 2 232 | 2 436 | 2 721 | 1 349 | 1 388 | -5,8% |
| Cereals | 2 804 | 3 530 | 3 564 | 3 894 | 3 995 | 4,5% |
| Cheese | 835 | 936 | 1 086 | 1 312 | 1 321 | 5,9% |
| Chocolate | 1 207 | 1 073 | 1 052 | 1 163 | 1 145 | -0,7% |
| Coffee | 2 687 | 2 870 | 3 002 | 2 847 | 3 198 | 2,2% |
| Desserts | 1 988 | 1 322 | 1 336 | 1 312 | 1 406 | -4,2% |
| Edible oil | 2 025 | 2 012 | 2 158 | 2 563 | 2 514 | 2,7% |
| Frozen pizzas/starters | 2 130 | 1 948 | 2 999 | 3 021 | 2 979 | 4,3% |
| Frozen ready cooked meals | 5 799 | 5 194 | 5 188 | 5 121 | 5 367 | -1,0% |
| Frozen vegetables | 2 619 | 2 811 | 2 668 | 2 831 | 2 743 | 0,6% |
| Fruit Juices | 1 462 | 1 528 | 1 316 | 1 976 | 1 858 | 3,0% |
| Ham/Delicatessen | 2 375 | 2 654 | 2 983 | 2 729 | 2 707 | 1,6% |
| Ice Cream | 3 737 | 4 108 | 4 715 | 5 092 | 5 066 | 3,9% |
| Milk | 2 894 | 2 630 | 2 437 | 2 247 | 3 353 | 1,9% |
| Mineral water | 670 | 842 | 775 | 736 | 737 | 1,2% |
| Savoury snacks | 1 680 | 1 652 | 1 592 | 1 835 | 1 953 | 1,9% |
| Soft drinks | 1 610 | 1 663 | 1 850 | 1 971 | 2 135 | 3,6% |
| Tea | 1 728 | 1 784 | 1 704 | 1 806 | 1 998 | 1,8% |
| Yoghurt | 1 887 | 1 897 | 1 841 | 1 957 | 2 029 | 0,9% |
| Average | 2122,8 | 2166,7 | 2289,1 | 2339,4 | 2426,5 | |

Source: EY analysis based on Euromonitor Passport data

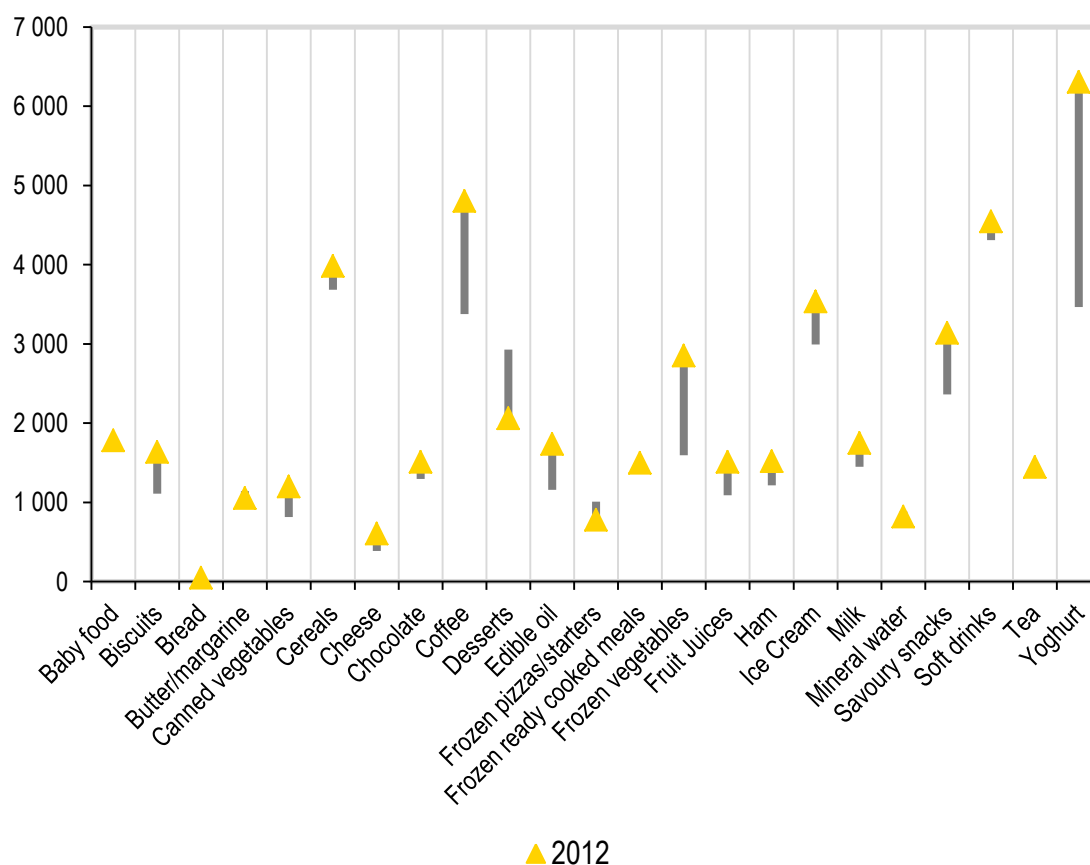
Supplier concentration - Portugal - HHI (brand only)
2004 - 2012 Evolution



| Spain | 2004 | 2006 | 2008 | 2010 | 2012 | CAGR 2004-2012 |
|---------------------------|---------------|---------------|---------------|---------------|---------------|----------------|
| Baby food | 1 651 | 1 681 | 1 954 | 1 832 | 1 781 | 1,0% |
| Biscuits | 1 109 | 1 455 | 1 540 | 1 598 | 1 638 | 5,0% |
| Bread | 22 | 29 | 31 | 33 | 50 | 10,7% |
| Butter/margarine | 1 144 | 1 207 | 1 324 | 1 216 | 1 056 | -1,0% |
| Canned vegetables | 814 | 1 042 | 1 196 | 1 186 | 1 199 | 5,0% |
| Cereals | 3 683 | 3 743 | 3 780 | 3 431 | 3 983 | 1,0% |
| Cheese | 386 | 446 | 435 | 591 | 606 | 5,8% |
| Chocolate | 1 298 | 1 345 | 1 364 | 1 495 | 1 511 | 1,9% |
| Coffee | 3 376 | 3 694 | 4 031 | 4 546 | 4 804 | 4,5% |
| Desserts | 2 930 | 2 330 | 2 151 | 2 030 | 2 060 | -4,3% |
| Edible oil | 1 157 | 1 307 | 1 416 | 1 483 | 1 739 | 5,2% |
| Frozen pizzas/starters | 1 011 | 881 | 860 | 760 | 778 | -3,2% |
| Frozen ready cooked meals | 1 519 | 1 680 | 1 515 | 1 452 | 1 498 | -0,2% |
| Frozen vegetables | 1 595 | 1 697 | 1 791 | 1 728 | 2 851 | 7,5% |
| Fruit Juices | 1 089 | 1 110 | 1 092 | 1 377 | 1 510 | 4,2% |
| Ham/Delicatessen | 1 215 | 1 451 | 1 100 | 1 015 | 1 518 | 2,8% |
| Ice Cream | 2 992 | 3 034 | 3 066 | 3 287 | 3 536 | 2,1% |
| Milk | 1 448 | 1 466 | 1 321 | 1 749 | 1 747 | 2,4% |
| Mineral water | 884 | 866 | 900 | 896 | 819 | -1,0% |
| Savoury snacks | 2 362 | 2 488 | 2 639 | 3 004 | 3 139 | 3,6% |
| Soft drinks | 4 311 | 4 226 | 4 293 | 4 381 | 4 545 | 0,7% |
| Tea | 1 383 | 1 520 | 1 515 | 1 489 | 1 448 | 0,6% |
| Yoghurt | 3 468 | 5 333 | 5 712 | 5 841 | 6 309 | 7,8% |
| Average | 1776,1 | 1914,4 | 1957,7 | 2018,3 | 2179,2 | |

Source: EY analysis based on Euromonitor Passport data

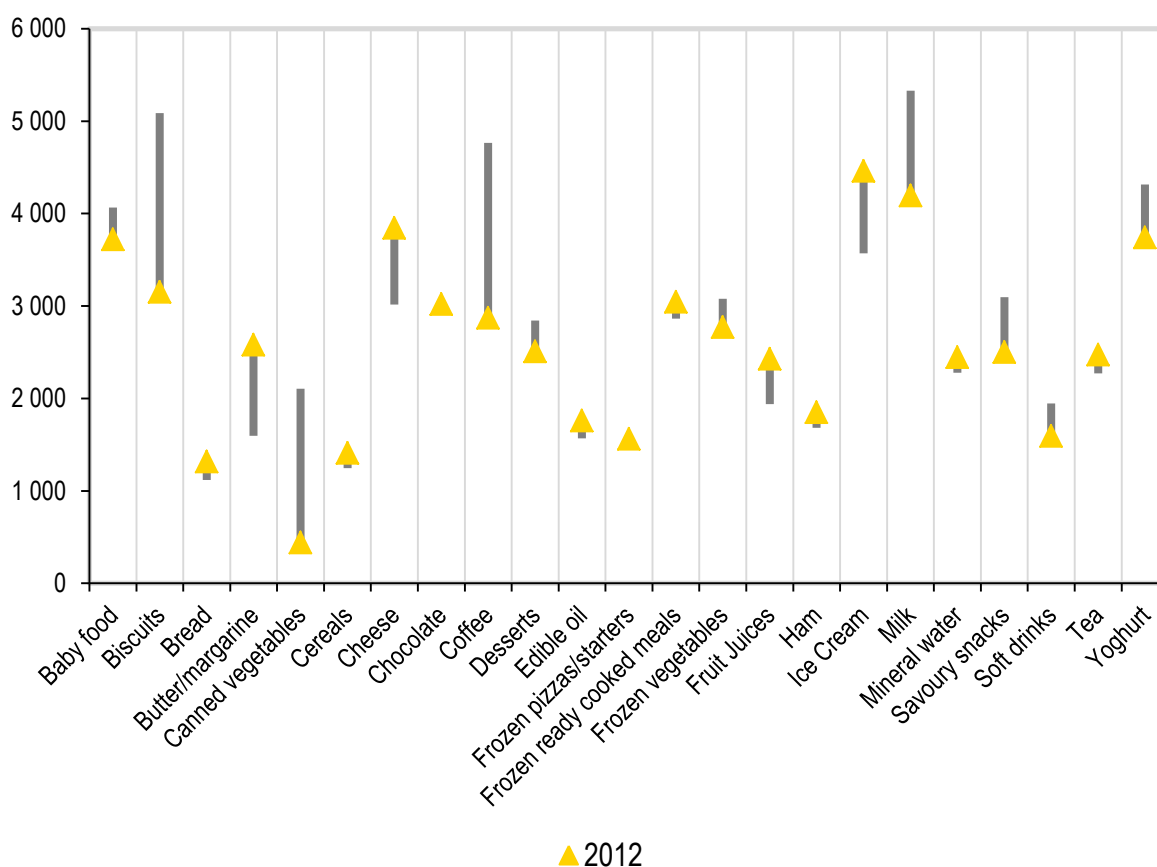
Supplier concentration - Spain - HHI (brand only)
2004 - 2012 Evolution



| Finland | 2004 | 2006 | 2008 | 2010 | 2012 | CAGR 2004-2012 |
|---------------------------|---------------|---------------|---------------|---------------|---------------|----------------|
| Baby food | 4 064 | 3 872 | 4 254 | 4 315 | 3 719 | -1,1% |
| Biscuits | 5 087 | 5 301 | 5 406 | 5 558 | 3 150 | -5,8% |
| Bread | 1 118 | 1 126 | 1 187 | 1 297 | 1 315 | 2,1% |
| Butter/margarine | 1 598 | 1 661 | 1 832 | 1 882 | 2 580 | 6,2% |
| Canned vegetables | 2 107 | 434 | 450 | 445 | 440 | -17,8% |
| Cereals | 1 247 | 1 439 | 1 360 | 1 406 | 1 408 | 1,5% |
| Cheese | 3 014 | 3 239 | 3 604 | 3 644 | 3 842 | 3,1% |
| Chocolate | 2 971 | 2 978 | 3 032 | 3 154 | 3 021 | 0,2% |
| Coffee | 4 767 | 4 827 | 4 929 | 4 969 | 2 871 | -6,1% |
| Desserts | 2 843 | 2 584 | 2 576 | 2 325 | 2 509 | -1,6% |
| Edible oil | 1 567 | 1 500 | 1 634 | 1 683 | 1 759 | 1,5% |
| Frozen pizzas/starters | 1 459 | 1 512 | 1 550 | 1 607 | 1 560 | 0,8% |
| Frozen ready cooked meals | 2 865 | 2 874 | 2 929 | 2 998 | 3 043 | 0,8% |
| Frozen vegetables | 3 078 | 3 247 | 3 410 | 2 757 | 2 772 | -1,3% |
| Fruit Juices | 1 940 | 2 087 | 2 118 | 2 510 | 2 426 | 2,8% |
| Ham/Delicatessen | 1 682 | 1 716 | 1 703 | 1 782 | 1 849 | 1,2% |
| Ice Cream | 3 569 | 3 655 | 3 628 | 3 541 | 4 459 | 2,8% |
| Milk | 5 331 | 4 925 | 4 439 | 4 303 | 4 192 | -3,0% |
| Mineral water | 2 280 | 2 255 | 2 342 | 2 486 | 2 445 | 0,9% |
| Savoury snacks | 3 096 | 2 920 | 2 902 | 2 386 | 2 500 | -2,6% |
| Soft drinks | 1 945 | 1 781 | 1 679 | 1 647 | 1 591 | -2,5% |
| Tea | 2 272 | 2 462 | 2 500 | 2 448 | 2 471 | 1,1% |
| Yoghurt | 4 316 | 4 378 | 4 191 | 3 902 | 3 742 | -1,8% |
| Average | 2792,1 | 2729,2 | 2767,6 | 2741,0 | 2594,2 | |

Source: EY analysis based on Euromonitor Passport data

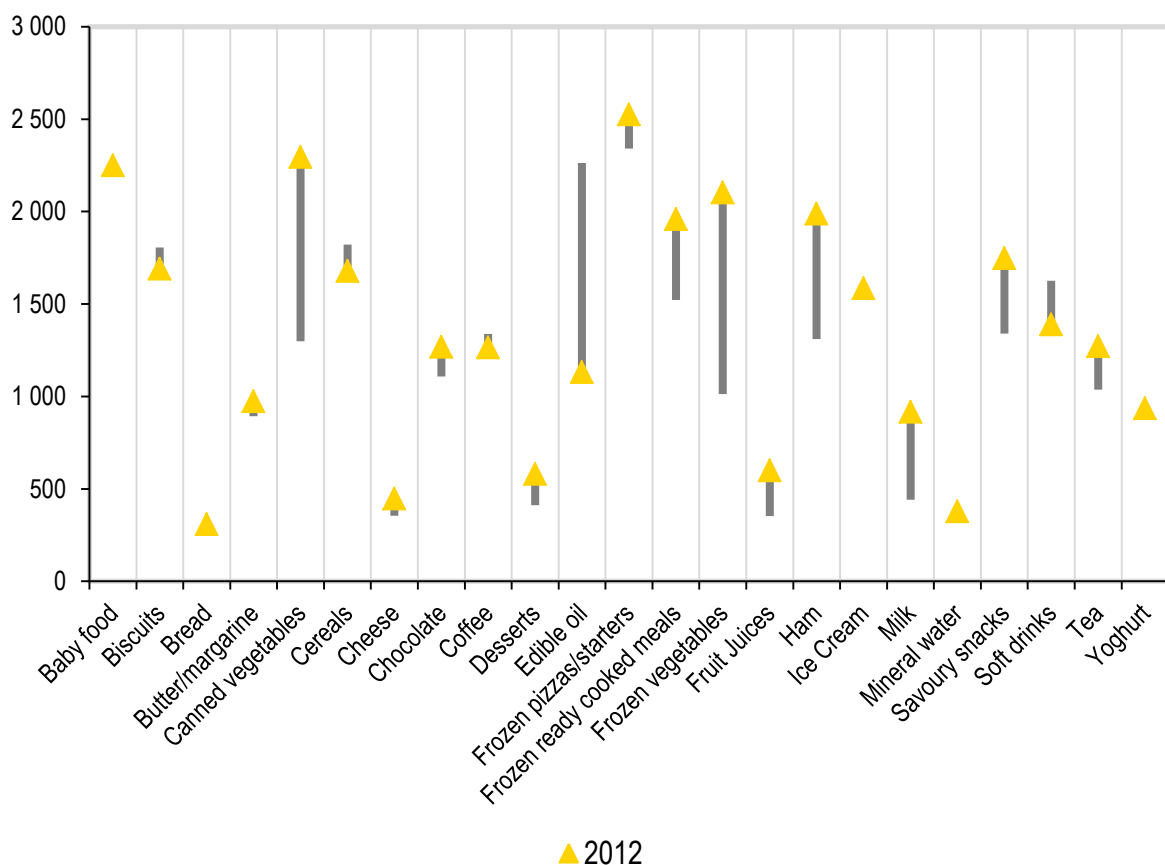
Supplier concentration - Finland - HHI (brand only)
2004 - 2012 Evolution



| Germany | 2004 | 2006 | 2008 | 2010 | 2012 | CAGR 2004-2012 |
|---------------------------|---------------|---------------|---------------|---------------|---------------|----------------|
| Baby food | 2 266 | 2 257 | 2 236 | 2 219 | 2 249 | -0,1% |
| Biscuits | 1 806 | 2 135 | 2 059 | 1 718 | 1 690 | -0,8% |
| Bread | 277 | 320 | 310 | 308 | 308 | 1,3% |
| Butter/margarine | 894 | 954 | 932 | 985 | 972 | 1,1% |
| Canned vegetables | 1 298 | 1 436 | 1 503 | 2 051 | 2 294 | 7,4% |
| Cereals | 1 821 | 1 757 | 1 664 | 1 675 | 1 677 | -1,0% |
| Cheese | 354 | 433 | 424 | 444 | 447 | 3,0% |
| Chocolate | 1 108 | 1 225 | 1 242 | 1 264 | 1 268 | 1,7% |
| Coffee | 1 338 | 1 360 | 1 367 | 1 327 | 1 263 | -0,7% |
| Desserts | 413 | 559 | 631 | 648 | 580 | 4,3% |
| Edible oil | 2 263 | 1 365 | 1 009 | 1 184 | 1 130 | -8,3% |
| Frozen pizzas/starters | 2 340 | 2 276 | 2 276 | 2 472 | 2 524 | 0,9% |
| Frozen ready cooked meals | 1 522 | 1 626 | 2 073 | 2 833 | 1 958 | 3,2% |
| Frozen vegetables | 1 014 | 1 111 | 1 806 | 2 139 | 2 101 | 9,5% |
| Fruit Juices | 354 | 434 | 522 | 597 | 599 | 6,8% |
| Ham/Delicatessen | 1 311 | 1 291 | 1 351 | 1 794 | 1 988 | 5,3% |
| Ice Cream | 1 527 | 1 605 | 1 604 | 1 576 | 1 585 | 0,5% |
| Milk | 441 | 561 | 686 | 745 | 915 | 9,6% |
| Mineral water | 390 | 418 | 388 | 397 | 378 | -0,4% |
| Savoury snacks | 1 340 | 1 309 | 1 219 | 1 742 | 1 747 | 3,4% |
| Soft drinks | 1 626 | 1 679 | 1 611 | 1 432 | 1 389 | -2,0% |
| Tea | 1 038 | 1 163 | 1 260 | 1 262 | 1 272 | 2,6% |
| Yoghurt | 914 | 930 | 1 000 | 1 009 | 935 | 0,3% |
| Average | 1202,3 | 1226,3 | 1268,4 | 1383,5 | 1359,4 | |

Source: EY analysis based on Euromonitor Passport data

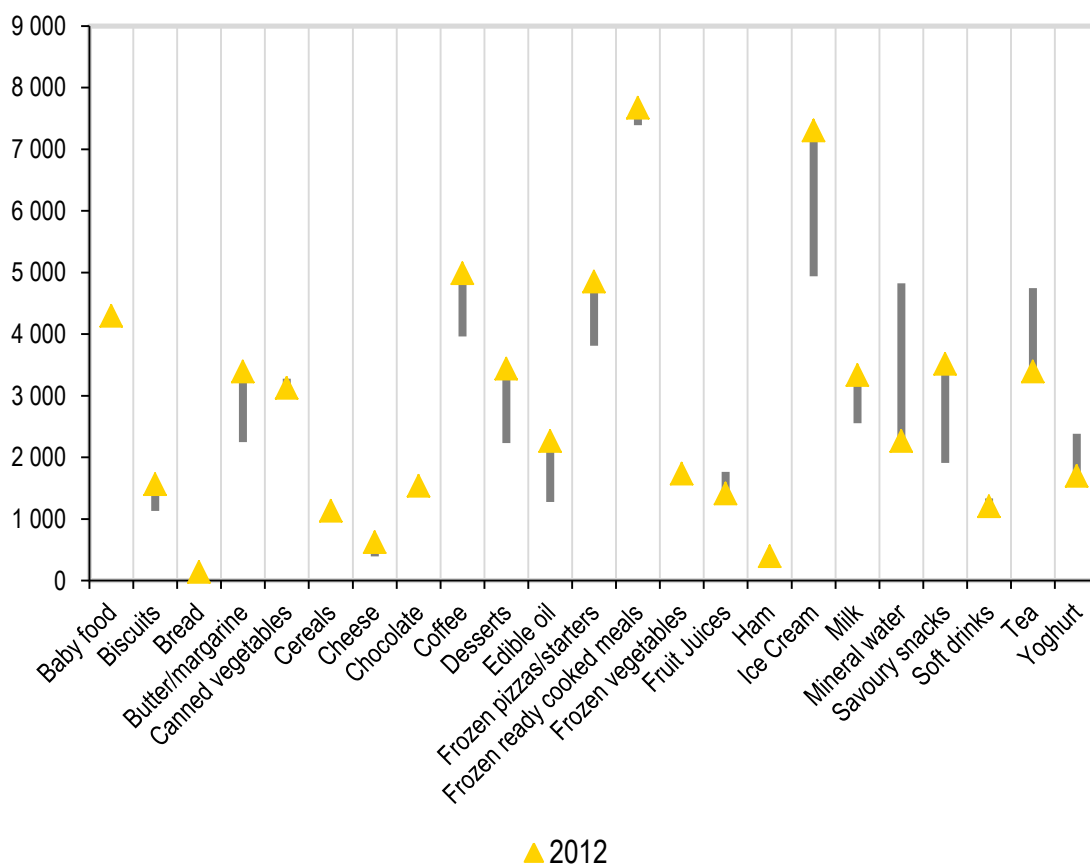
Supplier concentration - Germany - HHI (brand only)
2004 - 2012 Evolution



| Netherlands | 2004 | 2006 | 2008 | 2010 | 2012 | CAGR 2004-2012 |
|---------------------------|---------------|---------------|---------------|---------------|---------------|----------------|
| Baby food | 4 232 | 4 041 | 4 565 | 4 357 | 4 295 | 0,2% |
| Biscuits | 1 132 | 1 020 | 1 290 | 1 537 | 1 565 | 4,1% |
| Bread | 186 | 168 | 173 | 159 | 138 | -3,7% |
| Butter/margarine | 2 249 | 2 660 | 2 783 | 3 073 | 3 392 | 5,3% |
| Canned vegetables | 3 276 | 3 379 | 3 064 | 3 186 | 3 126 | -0,6% |
| Cereals | 1 087 | 1 088 | 1 100 | 1 194 | 1 134 | 0,5% |
| Cheese | 393 | 424 | 683 | 611 | 625 | 6,0% |
| Chocolate | 1 362 | 1 392 | 1 418 | 1 443 | 1 540 | 1,5% |
| Coffee | 3 965 | 3 943 | 4 569 | 5 059 | 4 985 | 2,9% |
| Desserts | 2 236 | 1 954 | 3 407 | 3 533 | 3 440 | 5,5% |
| Edible oil | 1 280 | 1 534 | 1 921 | 2 034 | 2 266 | 7,4% |
| Frozen pizzas/starters | 3 811 | 4 739 | 5 396 | 5 113 | 4 851 | 3,1% |
| Frozen ready cooked meals | 7 392 | 8 403 | 8 789 | 8 251 | 7 674 | 0,5% |
| Frozen vegetables | 1 731 | 1 681 | 1 680 | 1 588 | 1 733 | 0,0% |
| Fruit Juices | 1 765 | 1 617 | 1 366 | 1 501 | 1 415 | -2,7% |
| Ham/Delicatessen | 433 | 438 | 402 | 603 | 396 | -1,1% |
| Ice Cream | 4 941 | 5 152 | 5 463 | 6 999 | 7 305 | 5,0% |
| Milk | 2 554 | 2 459 | 4 593 | 3 255 | 3 336 | 3,4% |
| Mineral water | 4 824 | 4 191 | 3 548 | 2 915 | 2 266 | -9,0% |
| Savoury snacks | 1 913 | 3 259 | 3 666 | 3 696 | 3 518 | 7,9% |
| Soft drinks | 1 333 | 1 204 | 1 295 | 1 249 | 1 207 | -1,2% |
| Tea | 4 750 | 4 017 | 3 419 | 3 276 | 3 390 | -4,1% |
| Yoghurt | 2 385 | 1 854 | 2 714 | 1 829 | 1 698 | -4,2% |
| Average | 2575,2 | 2635,5 | 2926,2 | 2889,6 | 2838,9 | |

Source: EY analysis based on Euromonitor Passport data

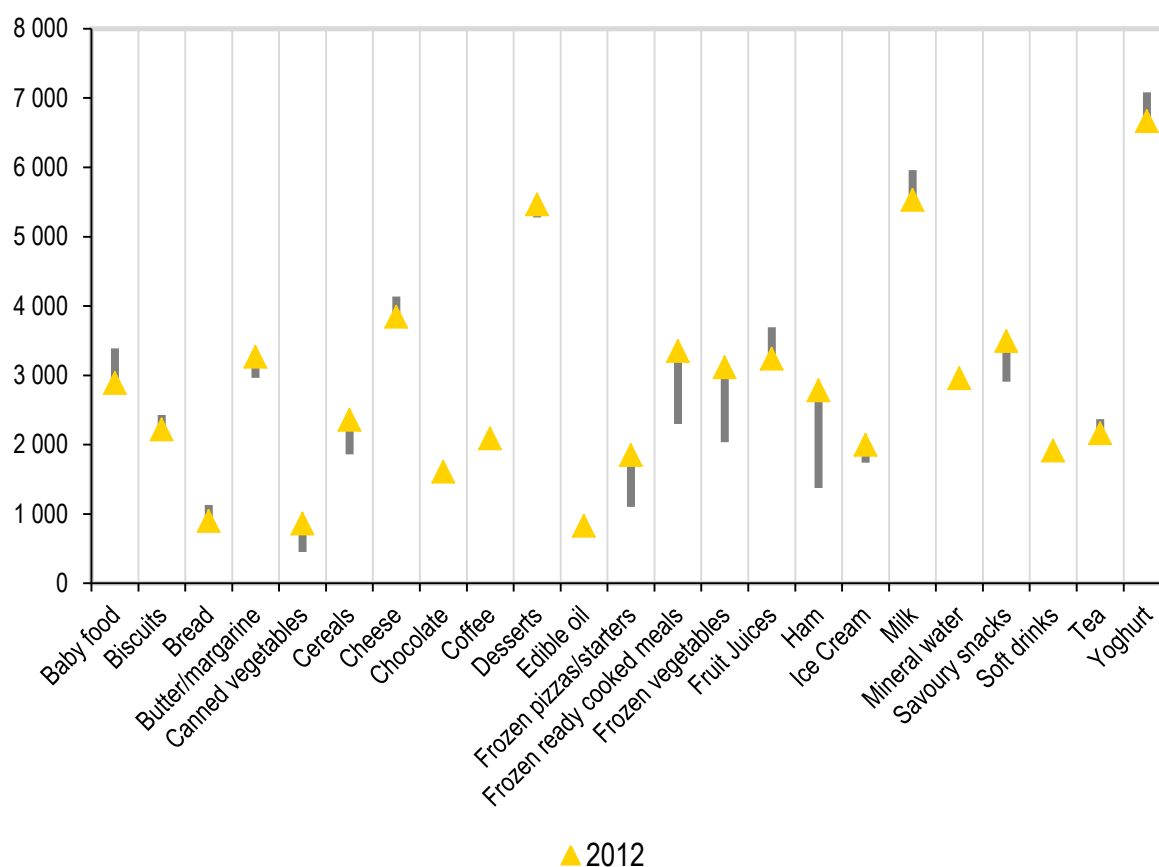
Supplier concentration - Netherlands - HHI (brand only)
2004 - 2012 Evolution



| Denmark | 2004 | 2006 | 2008 | 2010 | 2012 | CAGR 2004-2012 |
|---------------------------|---------------|---------------|---------------|---------------|---------------|----------------|
| Baby food | 3 391 | 3 173 | 2 915 | 2 793 | 2 887 | -2,0% |
| Biscuits | 2 428 | 2 553 | 2 582 | 2 576 | 2 214 | -1,1% |
| Bread | 1 133 | 1 167 | 1 178 | 1 015 | 895 | -2,9% |
| Butter/margarine | 2 962 | 2 978 | 2 992 | 3 067 | 3 263 | 1,2% |
| Canned vegetables | 452 | 448 | 540 | 672 | 858 | 8,3% |
| Cereals | 1 861 | 1 664 | 2 010 | 2 134 | 2 356 | 3,0% |
| Cheese | 4 136 | 4 357 | 4 026 | 3 987 | 3 843 | -0,9% |
| Chocolate | 1 495 | 1 505 | 1 554 | 1 512 | 1 608 | 0,9% |
| Coffee | 2 046 | 2 162 | 2 152 | 2 151 | 2 087 | 0,2% |
| Desserts | 5 278 | 5 327 | 5 331 | 5 079 | 5 462 | 0,4% |
| Edible oil | 688 | 770 | 778 | 765 | 826 | 2,3% |
| Frozen pizzas/starters | 1 104 | 1 338 | 1 486 | 1 696 | 1 849 | 6,7% |
| Frozen ready cooked meals | 2 300 | 2 325 | 2 512 | 3 192 | 3 350 | 4,8% |
| Frozen vegetables | 2 036 | 2 281 | 2 324 | 2 356 | 3 112 | 5,4% |
| Fruit Juices | 3 694 | 3 416 | 3 587 | 3 399 | 3 237 | -1,6% |
| Ham/Delicatessen | 1 375 | 2 272 | 2 390 | 2 422 | 2 779 | 9,2% |
| Ice Cream | 1 740 | 1 739 | 1 705 | 2 073 | 1 994 | 1,7% |
| Milk | 5 962 | 5 236 | 5 959 | 5 752 | 5 525 | -0,9% |
| Mineral water | 3 009 | 2 789 | 2 934 | 3 102 | 2 956 | -0,2% |
| Savoury snacks | 2 909 | 2 645 | 2 419 | 3 319 | 3 489 | 2,3% |
| Soft drinks | 1 769 | 1 760 | 1 865 | 1 870 | 1 912 | 1,0% |
| Tea | 2 367 | 2 399 | 2 280 | 2 181 | 2 161 | -1,1% |
| Yoghurt | 7 085 | 7 051 | 6 712 | 6 806 | 6 664 | -0,8% |
| Average | 2661,8 | 2667,6 | 2705,6 | 2779,1 | 2840,3 | |

Source: EY analysis based on Euromonitor Passport data

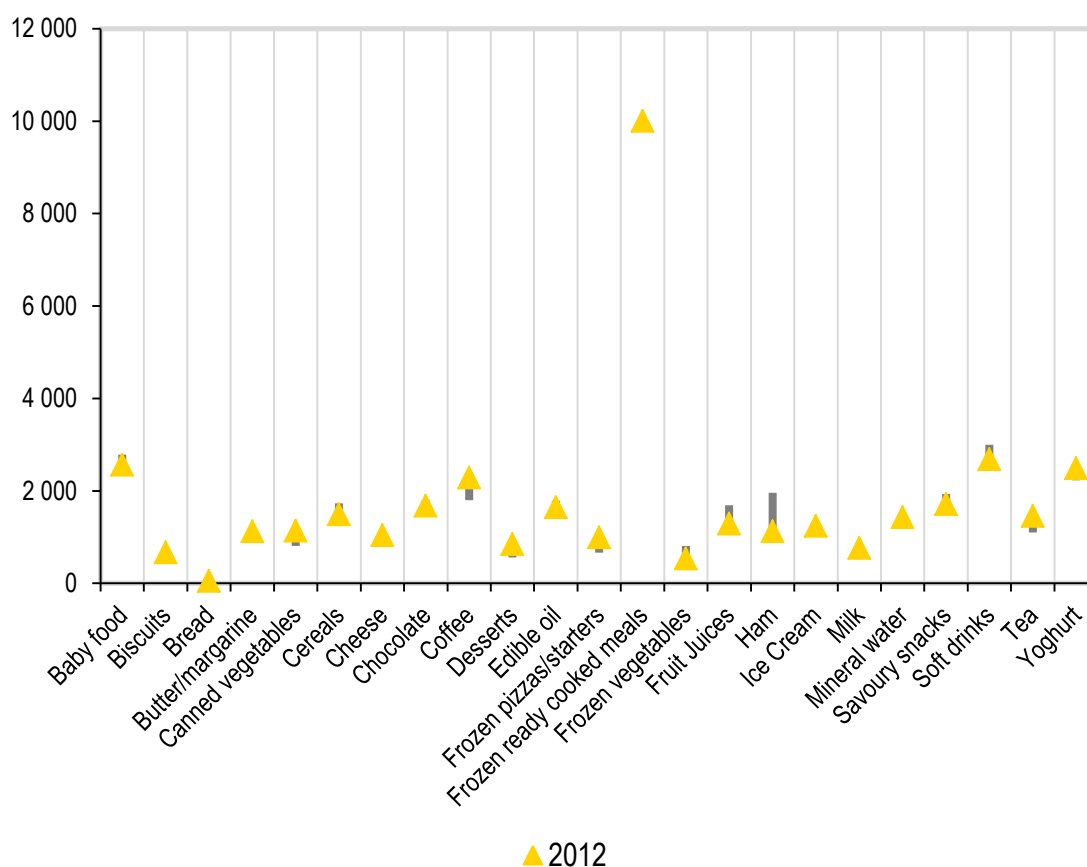
Supplier concentration - Denmark - HHI (brand only)
2004 - 2012 Evolution



| Romania | 2004 | 2006 | 2008 | 2010 | 2012 | CAGR 2004-2012 |
|---------------------------|---------------|---------------|---------------|---------------|---------------|----------------|
| Baby food | 2 782 | 2 512 | 2 530 | 2 563 | 2 559 | -1,0% |
| Biscuits | 562 | 544 | 590 | 592 | 662 | 2,1% |
| Bread | 8 | 20 | 42 | 54 | 50 | 25,6% |
| Butter/margarine | 883 | 1 144 | 1 013 | 1 041 | 1 122 | 3,0% |
| Canned vegetables | 810 | 1 009 | 1 020 | 1 062 | 1 134 | 4,3% |
| Cereals | 1 733 | 1 557 | 1 413 | 1 437 | 1 487 | -1,9% |
| Cheese | 909 | 1 173 | 1 230 | 1 119 | 1 036 | 1,6% |
| Chocolate | 1 801 | 1 654 | 1 372 | 1 418 | 1 673 | -0,9% |
| Coffee | 1 801 | 1 644 | 2 134 | 2 328 | 2 283 | 3,0% |
| Desserts | 558 | 906 | 1 034 | 918 | 846 | 5,3% |
| Edible oil | 1 788 | 1 551 | 2 003 | 1 613 | 1 644 | -1,0% |
| Frozen pizzas/starters | 666 | 579 | 549 | 709 | 990 | 5,1% |
| Frozen ready cooked meals | 10 000 | 10 000 | 10 000 | 10 000 | 10 000 | 0,0% |
| Frozen vegetables | 813 | 775 | 546 | 544 | 532 | -5,2% |
| Fruit Juices | 1 691 | 1 577 | 1 328 | 1 398 | 1 289 | -3,3% |
| Ham/Delicatessen | 1 960 | 2 106 | 1 375 | 1 169 | 1 124 | -6,7% |
| Ice Cream | 1 236 | 1 447 | 1 268 | 1 246 | 1 241 | 0,0% |
| Milk | 669 | 974 | 983 | 770 | 764 | 1,7% |
| Mineral water | 1 330 | 1 540 | 1 638 | 1 627 | 1 427 | 0,9% |
| Savoury snacks | 1 930 | 1 884 | 1 583 | 1 705 | 1 713 | -1,5% |
| Soft drinks | 2 999 | 2 474 | 2 388 | 2 469 | 2 677 | -1,4% |
| Tea | 1 104 | 1 404 | 1 493 | 1 630 | 1 454 | 3,5% |
| Yoghurt | 2 230 | 1 960 | 2 051 | 2 161 | 2 483 | 1,4% |
| Average | 1750,6 | 1758,1 | 1721,0 | 1720,5 | 1747,3 | |

Source: EY analysis based on Euromonitor Passport data

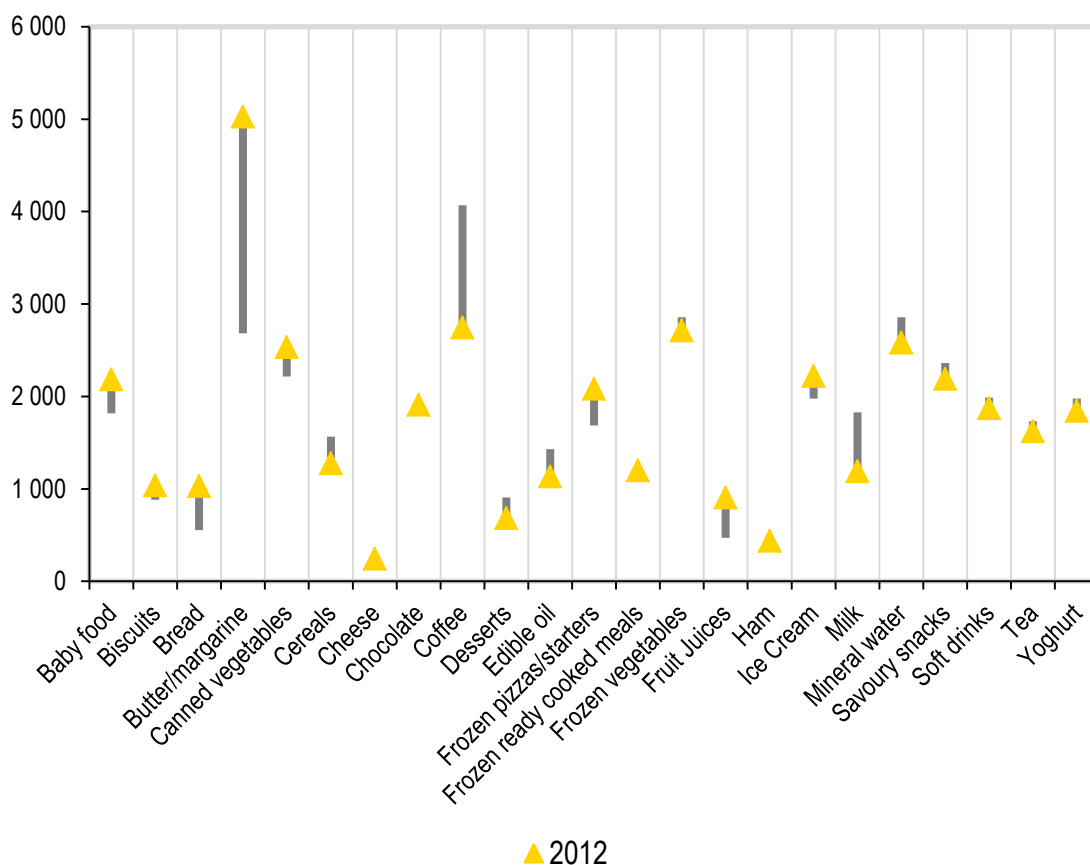
Supplier concentration - Romania - HHI (brand only)
2004 - 2012 Evolution



| United Kingdom | 2004 | 2006 | 2008 | 2010 | 2012 | CAGR 2004-2012 |
|---------------------------|---------------|---------------|---------------|---------------|---------------|----------------|
| Baby food | 1 818 | 1 888 | 2 028 | 2 096 | 2 180 | 2,3% |
| Biscuits | 881 | 921 | 933 | 997 | 1 035 | 2,0% |
| Bread | 555 | 752 | 1 001 | 995 | 1 028 | 8,0% |
| Butter/margarine | 2 684 | 2 724 | 3 098 | 4 960 | 5 025 | 8,2% |
| Canned vegetables | 2 217 | 2 451 | 2 695 | 2 586 | 2 530 | 1,7% |
| Cereals | 1 565 | 1 430 | 1 416 | 1 341 | 1 274 | -2,5% |
| Cheese | 201 | 206 | 219 | 250 | 244 | 2,4% |
| Chocolate | 1 801 | 1 754 | 1 751 | 1 951 | 1 908 | 0,7% |
| Coffee | 4 070 | 3 812 | 3 580 | 3 227 | 2 741 | -4,8% |
| Desserts | 908 | 844 | 802 | 742 | 681 | -3,5% |
| Edible oil | 1 428 | 1 295 | 1 181 | 993 | 1 134 | -2,8% |
| Frozen pizzas/starters | 1 686 | 1 769 | 1 667 | 2 005 | 2 080 | 2,7% |
| Frozen ready cooked meals | 1 223 | 1 207 | 1 048 | 1 171 | 1 196 | -0,3% |
| Frozen vegetables | 2 856 | 2 974 | 2 831 | 2 676 | 2 712 | -0,6% |
| Fruit Juices | 472 | 595 | 785 | 890 | 905 | 8,5% |
| Ham/Delicatessen | 394 | 356 | 375 | 406 | 435 | 1,3% |
| Ice Cream | 1 979 | 1 939 | 1 879 | 2 027 | 2 218 | 1,4% |
| Milk | 1 828 | 1 657 | 1 433 | 1 276 | 1 187 | -5,3% |
| Mineral water | 2 857 | 2 910 | 2 751 | 2 801 | 2 581 | -1,3% |
| Savoury snacks | 2 361 | 2 212 | 2 249 | 2 132 | 2 189 | -0,9% |
| Soft drinks | 1 987 | 1 962 | 2 039 | 1 964 | 1 871 | -0,7% |
| Tea | 1 733 | 1 834 | 1 728 | 1 674 | 1 621 | -0,8% |
| Yoghurt | 1 977 | 1 774 | 1 952 | 2 116 | 1 844 | -0,9% |
| Average | 1716,6 | 1707,1 | 1714,8 | 1794,6 | 1766,0 | |

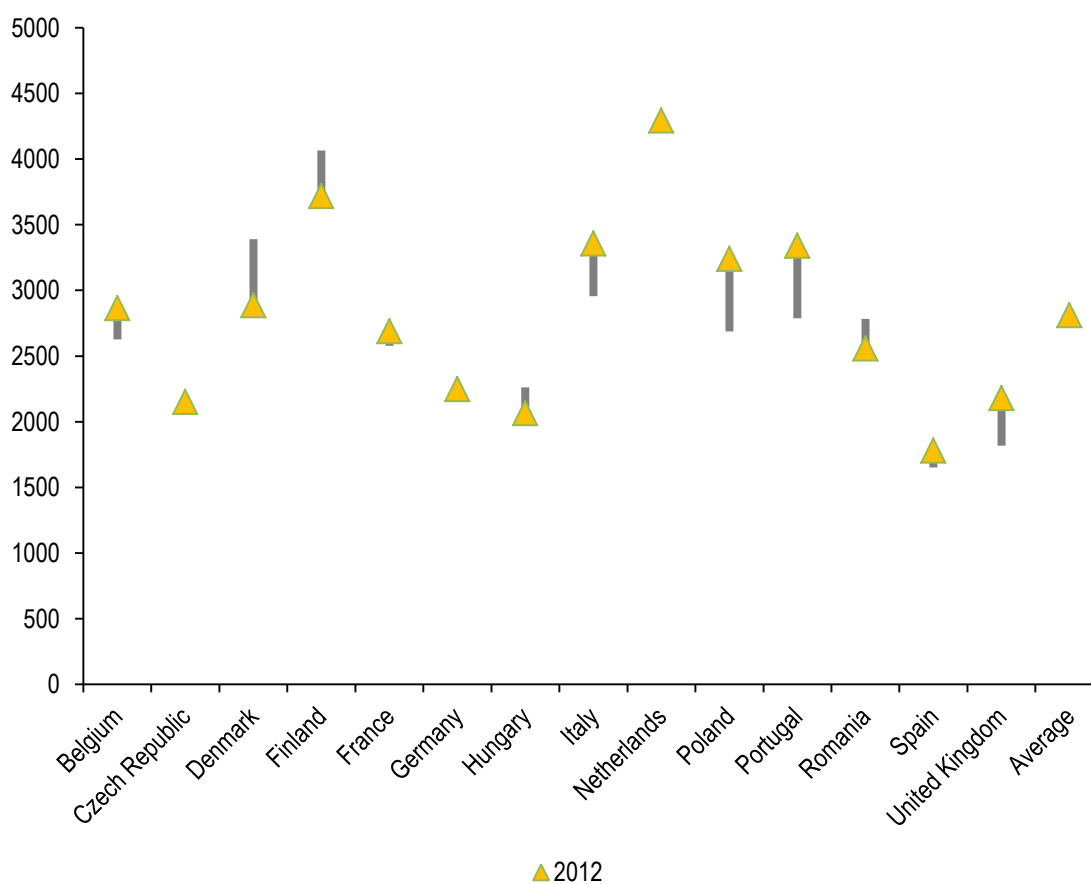
Source: EY analysis based on Euromonitor Passport data

Supplier concentration - United Kingdom - HHI (brand only)
2004 - 2012 Evolution



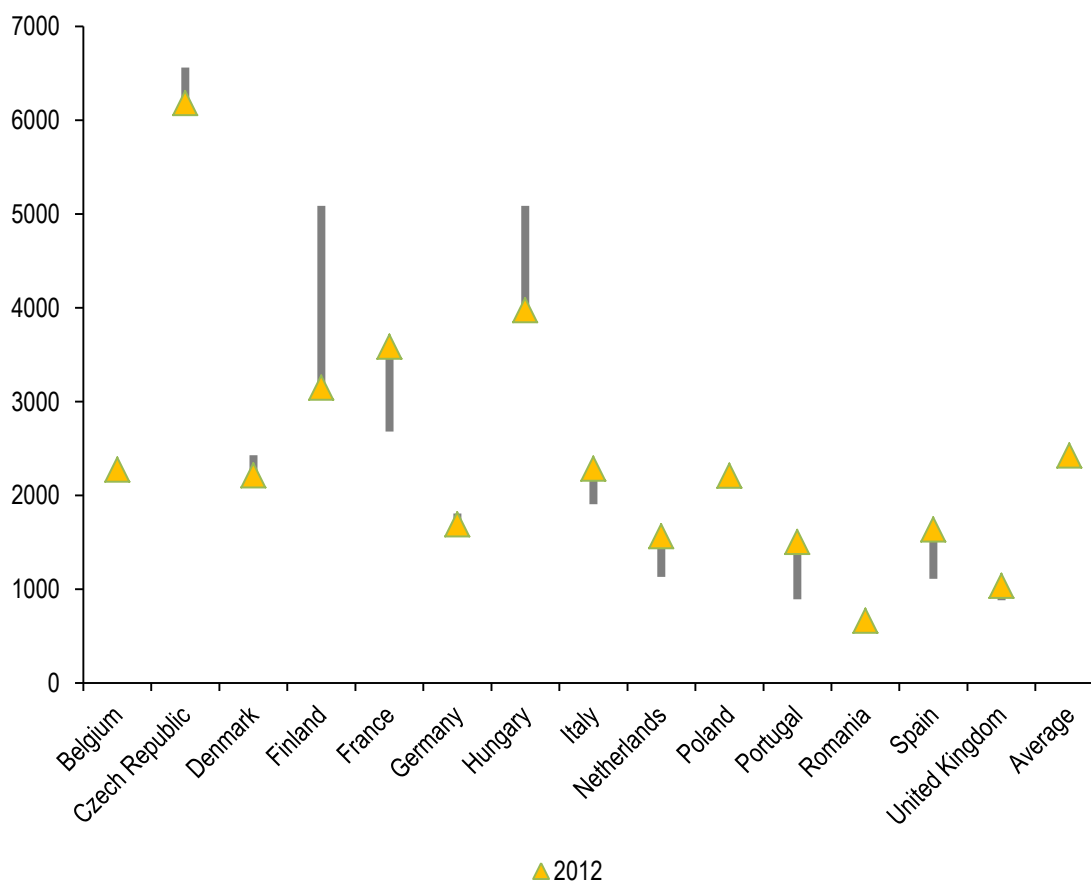
| Supplier concentration HHI | 2004 | 2006 | 2008 | 2010 | 2012 | CAGR 2004-2012 | CAGR 2004-2008 | CAGR 2008-2012 |
|----------------------------|-------------|-------------|-------------|-------------|-------------|-------------------|-------------------|-------------------|
| Baby food | | | | | | | | |
| Belgium | 2628 | 2626 | 2860 | 2830 | 2867 | 1,1% | 2,1% | 0,1% |
| Czech Republic | 2156 | 2179 | 2139 | 2172 | 2152 | 0,0% | -0,2% | 0,1% |
| Denmark | 3391 | 3173 | 2915 | 2793 | 2887 | -2,0% | -3,7% | -0,2% |
| Finland | 4064 | 3872 | 4254 | 4315 | 3719 | -1,1% | 1,1% | -3,3% |
| France | 2578 | 2507 | 2546 | 2672 | 2690 | 0,5% | -0,3% | 1,4% |
| Germany | 2266 | 2257 | 2236 | 2219 | 2249 | -0,1% | -0,3% | 0,1% |
| Hungary | 2261 | 2261 | 2135 | 2171 | 2067 | -1,1% | -1,4% | -0,8% |
| Italy | 2956 | 3213 | 3280 | 3339 | 3358 | 1,6% | 2,6% | 0,6% |
| Netherlands | 4232 | 4041 | 4565 | 4357 | 4295 | 0,2% | 1,9% | -1,5% |
| Poland | 2688 | 2834 | 3270 | 3276 | 3241 | 2,4% | 5,0% | -0,2% |
| Portugal | 2787 | 2770 | 3153 | 3348 | 3341 | 2,3% | 3,1% | 1,5% |
| Romania | 2782 | 2512 | 2530 | 2563 | 2559 | -1,0% | -2,3% | 0,3% |
| Spain | 1651 | 1681 | 1954 | 1832 | 1781 | 1,0% | 4,3% | -2,3% |
| United Kingdom | 1818 | 1888 | 2028 | 2096 | 2180 | 2,3% | 2,8% | 1,8% |
| Average | 2733 | 2701 | 2848 | 2856 | 2813 | 0,4% | 1,0% | -0,3% |

Supplier concentration Baby food - HHI Brand only



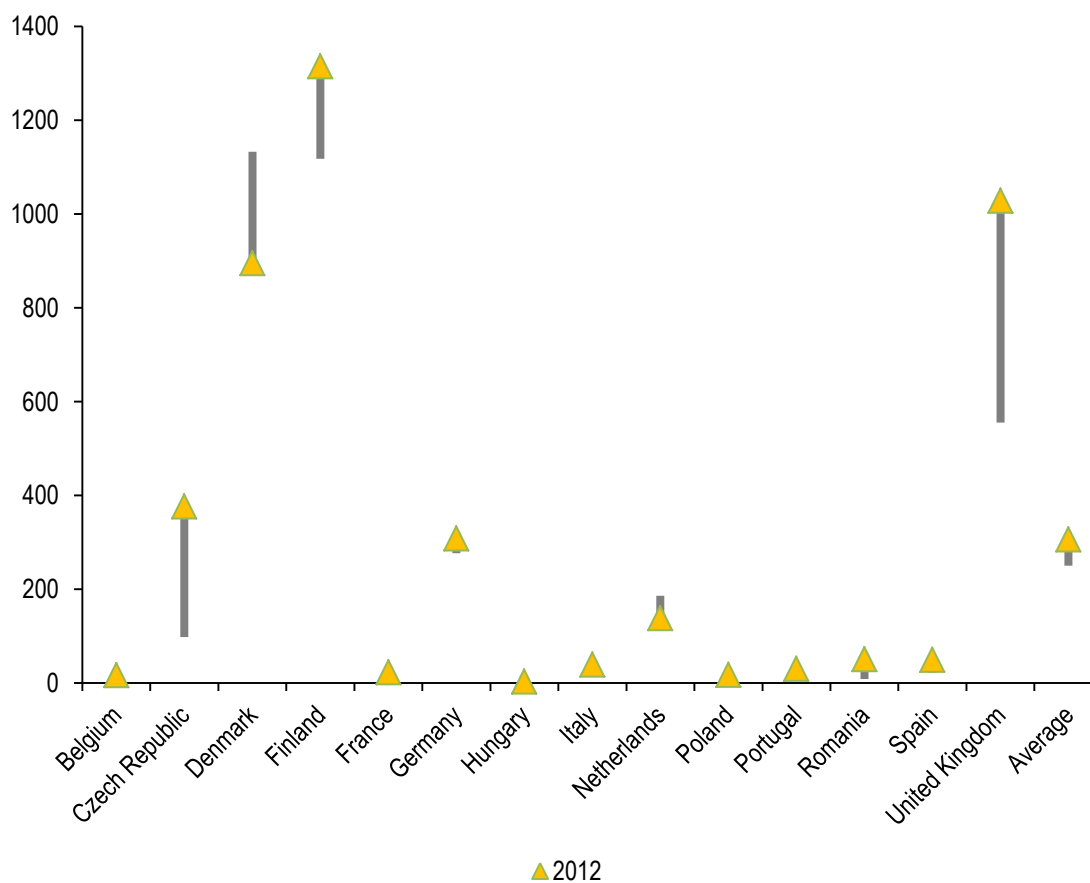
| Supplier concentration HHI | 2004 | 2006 | 2008 | 2010 | 2012 | CAGR 2004-2012 | CAGR 2004-2008 | CAGR 2008-2012 |
|----------------------------|-------------|-------------|-------------|-------------|-------------|-------------------|-------------------|-------------------|
| Biscuits | | | | | | | | |
| Belgium | 2189 | 2319 | 1745 | 2256 | 2275 | 0,5% | -5,5% | 6,9% |
| Czech Republic | 6563 | 6252 | 6386 | 6188 | 6184 | -0,7% | -0,7% | -0,8% |
| Denmark | 2428 | 2553 | 2582 | 2576 | 2214 | -1,1% | 1,5% | -3,8% |
| Finland | 5087 | 5301 | 5406 | 5558 | 3150 | -5,8% | 1,5% | -12,6% |
| France | 2682 | 2993 | 3208 | 3479 | 3584 | 3,7% | 4,6% | 2,8% |
| Germany | 1806 | 2135 | 2059 | 1718 | 1690 | -0,8% | 3,3% | -4,8% |
| Hungary | 5086 | 4900 | 3900 | 4127 | 3976 | -3,0% | -6,4% | 0,5% |
| Italy | 1907 | 2144 | 2171 | 2265 | 2285 | 2,3% | 3,3% | 1,3% |
| Netherlands | 1132 | 1020 | 1290 | 1537 | 1565 | 4,1% | 3,3% | 5,0% |
| Poland | 2150 | 2329 | 2293 | 2327 | 2209 | 0,3% | 1,6% | -0,9% |
| Portugal | 890 | 1304 | 1432 | 1521 | 1503 | 6,8% | 12,6% | 1,2% |
| Romania | 562 | 544 | 590 | 592 | 662 | 2,1% | 1,2% | 2,9% |
| Spain | 1109 | 1455 | 1540 | 1598 | 1638 | 5,0% | 8,6% | 1,5% |
| United Kingdom | 881 | 921 | 933 | 997 | 1035 | 2,0% | 1,4% | 2,6% |
| Average | 2462 | 2584 | 2538 | 2624 | 2426 | -0,2% | 0,8% | -1,1% |

Supplier concentration Biscuits - HHI Brand only



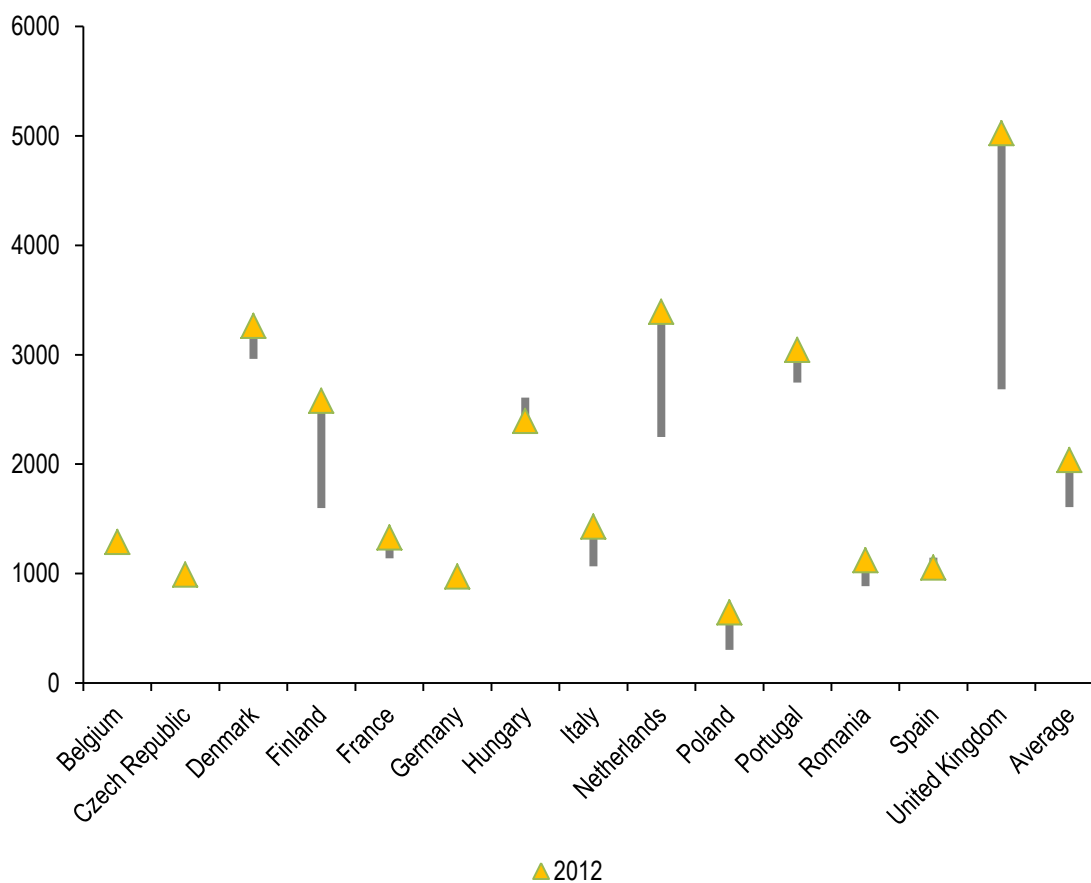
| Supplier concentration HHI | 2004 | 2006 | 2008 | 2010 | 2012 | CAGR 2004-2012 | CAGR 2004-2008 | CAGR 2008-2012 |
|----------------------------|------------|------------|------------|------------|------------|-------------------|-------------------|-------------------|
| Bread | | | | | | | | |
| Belgium | 12 | 15 | 16 | 16 | 16 | 4,0% | 7,5% | 0,6% |
| Czech Republic | 98 | 165 | 227 | 227 | 376 | 18,4% | 23,5% | 13,5% |
| Denmark | 1133 | 1167 | 1178 | 1015 | 895 | -2,9% | 1,0% | -6,6% |
| Finland | 1118 | 1126 | 1187 | 1297 | 1315 | 2,1% | 1,5% | 2,6% |
| France | 24 | 23 | 21 | 21 | 23 | -0,8% | -3,4% | 1,9% |
| Germany | 277 | 320 | 310 | 308 | 308 | 1,3% | 2,9% | -0,2% |
| Hungary | 2 | 2 | 3 | 3 | 3 | 6,4% | 17,4% | -3,5% |
| Italy | 21 | 21 | 26 | 33 | 39 | 8,3% | 6,2% | 10,4% |
| Netherlands | 186 | 168 | 173 | 159 | 138 | -3,7% | -1,8% | -5,5% |
| Poland | 8 | 4 | 6 | 9 | 17 | 9,4% | -9,7% | 32,6% |
| Portugal | 35 | 38 | 35 | 32 | 30 | -1,9% | -0,2% | -3,6% |
| Romania | 8 | 20 | 42 | 54 | 50 | 25,6% | 50,6% | 4,7% |
| Spain | 22 | 29 | 31 | 33 | 50 | 10,7% | 9,3% | 12,1% |
| United Kingdom | 555 | 752 | 1001 | 995 | 1028 | 8,0% | 15,9% | 0,7% |
| Average | 250 | 275 | 304 | 300 | 306 | 2,6% | 5,0% | 0,2% |

Supplier concentration Bread - HHI Brand only



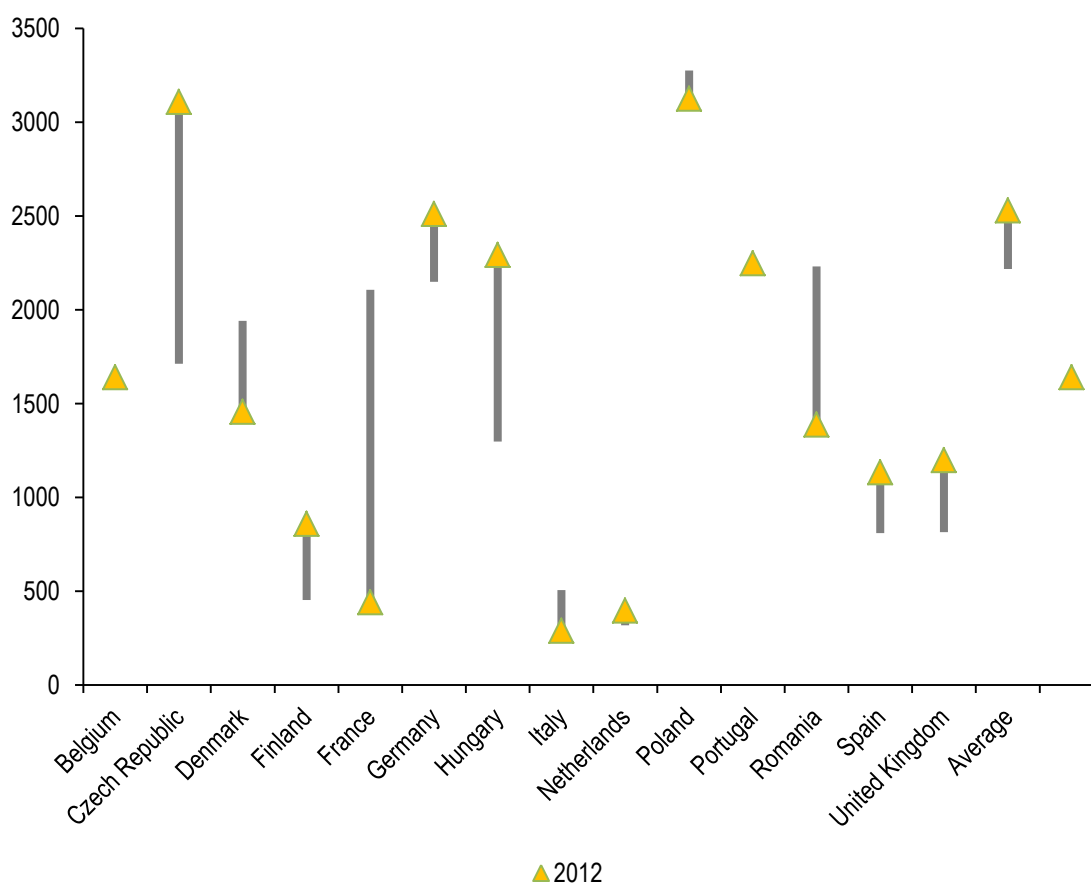
| Supplier concentration HHI | 2004 | 2006 | 2008 | 2010 | 2012 | CAGR 2004-2012 | CAGR 2004-2008 | CAGR 2008-2012 |
|----------------------------|-------------|-------------|-------------|-------------|-------------|-------------------|-------------------|-------------------|
| Butter/margarine | | | | | | | | |
| Belgium | 1310 | 1344 | 1228 | 1220 | 1289 | -0,2% | -1,6% | 1,2% |
| Czech Republic | 929 | 1043 | 1027 | 993 | 991 | 0,8% | 2,5% | -0,9% |
| Denmark | 2962 | 2978 | 2992 | 3067 | 3263 | 1,2% | 0,3% | 2,2% |
| Finland | 1598 | 1661 | 1832 | 1882 | 2580 | 6,2% | 3,5% | 8,9% |
| France | 1139 | 1154 | 1291 | 1316 | 1329 | 1,9% | 3,2% | 0,7% |
| Germany | 894 | 954 | 932 | 985 | 972 | 1,1% | 1,1% | 1,1% |
| Hungary | 2607 | 2475 | 2305 | 2409 | 2395 | -1,1% | -3,0% | 1,0% |
| Italy | 1065 | 1149 | 1118 | 1155 | 1428 | 3,7% | 1,2% | 6,3% |
| Netherlands | 2249 | 2660 | 2783 | 3073 | 3392 | 5,3% | 5,5% | 5,1% |
| Poland | 303 | 306 | 374 | 443 | 644 | 9,9% | 5,4% | 14,6% |
| Portugal | 2745 | 2832 | 3043 | 3144 | 3044 | 1,3% | 2,6% | 0,0% |
| Romania | 883 | 1144 | 1013 | 1041 | 1122 | 3,0% | 3,5% | 2,6% |
| Spain | 1144 | 1207 | 1324 | 1216 | 1056 | -1,0% | 3,7% | -5,5% |
| United Kingdom | 2684 | 2724 | 3098 | 4960 | 5025 | 8,2% | 3,7% | 12,8% |
| Average | 1608 | 1688 | 1740 | 1922 | 2038 | 3,0% | 2,0% | 4,0% |

Supplier concentration Butter/margarine - HHI Brand only



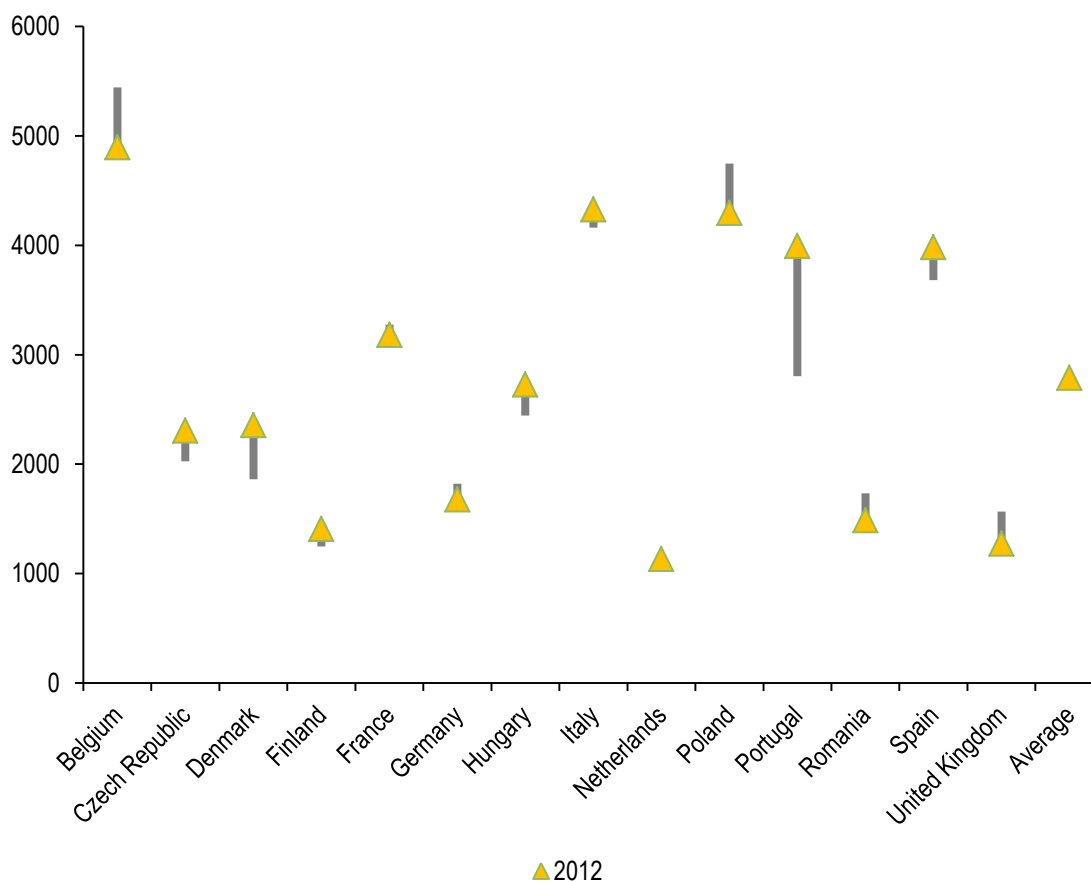
| Supplier concentration HHI | 2004 | 2006 | 2008 | 2010 | 2012 | CAGR 2004-2012 | CAGR 2004-2008 | CAGR 2008-2012 |
|----------------------------|-------------|-------------|-------------|-------------|-------------|-------------------|-------------------|-------------------|
| Canned vegetables | 1577 | 1531 | 1610 | 1603 | 1642 | | | |
| Belgium | 1713 | 2190 | 2643 | 3078 | 3109 | 7,7% | 11,4% | 4,1% |
| Czech Republic | 1941 | 1492 | 1593 | 1551 | 1457 | -3,5% | -4,8% | -2,2% |
| Denmark | 452 | 448 | 540 | 672 | 858 | 8,3% | 4,5% | 12,3% |
| Finland | 2107 | 434 | 450 | 445 | 440 | -17,8% | -32,0% | -0,5% |
| France | 2149 | 2226 | 2296 | 2366 | 2512 | 2,0% | 1,7% | 2,3% |
| Germany | 1298 | 1436 | 1503 | 2051 | 2294 | 7,4% | 3,7% | 11,1% |
| Hungary | 506 | 297 | 177 | 255 | 290 | -6,7% | -23,1% | 13,1% |
| Italy | 319 | 339 | 358 | 385 | 397 | 2,8% | 3,0% | 2,6% |
| Netherlands | 3276 | 3379 | 3064 | 3186 | 3126 | -0,6% | -1,7% | 0,5% |
| Poland | 2246 | 2256 | 2284 | 2275 | 2248 | 0,0% | 0,4% | -0,4% |
| Portugal | 2232 | 2436 | 2721 | 1349 | 1388 | -5,8% | 5,1% | -15,5% |
| Romania | 810 | 1009 | 1020 | 1062 | 1134 | 4,3% | 5,9% | 2,7% |
| Spain | 814 | 1042 | 1196 | 1186 | 1199 | 5,0% | 10,1% | 0,1% |
| United Kingdom | 2217 | 2451 | 2695 | 2586 | 2530 | 1,7% | 5,0% | -1,6% |
| Average | 1577 | 1531 | 1610 | 1603 | 1642 | 0,5% | 0,5% | 0,5% |

Supplier concentration Canned vegetables - HHI Brand only

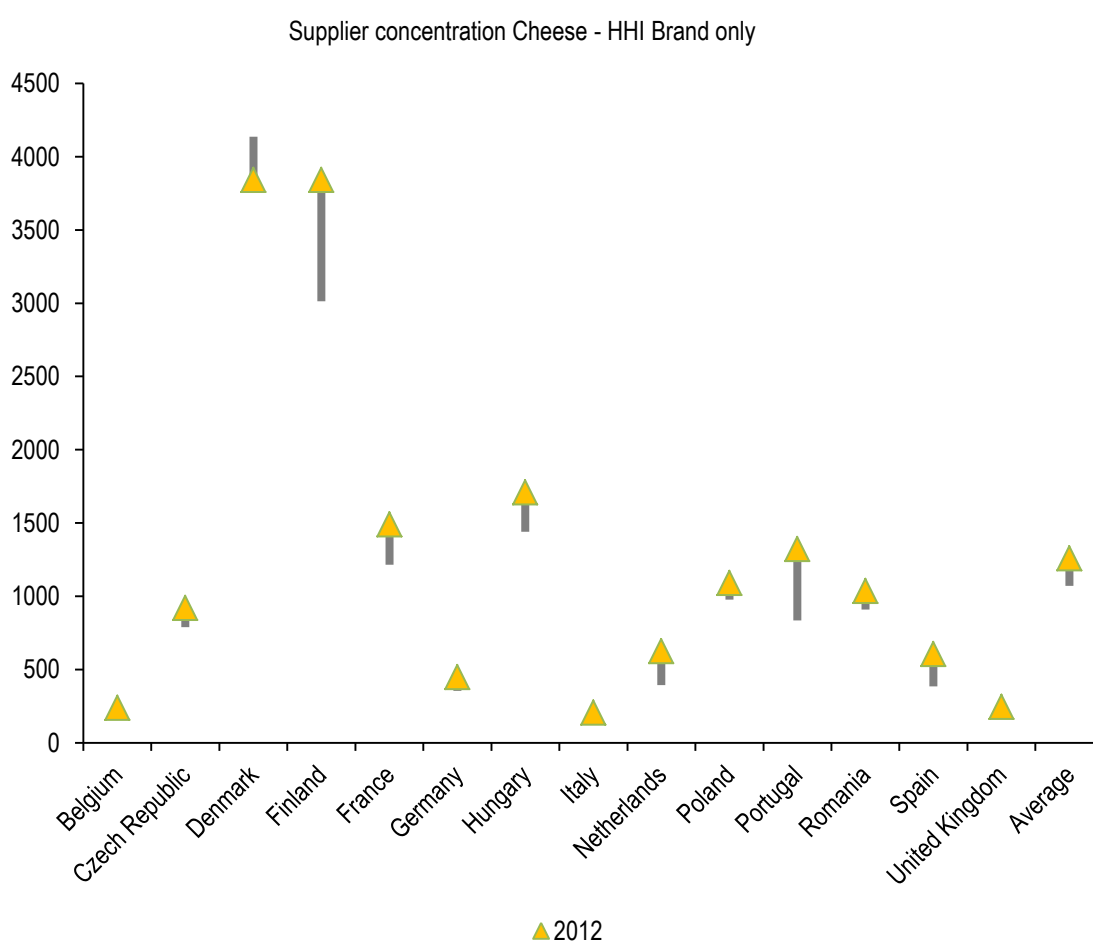


| Supplier concentration HHI | 2004 | 2006 | 2008 | 2010 | 2012 | CAGR 2004-2012 | CAGR 2004-2008 | CAGR 2008-2012 |
|----------------------------|-------------|-------------|-------------|-------------|-------------|-------------------|-------------------|-------------------|
| Cereals | | | | | | | | |
| Belgium | 5443 | 5465 | 5198 | 5141 | 4895 | -1,3% | -1,1% | -1,5% |
| Czech Republic | 2026 | 2073 | 2309 | 2354 | 2308 | 1,6% | 3,3% | 0,0% |
| Denmark | 1861 | 1664 | 2010 | 2134 | 2356 | 3,0% | 1,9% | 4,1% |
| Finland | 1247 | 1439 | 1360 | 1406 | 1408 | 1,5% | 2,2% | 0,9% |
| France | 3275 | 3305 | 3318 | 3271 | 3182 | -0,4% | 0,3% | -1,0% |
| Germany | 1821 | 1757 | 1664 | 1675 | 1677 | -1,0% | -2,2% | 0,2% |
| Hungary | 2444 | 2744 | 2660 | 2594 | 2727 | 1,4% | 2,1% | 0,6% |
| Italy | 4161 | 4335 | 4457 | 4258 | 4328 | 0,5% | 1,7% | -0,7% |
| Netherlands | 1087 | 1088 | 1100 | 1194 | 1134 | 0,5% | 0,3% | 0,8% |
| Poland | 4748 | 4550 | 4253 | 4265 | 4298 | -1,2% | -2,7% | 0,3% |
| Portugal | 2804 | 3530 | 3564 | 3894 | 3995 | 4,5% | 6,2% | 2,9% |
| Romania | 1733 | 1557 | 1413 | 1437 | 1487 | -1,9% | -5,0% | 1,3% |
| Spain | 3683 | 3743 | 3780 | 3431 | 3983 | 1,0% | 0,7% | 1,3% |
| United Kingdom | 1565 | 1430 | 1416 | 1341 | 1274 | -2,5% | -2,5% | -2,6% |
| Average | 2707 | 2763 | 2750 | 2743 | 2789 | 0,4% | 0,4% | 0,4% |

Supplier concentration Cereals - HHI Brand only

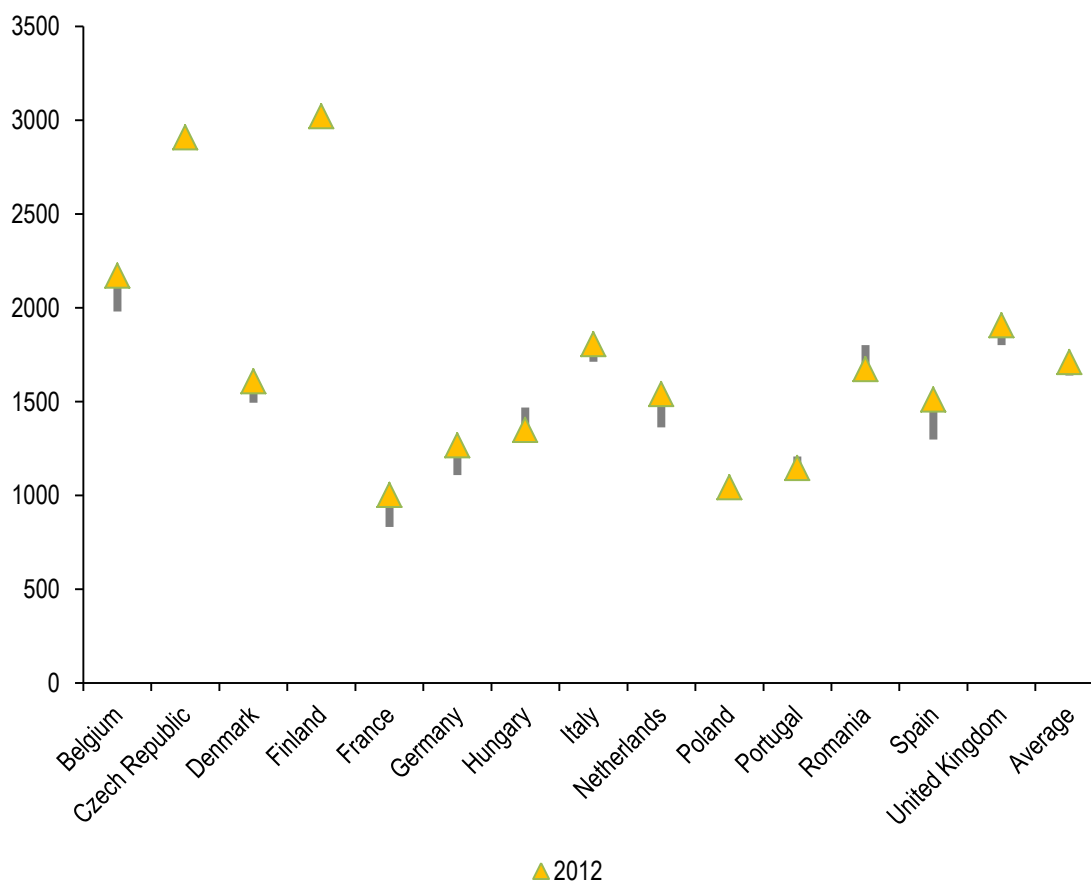


| Supplier concentration HHI | 2004 | 2006 | 2008 | 2010 | 2012 | CAGR 2004-2012 | CAGR 2004-2008 | CAGR 2008-2012 |
|----------------------------|-------------|-------------|-------------|-------------|-------------|-------------------|-------------------|-------------------|
| Cheese | | | | | | | | |
| Belgium | 208 | 249 | 264 | 273 | 238 | 1,7% | 6,1% | -2,6% |
| Czech Republic | 789 | 792 | 856 | 891 | 920 | 1,9% | 2,1% | 1,8% |
| Denmark | 4136 | 4357 | 4026 | 3987 | 3843 | -0,9% | -0,7% | -1,2% |
| Finland | 3014 | 3239 | 3604 | 3644 | 3842 | 3,1% | 4,6% | 1,6% |
| France | 1216 | 1487 | 1523 | 1569 | 1491 | 2,6% | 5,8% | -0,5% |
| Germany | 354 | 433 | 424 | 444 | 447 | 3,0% | 4,6% | 1,4% |
| Hungary | 1440 | 1799 | 1681 | 1645 | 1709 | 2,2% | 3,9% | 0,4% |
| Italy | 131 | 194 | 185 | 184 | 205 | 5,8% | 8,9% | 2,7% |
| Netherlands | 393 | 424 | 683 | 611 | 625 | 6,0% | 14,8% | -2,2% |
| Poland | 977 | 932 | 949 | 1057 | 1090 | 1,4% | -0,7% | 3,5% |
| Portugal | 835 | 936 | 1086 | 1312 | 1321 | 5,9% | 6,8% | 5,0% |
| Romania | 909 | 1173 | 1230 | 1119 | 1036 | 1,6% | 7,8% | -4,2% |
| Spain | 386 | 446 | 435 | 591 | 606 | 5,8% | 3,1% | 8,6% |
| United Kingdom | 201 | 206 | 219 | 250 | 244 | 2,4% | 2,1% | 2,7% |
| Average | 1071 | 1191 | 1226 | 1256 | 1258 | 2,0% | 3,4% | 0,7% |



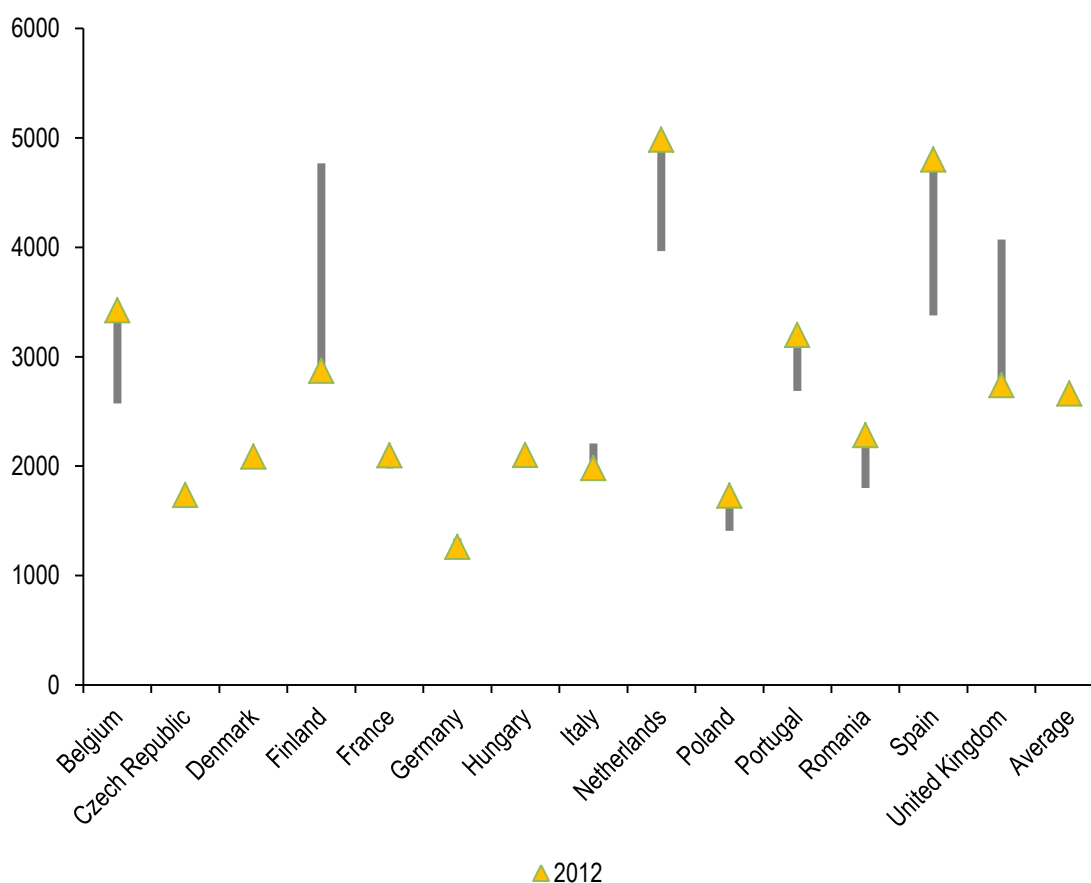
| Supplier concentration HHI | 2004 | 2006 | 2008 | 2010 | 2012 | CAGR 2004-2012 | CAGR 2004-2008 | CAGR 2008-2012 |
|----------------------------|-------------|-------------|-------------|-------------|-------------|-------------------|-------------------|-------------------|
| Chocolate | | | | | | | | |
| Belgium | 1981 | 1923 | 2157 | 2108 | 2171 | 1,2% | 2,2% | 0,2% |
| Czech Republic | 2857 | 2726 | 2876 | 2874 | 2909 | 0,2% | 0,2% | 0,3% |
| Denmark | 1495 | 1505 | 1554 | 1512 | 1608 | 0,9% | 1,0% | 0,9% |
| Finland | 2971 | 2978 | 3032 | 3154 | 3021 | 0,2% | 0,5% | -0,1% |
| France | 832 | 870 | 896 | 958 | 1002 | 2,3% | 1,9% | 2,8% |
| Germany | 1108 | 1225 | 1242 | 1264 | 1268 | 1,7% | 2,9% | 0,5% |
| Hungary | 1469 | 1446 | 1371 | 1374 | 1349 | -1,1% | -1,7% | -0,4% |
| Italy | 1712 | 1733 | 1842 | 1846 | 1806 | 0,7% | 1,8% | -0,5% |
| Netherlands | 1362 | 1392 | 1418 | 1443 | 1540 | 1,5% | 1,0% | 2,1% |
| Poland | 1055 | 1099 | 1109 | 1113 | 1044 | -0,1% | 1,3% | -1,5% |
| Portugal | 1207 | 1073 | 1052 | 1163 | 1145 | -0,7% | -3,4% | 2,1% |
| Romania | 1801 | 1654 | 1372 | 1418 | 1673 | -0,9% | -6,6% | 5,1% |
| Spain | 1298 | 1345 | 1364 | 1495 | 1511 | 1,9% | 1,2% | 2,6% |
| United Kingdom | 1801 | 1754 | 1751 | 1951 | 1908 | 0,7% | -0,7% | 2,2% |
| Average | 1639 | 1623 | 1645 | 1691 | 1711 | 0,5% | 0,1% | 1,0% |

Supplier concentration Chocolate - HHI Brand only



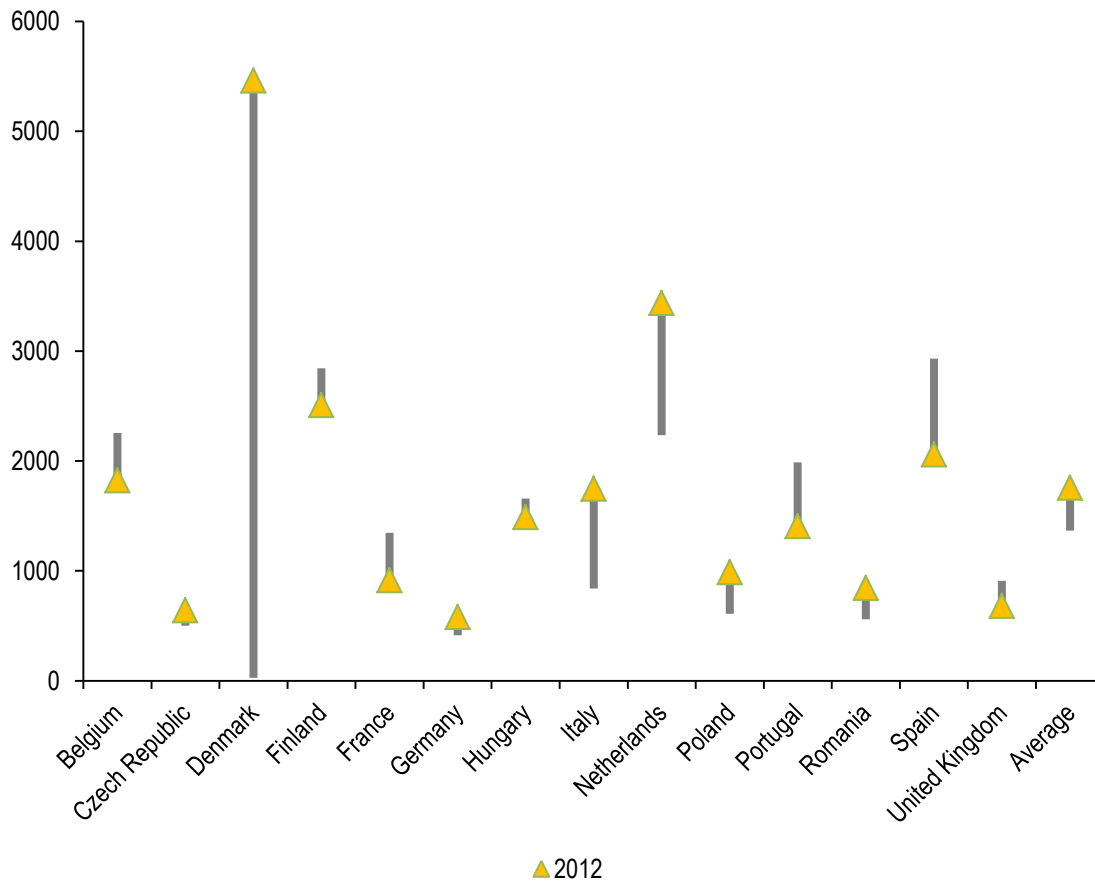
| Supplier concentration HHI | 2004 | 2006 | 2008 | 2010 | 2012 | CAGR 2004-2012 | CAGR 2004-2008 | CAGR 2008-2012 |
|----------------------------|-------------|-------------|-------------|-------------|-------------|-------------------|-------------------|-------------------|
| Coffee | | | | | | | | |
| Belgium | 2574 | 2569 | 2967 | 3248 | 3423 | 3,6% | 3,6% | 3,6% |
| Czech Republic | 1783 | 1702 | 1649 | 1752 | 1737 | -0,3% | -1,9% | 1,3% |
| Denmark | 2046 | 2162 | 2152 | 2151 | 2087 | 0,2% | 1,3% | -0,8% |
| Finland | 4767 | 4827 | 4929 | 4969 | 2871 | -6,1% | 0,8% | -12,6% |
| France | 1980 | 2016 | 2057 | 2061 | 2098 | 0,7% | 1,0% | 0,5% |
| Germany | 1338 | 1360 | 1367 | 1327 | 1263 | -0,7% | 0,5% | -2,0% |
| Hungary | 2131 | 2036 | 2039 | 2043 | 2101 | -0,2% | -1,1% | 0,8% |
| Italy | 2206 | 2252 | 2261 | 2228 | 1981 | -1,3% | 0,6% | -3,2% |
| Netherlands | 3965 | 3943 | 4569 | 5059 | 4985 | 2,9% | 3,6% | 2,2% |
| Poland | 1408 | 1577 | 1615 | 1688 | 1731 | 2,6% | 3,5% | 1,7% |
| Portugal | 2687 | 2870 | 3002 | 2847 | 3198 | 2,2% | 2,8% | 1,6% |
| Romania | 1801 | 1644 | 2134 | 2328 | 2283 | 3,0% | 4,3% | 1,7% |
| Spain | 3376 | 3694 | 4031 | 4546 | 4804 | 4,5% | 4,5% | 4,5% |
| United Kingdom | 4070 | 3812 | 3580 | 3227 | 2741 | -4,8% | -3,2% | -6,5% |
| Average | 2581 | 2605 | 2739 | 2820 | 2664 | 0,4% | 1,5% | -0,7% |

Supplier concentration Coffee - HHI Brand only

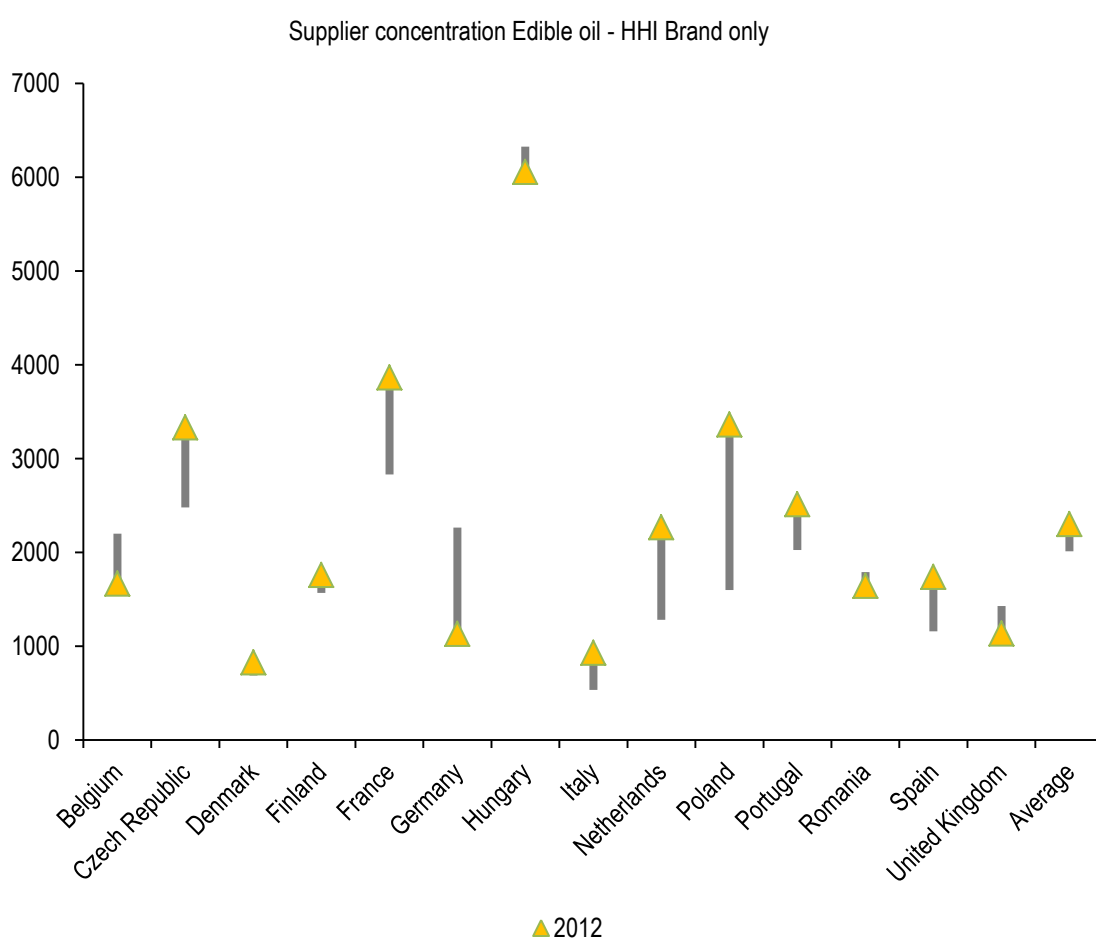


| Supplier concentration HHI | 2004 | 2006 | 2008 | 2010 | 2012 | CAGR 2004-2012 | CAGR 2004-2008 | CAGR 2008-2012 |
|----------------------------|-------------|-------------|-------------|-------------|-------------|-------------------|-------------------|-------------------|
| Desserts | | | | | | | | |
| Belgium | 2254 | 1938 | 1922 | 1841 | 1824 | -2,6% | -3,9% | -1,3% |
| Czech Republic | 501 | 542 | 546 | 566 | 640 | 3,1% | 2,2% | 4,1% |
| Denmark | 27 | 42 | 5331 | 5079 | 5462 | 94,6% | 276,2% | 0,6% |
| Finland | 2843 | 2584 | 2576 | 2325 | 2509 | -1,6% | -2,4% | -0,7% |
| France | 1347 | 1167 | 1038 | 930 | 916 | -4,7% | -6,3% | -3,1% |
| Germany | 413 | 559 | 631 | 648 | 580 | 4,3% | 11,2% | -2,1% |
| Hungary | 1658 | 1752 | 1467 | 1493 | 1490 | -1,3% | -3,0% | 0,4% |
| Italy | 840 | 994 | 1311 | 1460 | 1747 | 9,6% | 11,8% | 7,4% |
| Netherlands | 2236 | 1954 | 3407 | 3533 | 3440 | 5,5% | 11,1% | 0,2% |
| Poland | 610 | 664 | 811 | 857 | 989 | 6,2% | 7,4% | 5,1% |
| Portugal | 1988 | 1322 | 1336 | 1312 | 1406 | -4,2% | -9,5% | 1,3% |
| Romania | 558 | 906 | 1034 | 918 | 846 | 5,3% | 16,7% | -4,9% |
| Spain | 2930 | 2330 | 2151 | 2030 | 2060 | -4,3% | -7,4% | -1,1% |
| United Kingdom | 908 | 844 | 802 | 742 | 681 | -3,5% | -3,1% | -4,0% |
| Average | 1365 | 1257 | 1740 | 1695 | 1756 | 3,2% | 6,3% | 0,2% |

Supplier concentration Desserts - HHI Brand only

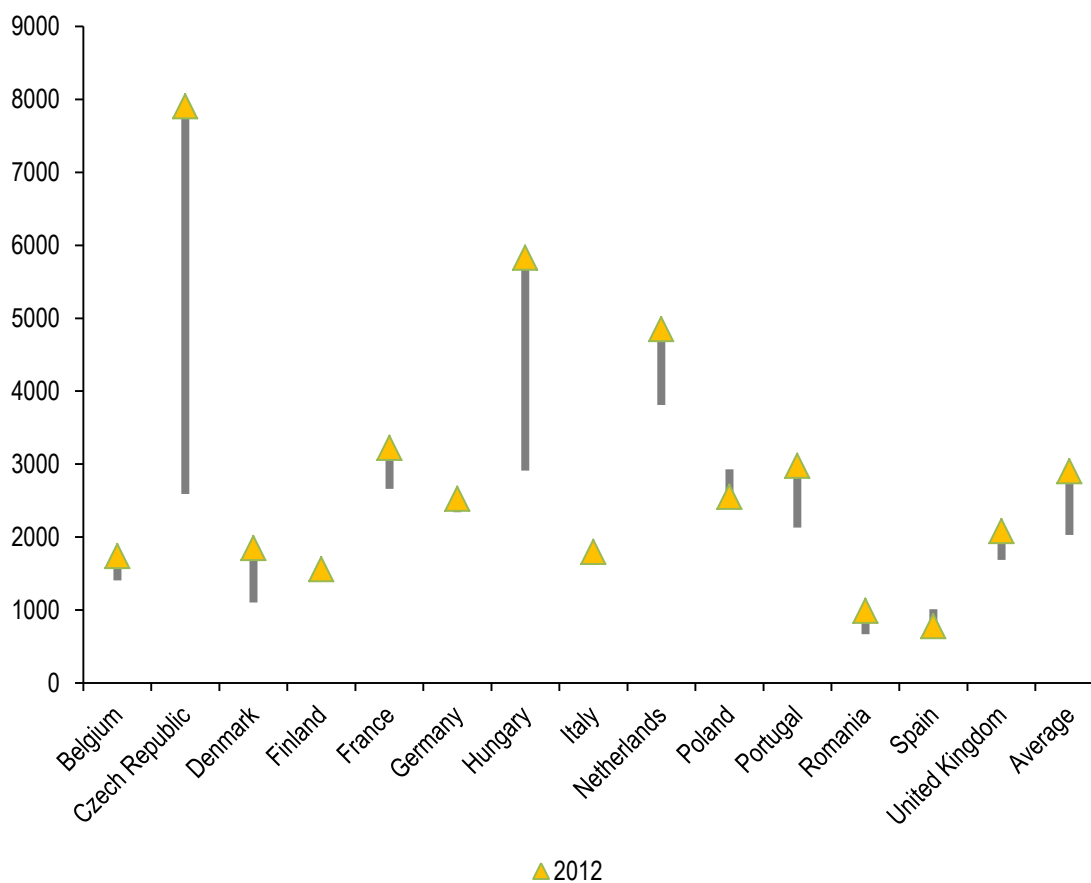


| Supplier concentration HHI | 2004 | 2006 | 2008 | 2010 | 2012 | CAGR 2004-2012 | CAGR 2004-2008 | CAGR 2008-2012 |
|----------------------------|-------------|-------------|-------------|-------------|-------------|-------------------|-------------------|-------------------|
| Edible oil | | | | | | | | |
| Belgium | 2198 | 2075 | 1609 | 1667 | 1668 | -3,4% | -7,5% | 0,9% |
| Czech Republic | 2479 | 2822 | 3030 | 3023 | 3333 | 3,8% | 5,1% | 2,4% |
| Denmark | 688 | 770 | 778 | 765 | 826 | 2,3% | 3,1% | 1,5% |
| Finland | 1567 | 1500 | 1634 | 1683 | 1759 | 1,5% | 1,1% | 1,9% |
| France | 2832 | 3613 | 3793 | 4343 | 3867 | 4,0% | 7,6% | 0,5% |
| Germany | 2263 | 1365 | 1009 | 1184 | 1130 | -8,3% | -18,3% | 2,9% |
| Hungary | 6326 | 7362 | 6556 | 5802 | 6056 | -0,5% | 0,9% | -2,0% |
| Italy | 534 | 540 | 928 | 844 | 931 | 7,2% | 14,8% | 0,1% |
| Netherlands | 1280 | 1534 | 1921 | 2034 | 2266 | 7,4% | 10,7% | 4,2% |
| Poland | 1599 | 1528 | 2825 | 3252 | 3364 | 9,7% | 15,3% | 4,5% |
| Portugal | 2025 | 2012 | 2158 | 2563 | 2514 | 2,7% | 1,6% | 3,9% |
| Romania | 1788 | 1551 | 2003 | 1613 | 1644 | -1,0% | 2,9% | -4,8% |
| Spain | 1157 | 1307 | 1416 | 1483 | 1739 | 5,2% | 5,2% | 5,3% |
| United Kingdom | 1428 | 1295 | 1181 | 993 | 1134 | -2,8% | -4,6% | -1,0% |
| Average | 2012 | 2091 | 2203 | 2232 | 2302 | 1,7% | 2,3% | 1,1% |



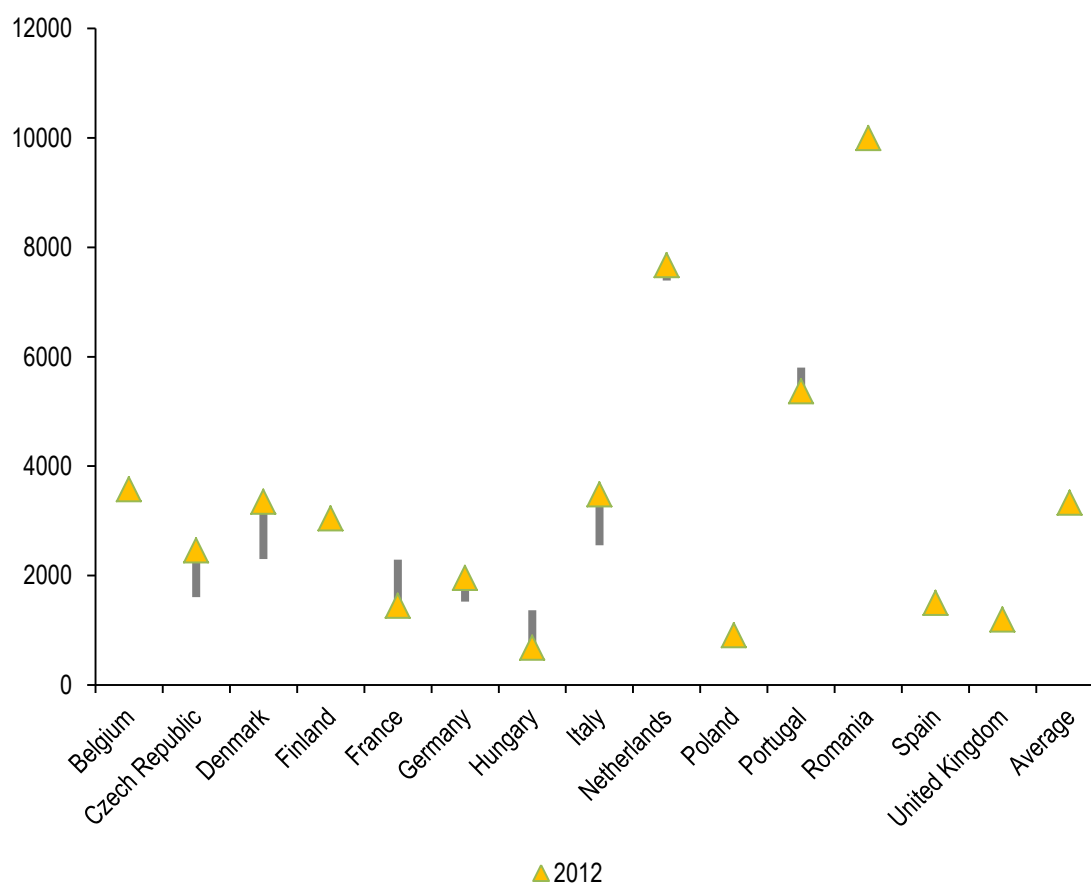
| Supplier concentration HHI | 2004 | 2006 | 2008 | 2010 | 2012 | CAGR 2004-2012 | CAGR 2004-2008 | CAGR 2008-2012 |
|-------------------------------|-------------|-------------|-------------|-------------|-------------|-------------------|-------------------|-------------------|
| Frozen pizzas/starters | | | | | | | | |
| Belgium | 1407 | 1791 | 1489 | 1795 | 1740 | 2,7% | 1,4% | 4,0% |
| Czech Republic | 2590 | 3960 | 8743 | 8502 | 7904 | 15,0% | 35,5% | -2,5% |
| Denmark | 1104 | 1338 | 1486 | 1696 | 1849 | 6,7% | 7,7% | 5,6% |
| Finland | 1459 | 1512 | 1550 | 1607 | 1560 | 0,8% | 1,5% | 0,2% |
| France | 2662 | 2564 | 2620 | 2972 | 3222 | 2,4% | -0,4% | 5,3% |
| Germany | 2340 | 2276 | 2276 | 2472 | 2524 | 0,9% | -0,7% | 2,6% |
| Hungary | 2913 | 2917 | 5133 | 5941 | 5830 | 9,1% | 15,2% | 3,2% |
| Italy | 1686 | 1795 | 1839 | 1867 | 1797 | 0,8% | 2,2% | -0,6% |
| Netherlands | 3811 | 4739 | 5396 | 5113 | 4851 | 3,1% | 9,1% | -2,6% |
| Poland | 2928 | 2760 | 2682 | 2624 | 2553 | -1,7% | -2,2% | -1,2% |
| Portugal | 2130 | 1948 | 2999 | 3021 | 2979 | 4,3% | 8,9% | -0,2% |
| Romania | 666 | 579 | 549 | 709 | 990 | 5,1% | -4,7% | 15,9% |
| Spain | 1011 | 881 | 860 | 760 | 778 | -3,2% | -4,0% | -2,5% |
| United Kingdom | 1686 | 1769 | 1667 | 2005 | 2080 | 2,7% | -0,3% | 5,7% |
| Average | 2028 | 2202 | 2806 | 2935 | 2904 | 4,6% | 8,5% | 0,9% |

Supplier concentration Frozen pizzas/starters - HHI Brand only

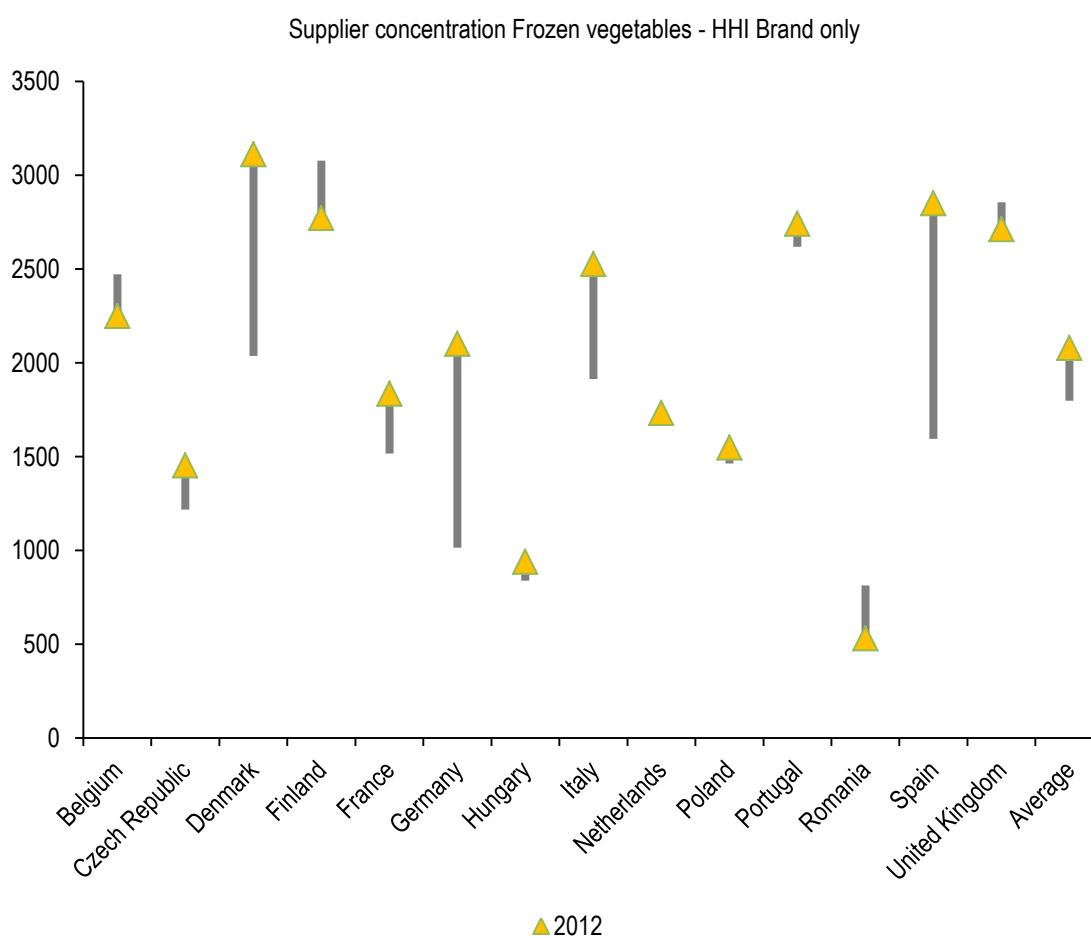


| Supplier concentration HHI | 2004 | 2006 | 2008 | 2010 | 2012 | CAGR 2004-2012 | CAGR 2004-2008 | CAGR 2008-2012 |
|----------------------------------|-------------|-------------|-------------|-------------|-------------|-------------------|-------------------|-------------------|
| Frozen ready cooked meals | | | | | | | | |
| Belgium | 3496 | 3975 | 4223 | 4247 | 3577 | 0,3% | 4,8% | -4,1% |
| Czech Republic | 1604 | 1825 | 1760 | 1963 | 2460 | 5,5% | 2,3% | 8,7% |
| Denmark | 2300 | 2325 | 2512 | 3192 | 3350 | 4,8% | 2,2% | 7,5% |
| Finland | 2865 | 2874 | 2929 | 2998 | 3043 | 0,8% | 0,6% | 1,0% |
| France | 2288 | 1670 | 1452 | 1490 | 1444 | -5,6% | -10,7% | -0,1% |
| Germany | 1522 | 1626 | 2073 | 2833 | 1958 | 3,2% | 8,0% | -1,4% |
| Hungary | 1363 | 1342 | 1152 | 1363 | 683 | -8,3% | -4,1% | -12,3% |
| Italy | 2551 | 2508 | 2532 | 2658 | 3485 | 4,0% | -0,2% | 8,3% |
| Netherlands | 7392 | 8403 | 8789 | 8251 | 7674 | 0,5% | 4,4% | -3,3% |
| Poland | 936 | 978 | 954 | 926 | 910 | -0,3% | 0,5% | -1,2% |
| Portugal | 5799 | 5194 | 5188 | 5121 | 5367 | -1,0% | -2,7% | 0,9% |
| Romania | 10000 | 10000 | 10000 | 10000 | 10000 | 0,0% | 0,0% | 0,0% |
| Spain | 1519 | 1680 | 1515 | 1452 | 1498 | -0,2% | -0,1% | -0,3% |
| United Kingdom | 1223 | 1207 | 1048 | 1171 | 1196 | -0,3% | -3,8% | 3,4% |
| Average | 3204 | 3258 | 3295 | 3405 | 3332 | 0,5% | 0,7% | 0,3% |

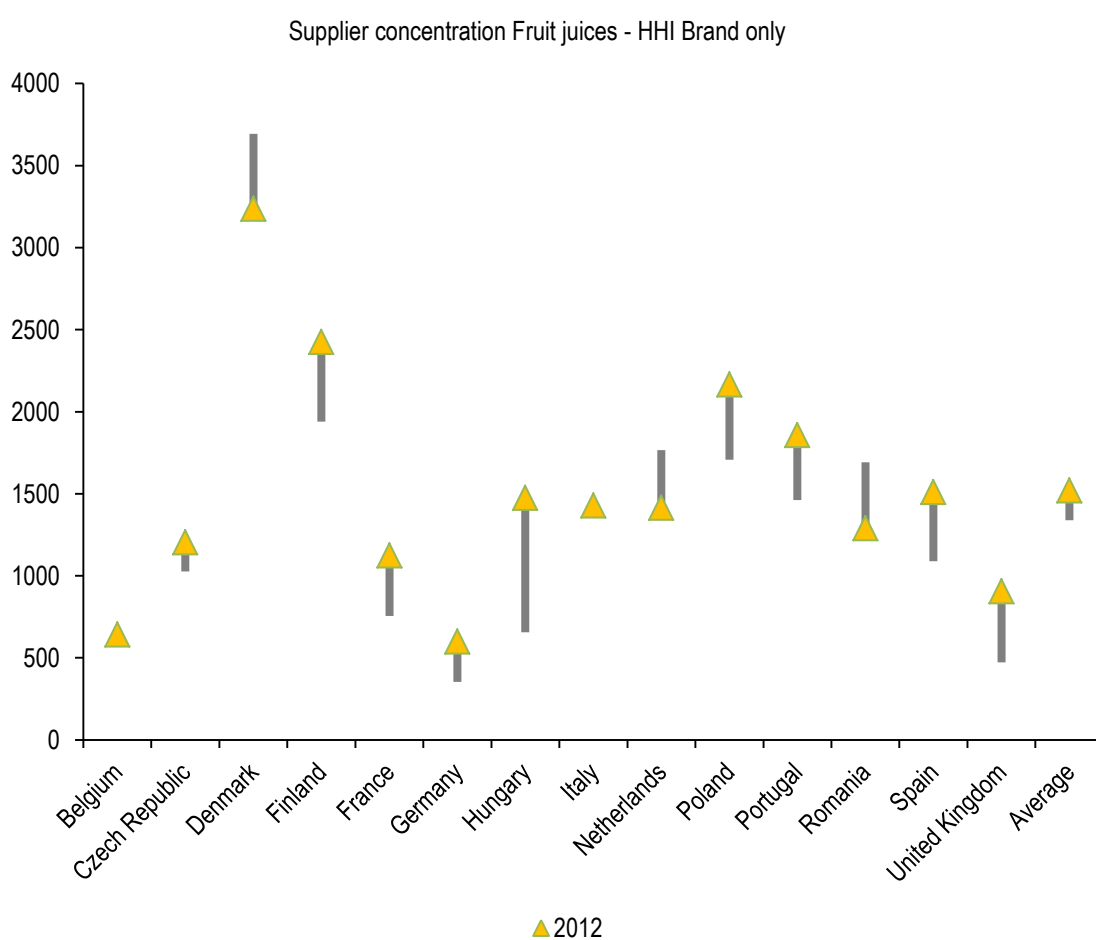
Supplier concentration Frozen ready cooked meals - HHI Brand only



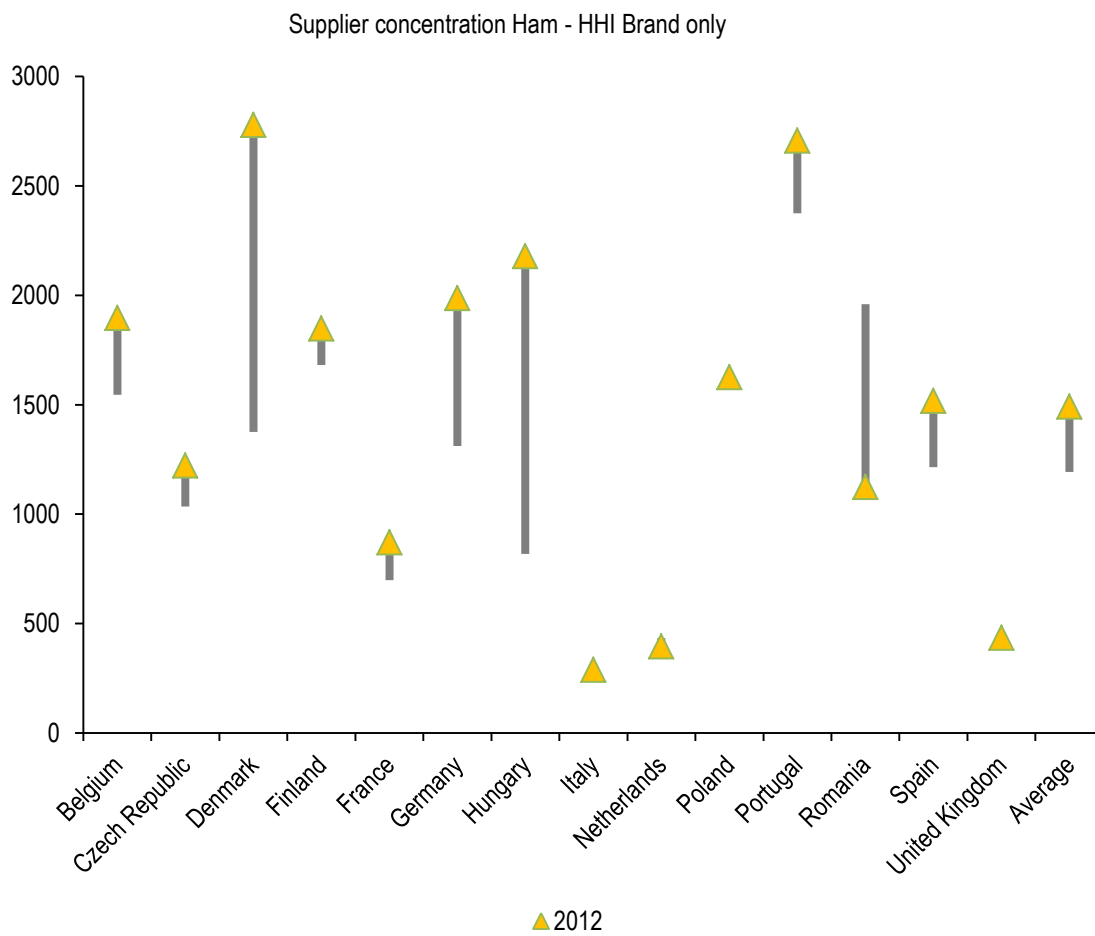
| Supplier concentration HHI | 2004 | 2006 | 2008 | 2010 | 2012 | CAGR 2004-2012 | CAGR 2004-2008 | CAGR 2008-2012 |
|----------------------------|-------------|-------------|-------------|-------------|-------------|-------------------|-------------------|-------------------|
| Frozen vegetables | | | | | | | | |
| Belgium | 2472 | 2526 | 2486 | 2477 | 2250 | -1,2% | 0,1% | -2,5% |
| Czech Republic | 1217 | 1371 | 1421 | 1456 | 1453 | 2,2% | 3,9% | 0,6% |
| Denmark | 2036 | 2281 | 2324 | 2356 | 3112 | 5,4% | 3,4% | 7,6% |
| Finland | 3078 | 3247 | 3410 | 2757 | 2772 | -1,3% | 2,6% | -5,1% |
| France | 1516 | 1542 | 1526 | 1764 | 1835 | 2,4% | 0,2% | 4,7% |
| Germany | 1014 | 1111 | 1806 | 2139 | 2101 | 9,5% | 15,5% | 3,9% |
| Hungary | 838 | 1130 | 976 | 986 | 939 | 1,4% | 3,9% | -1,0% |
| Italy | 1914 | 1906 | 2005 | 2338 | 2527 | 3,5% | 1,2% | 6,0% |
| Netherlands | 1731 | 1681 | 1680 | 1588 | 1733 | 0,0% | -0,7% | 0,8% |
| Poland | 1463 | 1596 | 1579 | 1518 | 1549 | 0,7% | 1,9% | -0,5% |
| Portugal | 2619 | 2811 | 2668 | 2831 | 2743 | 0,6% | 0,5% | 0,7% |
| Romania | 813 | 775 | 546 | 544 | 532 | -5,2% | -9,5% | -0,6% |
| Spain | 1595 | 1697 | 1791 | 1728 | 2851 | 7,5% | 2,9% | 12,3% |
| United Kingdom | 2856 | 2974 | 2831 | 2676 | 2712 | -0,6% | -0,2% | -1,1% |
| Average | 1797 | 1903 | 1932 | 1940 | 2079 | 1,8% | 1,8% | 1,9% |



| Supplier concentration HHI | 2004 | 2006 | 2008 | 2010 | 2012 | CAGR 2004-2012 | CAGR 2004-2008 | CAGR 2008-2012 |
|----------------------------|-------------|-------------|-------------|-------------|-------------|-------------------|-------------------|-------------------|
| Fruit Juices | | | | | | | | |
| Belgium | 665 | 683 | 688 | 688 | 643 | -0,4% | 0,8% | -1,7% |
| Czech Republic | 1026 | 1018 | 1116 | 1196 | 1203 | 2,0% | 2,1% | 1,9% |
| Denmark | 3694 | 3416 | 3587 | 3399 | 3237 | -1,6% | -0,7% | -2,5% |
| Finland | 1940 | 2087 | 2118 | 2510 | 2426 | 2,8% | 2,2% | 3,5% |
| France | 754 | 901 | 957 | 1029 | 1124 | 5,1% | 6,1% | 4,1% |
| Germany | 354 | 434 | 522 | 597 | 599 | 6,8% | 10,2% | 3,5% |
| Hungary | 656 | 843 | 1287 | 1400 | 1474 | 10,7% | 18,4% | 3,5% |
| Italy | 1454 | 1509 | 1531 | 1526 | 1428 | -0,2% | 1,3% | -1,7% |
| Netherlands | 1765 | 1617 | 1366 | 1501 | 1415 | -2,7% | -6,2% | 0,9% |
| Poland | 1707 | 2467 | 2482 | 2690 | 2166 | 3,0% | 9,8% | -3,4% |
| Portugal | 1462 | 1528 | 1316 | 1976 | 1858 | 3,0% | -2,6% | 9,0% |
| Romania | 1691 | 1577 | 1328 | 1398 | 1289 | -3,3% | -5,9% | -0,7% |
| Spain | 1089 | 1110 | 1092 | 1377 | 1510 | 4,2% | 0,1% | 8,4% |
| United Kingdom | 472 | 595 | 785 | 890 | 905 | 8,5% | 13,6% | 3,6% |
| Average | 1338 | 1413 | 1441 | 1584 | 1520 | 1,6% | 1,9% | 1,3% |

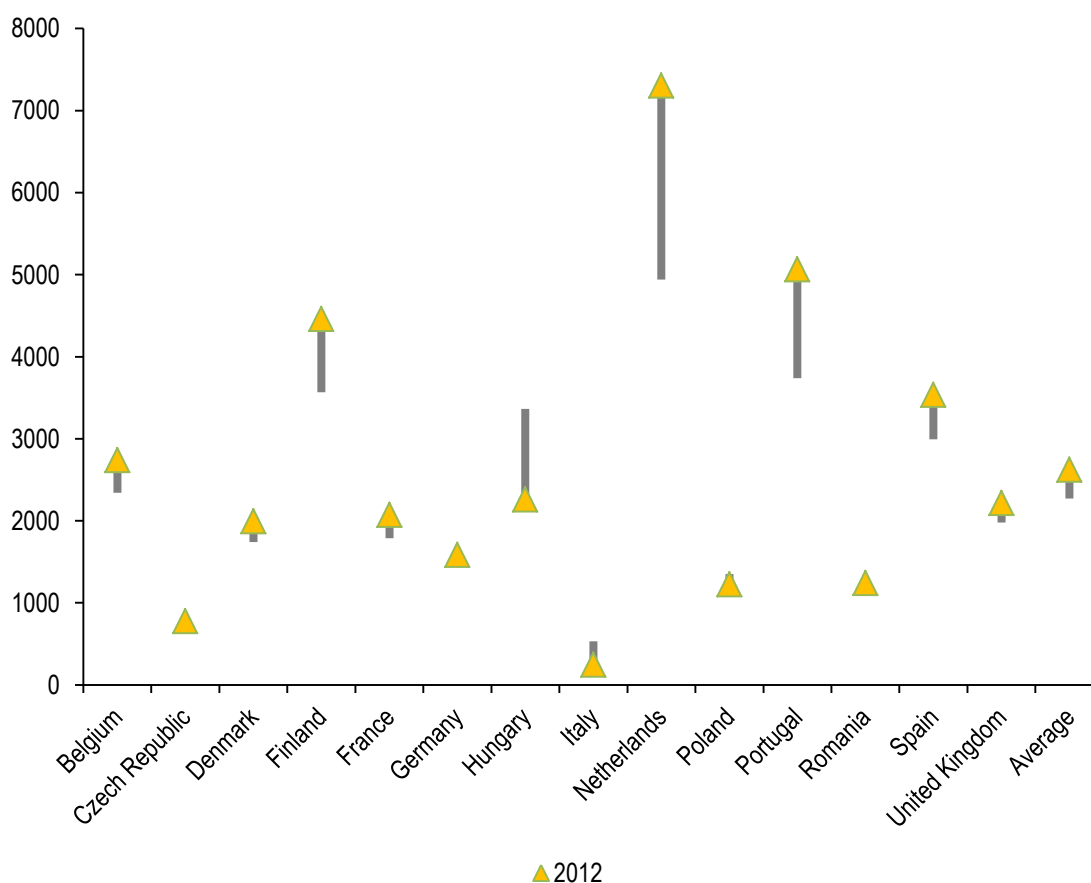


| Supplier concentration HHI | 2004 | 2006 | 2008 | 2010 | 2012 | CAGR 2004-2012 | CAGR 2004-2008 | CAGR 2008-2012 |
|----------------------------|-------------|-------------|-------------|-------------|-------------|-------------------|-------------------|-------------------|
| Ham | | | | | | | | |
| Belgium | 1545 | 1890 | 2218 | 2159 | 1897 | 2,6% | 9,5% | -3,8% |
| Czech Republic | 1034 | 1165 | 1323 | 1276 | 1222 | 2,1% | 6,4% | -2,0% |
| Denmark | 1375 | 2272 | 2390 | 2422 | 2779 | 9,2% | 14,8% | 3,8% |
| Finland | 1682 | 1716 | 1703 | 1782 | 1849 | 1,2% | 0,3% | 2,1% |
| France | 698 | 803 | 707 | 1019 | 871 | 2,8% | 0,3% | 5,4% |
| Germany | 1311 | 1291 | 1351 | 1794 | 1988 | 5,3% | 0,7% | 10,1% |
| Hungary | 818 | 1863 | 2224 | 2373 | 2179 | 13,0% | 28,4% | -0,5% |
| Italy | 239 | 239 | 225 | 263 | 289 | 2,4% | -1,5% | 6,4% |
| Netherlands | 433 | 438 | 402 | 603 | 396 | -1,1% | -1,8% | -0,4% |
| Poland | 1617 | 1608 | 1632 | 1605 | 1626 | 0,1% | 0,2% | -0,1% |
| Portugal | 2375 | 2654 | 2983 | 2729 | 2707 | 1,6% | 5,9% | -2,4% |
| Romania | 1960 | 2106 | 1375 | 1169 | 1124 | -6,7% | -8,5% | -4,9% |
| Spain | 1215 | 1451 | 1100 | 1015 | 1518 | 2,8% | -2,5% | 8,4% |
| United Kingdom | 394 | 356 | 375 | 406 | 435 | 1,3% | -1,2% | 3,8% |
| Average | 1193 | 1418 | 1429 | 1472 | 1491 | 2,8% | 4,6% | 1,1% |



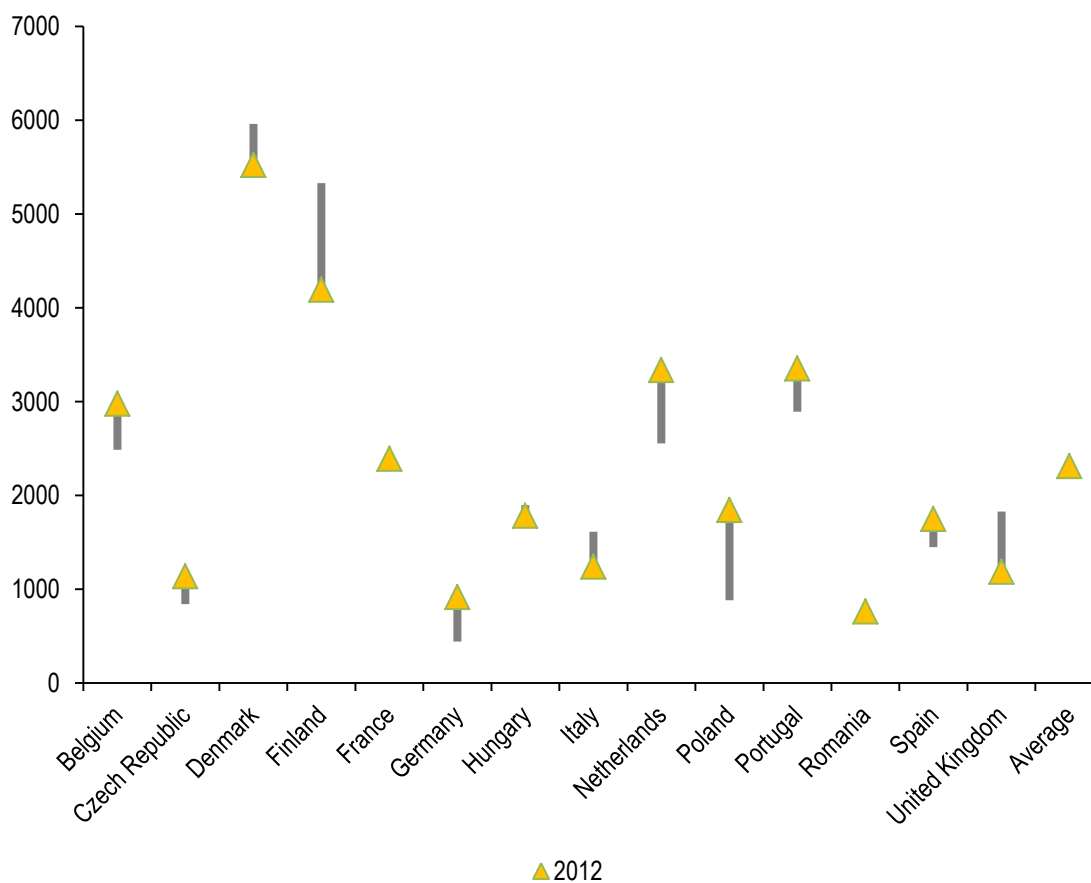
| Supplier concentration HHI | 2004 | 2006 | 2008 | 2010 | 2012 | CAGR 2004-2012 | CAGR 2004-2008 | CAGR 2008-2012 |
|----------------------------|-------------|-------------|-------------|-------------|-------------|-------------------|-------------------|-------------------|
| Ice Cream | | | | | | | | |
| Belgium | 2341 | 2505 | 2681 | 2908 | 2738 | 2,0% | 3,4% | 0,5% |
| Czech Republic | 720 | 678 | 775 | 777 | 777 | 1,0% | 1,8% | 0,1% |
| Denmark | 1740 | 1739 | 1705 | 2073 | 1994 | 1,7% | -0,5% | 4,0% |
| Finland | 3569 | 3655 | 3628 | 3541 | 4459 | 2,8% | 0,4% | 5,3% |
| France | 1789 | 1715 | 1813 | 1983 | 2074 | 1,9% | 0,3% | 3,4% |
| Germany | 1527 | 1605 | 1604 | 1576 | 1585 | 0,5% | 1,2% | -0,3% |
| Hungary | 3363 | 2991 | 2184 | 2181 | 2259 | -4,9% | -10,2% | 0,8% |
| Italy | 533 | 428 | 383 | 297 | 245 | -9,3% | -7,9% | -10,5% |
| Netherlands | 4941 | 5152 | 5463 | 6999 | 7305 | 5,0% | 2,5% | 7,5% |
| Poland | 1350 | 1270 | 1329 | 1278 | 1226 | -1,2% | -0,4% | -2,0% |
| Portugal | 3737 | 4108 | 4715 | 5092 | 5066 | 3,9% | 6,0% | 1,8% |
| Romania | 1236 | 1447 | 1268 | 1246 | 1241 | 0,0% | 0,6% | -0,5% |
| Spain | 2992 | 3034 | 3066 | 3287 | 3536 | 2,1% | 0,6% | 3,6% |
| United Kingdom | 1979 | 1939 | 1879 | 2027 | 2218 | 1,4% | -1,3% | 4,2% |
| Average | 2273 | 2305 | 2321 | 2519 | 2623 | 1,8% | 0,5% | 3,1% |

Supplier concentration Ice Cream - HHI Brand only



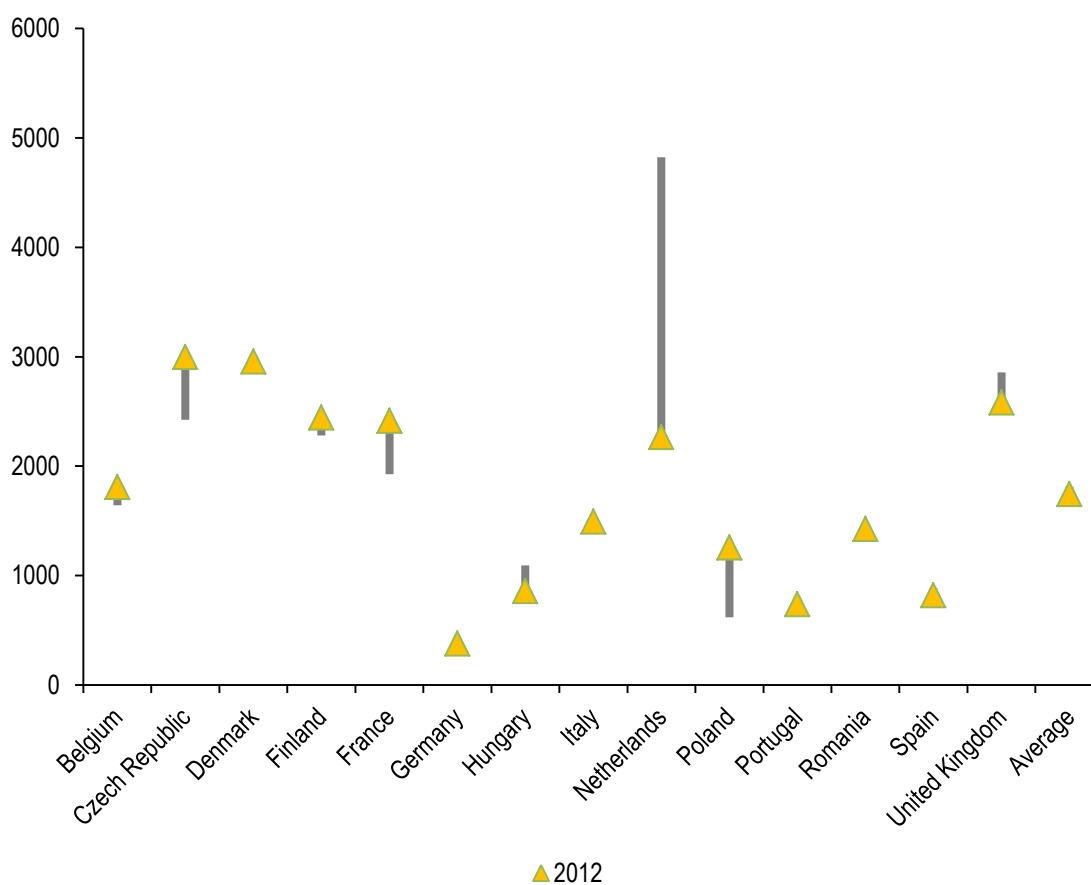
| Supplier concentration HHI | 2004 | 2006 | 2008 | 2010 | 2012 | CAGR 2004-2012 | CAGR 2004-2008 | CAGR 2008-2012 |
|----------------------------|-------------|-------------|-------------|-------------|-------------|-------------------|-------------------|-------------------|
| Milk | | | | | | | | |
| Belgium | 2486 | 2345 | 3295 | 3051 | 2976 | 2,3% | 7,3% | -2,5% |
| Czech Republic | 839 | 916 | 996 | 951 | 1139 | 3,9% | 4,4% | 3,4% |
| Denmark | 5962 | 5236 | 5959 | 5752 | 5525 | -0,9% | 0,0% | -1,9% |
| Finland | 5331 | 4925 | 4439 | 4303 | 4192 | -3,0% | -4,5% | -1,4% |
| France | 2322 | 2407 | 2318 | 2661 | 2390 | 0,4% | 0,0% | 0,8% |
| Germany | 441 | 561 | 686 | 745 | 915 | 9,6% | 11,7% | 7,5% |
| Hungary | 1895 | 2696 | 2112 | 1757 | 1784 | -0,8% | 2,7% | -4,1% |
| Italy | 1613 | 1704 | 1401 | 1290 | 1240 | -3,2% | -3,5% | -3,0% |
| Netherlands | 2554 | 2459 | 4593 | 3255 | 3336 | 3,4% | 15,8% | -7,7% |
| Poland | 881 | 1102 | 1618 | 1876 | 1843 | 9,7% | 16,4% | 3,3% |
| Portugal | 2894 | 2630 | 2437 | 2247 | 3353 | 1,9% | -4,2% | 8,3% |
| Romania | 669 | 974 | 983 | 770 | 764 | 1,7% | 10,1% | -6,1% |
| Spain | 1448 | 1466 | 1321 | 1749 | 1747 | 2,4% | -2,3% | 7,2% |
| United Kingdom | 1828 | 1657 | 1433 | 1276 | 1187 | -5,3% | -5,9% | -4,6% |
| Average | 2226 | 2220 | 2399 | 2263 | 2314 | 0,5% | 1,9% | -0,9% |

Supplier concentration Milk - HHI Brand only



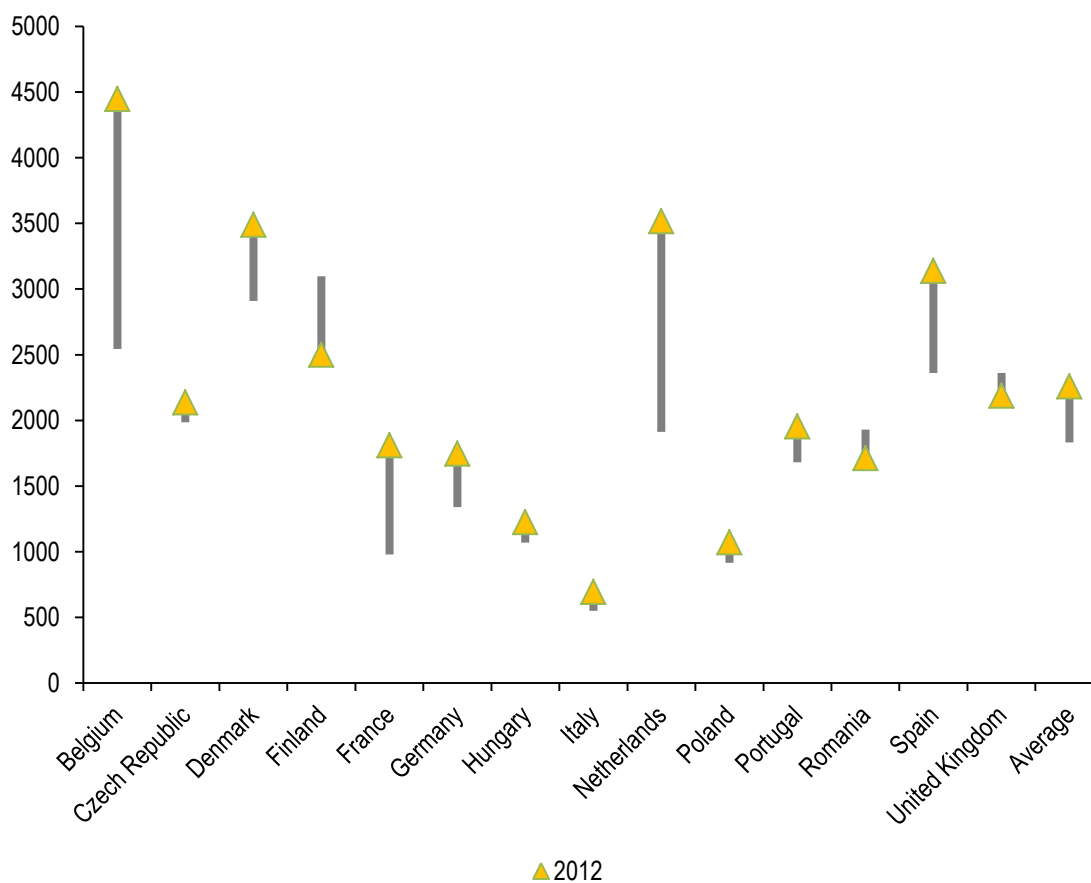
| Supplier concentration HHI | 2004 | 2006 | 2008 | 2010 | 2012 | CAGR 2004-2012 | CAGR 2004-2008 | CAGR 2008-2012 |
|----------------------------|-------------|-------------|-------------|-------------|-------------|-------------------|-------------------|-------------------|
| Mineral water | | | | | | | | |
| Belgium | 1643 | 1521 | 1523 | 1680 | 1810 | 1,2% | -1,9% | 4,4% |
| Czech Republic | 2425 | 3717 | 3514 | 3193 | 2998 | 2,7% | 9,7% | -3,9% |
| Denmark | 3009 | 2789 | 2934 | 3102 | 2956 | -0,2% | -0,6% | 0,2% |
| Finland | 2280 | 2255 | 2342 | 2486 | 2445 | 0,9% | 0,7% | 1,1% |
| France | 1927 | 2120 | 2110 | 2148 | 2415 | 2,9% | 2,3% | 3,4% |
| Germany | 390 | 418 | 388 | 397 | 378 | -0,4% | -0,1% | -0,7% |
| Hungary | 1091 | 1073 | 900 | 1013 | 858 | -3,0% | -4,7% | -1,2% |
| Italy | 1426 | 1388 | 1370 | 1327 | 1494 | 0,6% | -1,0% | 2,2% |
| Netherlands | 4824 | 4191 | 3548 | 2915 | 2266 | -9,0% | -7,4% | -10,6% |
| Poland | 617 | 872 | 980 | 1084 | 1257 | 9,3% | 12,3% | 6,4% |
| Portugal | 670 | 842 | 775 | 736 | 737 | 1,2% | 3,7% | -1,2% |
| Romania | 1330 | 1540 | 1638 | 1627 | 1427 | 0,9% | 5,3% | -3,4% |
| Spain | 884 | 866 | 900 | 896 | 819 | -1,0% | 0,4% | -2,3% |
| United Kingdom | 2857 | 2910 | 2751 | 2801 | 2581 | -1,3% | -0,9% | -1,6% |
| Average | 1812 | 1893 | 1834 | 1815 | 1746 | -0,5% | 0,3% | -1,2% |

Supplier concentration Mineral water - HHI Brand only



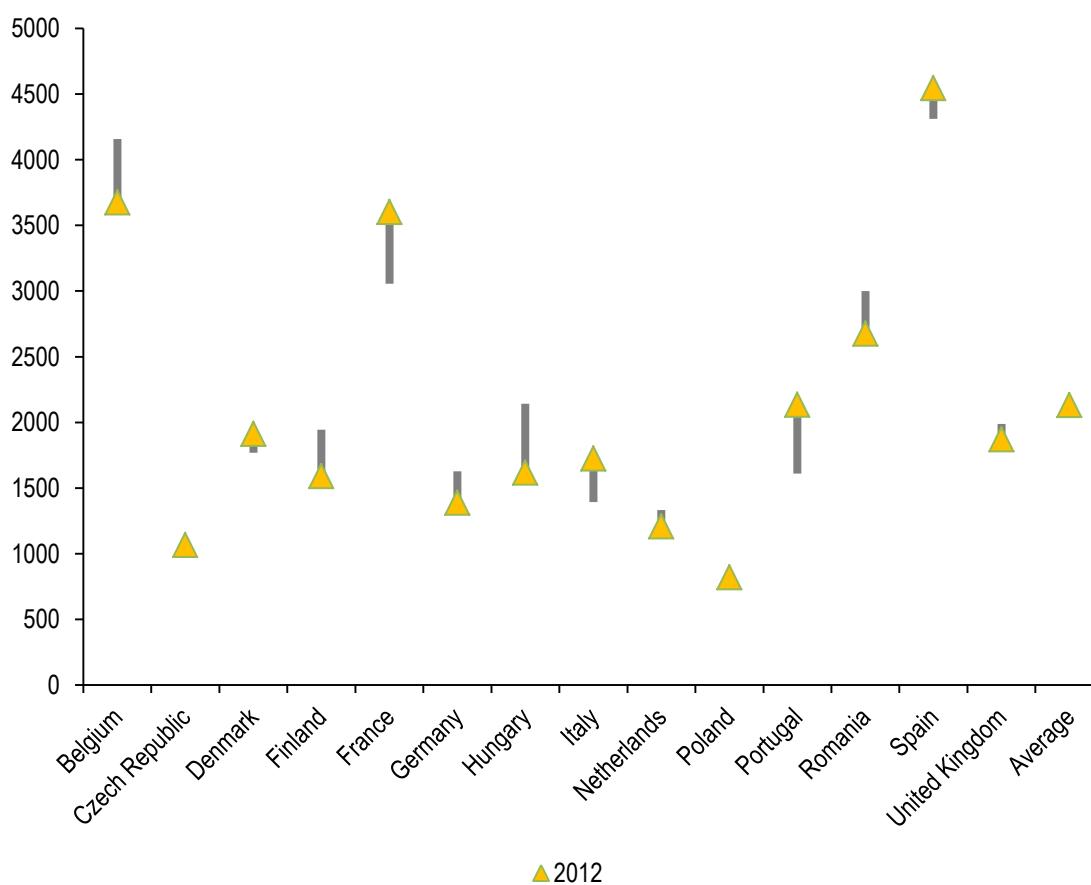
| Supplier concentration HHI | 2004 | 2006 | 2008 | 2010 | 2012 | CAGR 2004-2012 | CAGR 2004-2008 | CAGR 2008-2012 |
|----------------------------|-------------|-------------|-------------|-------------|-------------|-------------------|-------------------|-------------------|
| Savoury snacks | | | | | | | | |
| Belgium | 2544 | 3627 | 4123 | 4349 | 4448 | 7,2% | 12,8% | 1,9% |
| Czech Republic | 1985 | 1900 | 1776 | 2357 | 2137 | 0,9% | -2,7% | 4,7% |
| Denmark | 2909 | 2645 | 2419 | 3319 | 3489 | 2,3% | -4,5% | 9,6% |
| Finland | 3096 | 2920 | 2902 | 2386 | 2500 | -2,6% | -1,6% | -3,7% |
| France | 978 | 1332 | 1641 | 1741 | 1809 | 8,0% | 13,8% | 2,5% |
| Germany | 1340 | 1309 | 1219 | 1742 | 1747 | 3,4% | -2,3% | 9,4% |
| Hungary | 1069 | 1060 | 1249 | 1308 | 1225 | 1,7% | 4,0% | -0,5% |
| Italy | 550 | 609 | 648 | 690 | 692 | 2,9% | 4,2% | 1,7% |
| Netherlands | 1913 | 3259 | 3666 | 3696 | 3518 | 7,9% | 17,7% | -1,0% |
| Poland | 914 | 962 | 1062 | 1066 | 1070 | 2,0% | 3,8% | 0,2% |
| Portugal | 1680 | 1652 | 1592 | 1835 | 1953 | 1,9% | -1,3% | 5,2% |
| Romania | 1930 | 1884 | 1583 | 1705 | 1713 | -1,5% | -4,8% | 2,0% |
| Spain | 2362 | 2488 | 2639 | 3004 | 3139 | 3,6% | 2,8% | 4,4% |
| United Kingdom | 2361 | 2212 | 2249 | 2132 | 2189 | -0,9% | -1,2% | -0,7% |
| Average | 1831 | 1990 | 2055 | 2238 | 2259 | 2,7% | 2,9% | 2,4% |

Supplier concentration Savoury snacks - HHI Brand only



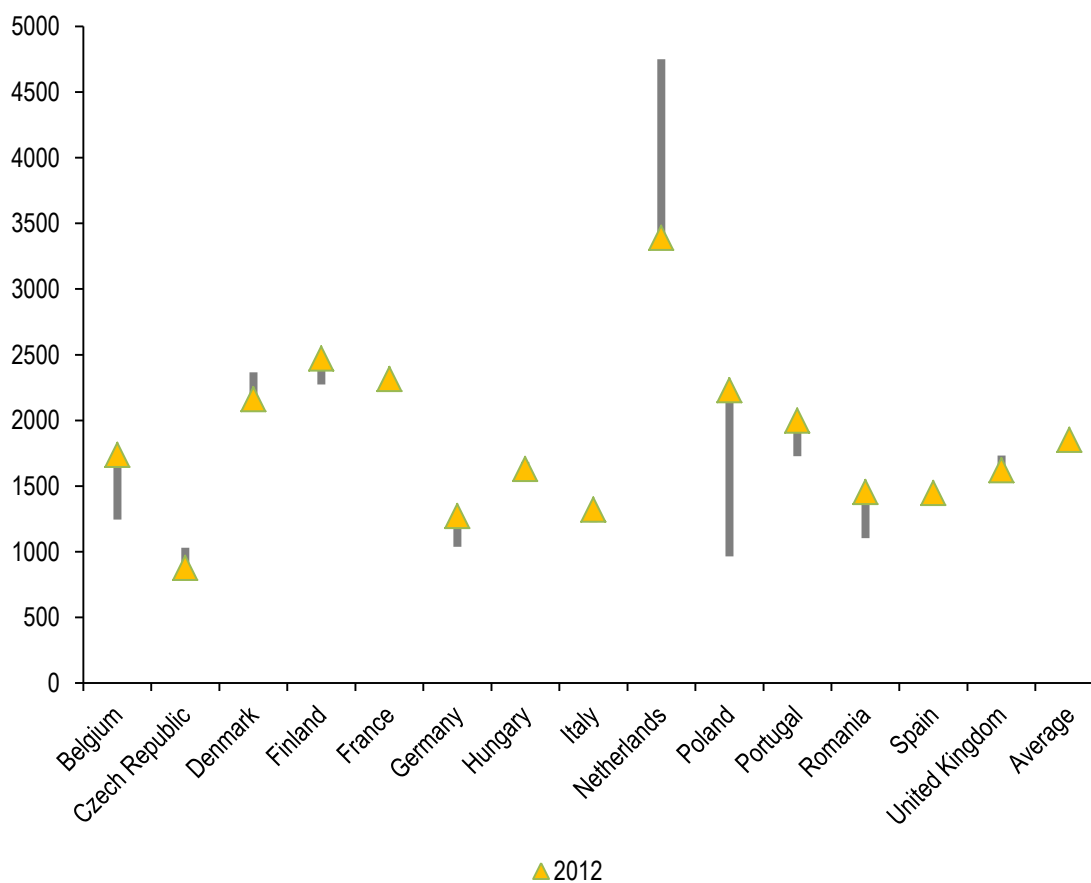
| Supplier concentration HHI | 2004 | 2006 | 2008 | 2010 | 2012 | CAGR 2004-2012 | CAGR 2004-2008 | CAGR 2008-2012 |
|----------------------------|-------------|-------------|-------------|-------------|-------------|-------------------|-------------------|-------------------|
| Soft drinks | | | | | | | | |
| Belgium | 4159 | 4076 | 3895 | 3688 | 3675 | -1,5% | -1,6% | -1,4% |
| Czech Republic | 1080 | 1063 | 951 | 1009 | 1066 | -0,2% | -3,1% | 2,9% |
| Denmark | 1769 | 1760 | 1865 | 1870 | 1912 | 1,0% | 1,3% | 0,6% |
| Finland | 1945 | 1781 | 1679 | 1647 | 1591 | -2,5% | -3,6% | -1,3% |
| France | 3057 | 3294 | 3435 | 3590 | 3603 | 2,1% | 3,0% | 1,2% |
| Germany | 1626 | 1679 | 1611 | 1432 | 1389 | -2,0% | -0,2% | -3,6% |
| Hungary | 2142 | 2133 | 1853 | 1800 | 1618 | -3,4% | -3,6% | -3,3% |
| Italy | 1394 | 1537 | 1617 | 1642 | 1725 | 2,7% | 3,8% | 1,6% |
| Netherlands | 1333 | 1204 | 1295 | 1249 | 1207 | -1,2% | -0,7% | -1,7% |
| Poland | 743 | 738 | 722 | 751 | 821 | 1,3% | -0,7% | 3,3% |
| Portugal | 1610 | 1663 | 1850 | 1971 | 2135 | 3,6% | 3,5% | 3,6% |
| Romania | 2999 | 2474 | 2388 | 2469 | 2677 | -1,4% | -5,5% | 2,9% |
| Spain | 4311 | 4226 | 4293 | 4381 | 4545 | 0,7% | -0,1% | 1,4% |
| United Kingdom | 1987 | 1962 | 2039 | 1964 | 1871 | -0,7% | 0,7% | -2,1% |
| Average | 2154 | 2113 | 2107 | 2105 | 2131 | -0,1% | -0,6% | 0,3% |

Supplier concentration Soft drinks - HHI Brand only

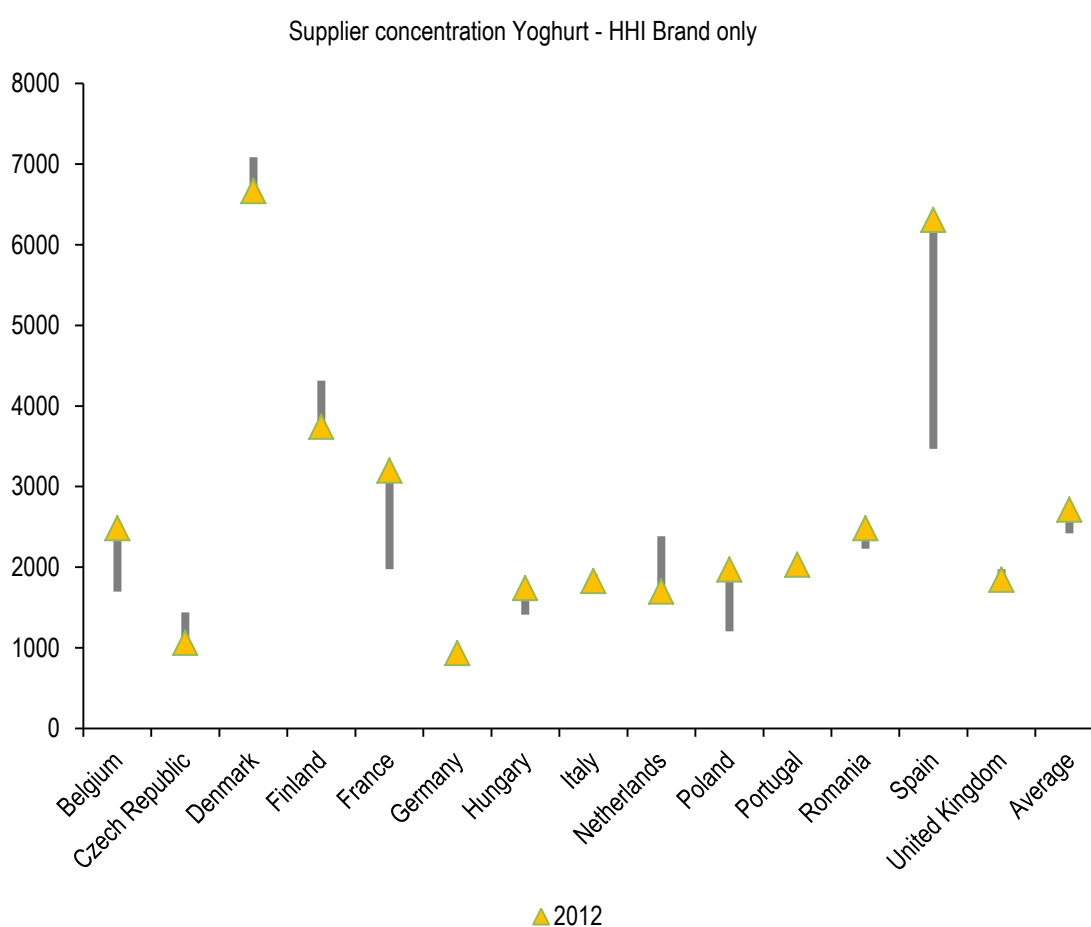


| Supplier concentration HHI | 2004 | 2006 | 2008 | 2010 | 2012 | CAGR 2004-2012 | CAGR 2004-2008 | CAGR 2008-2012 |
|----------------------------|-------------|-------------|-------------|-------------|-------------|-------------------|-------------------|-------------------|
| Tea | | | | | | | | |
| Belgium | 1245 | 1367 | 1457 | 1490 | 1738 | 4,3% | 4,0% | 4,5% |
| Czech Republic | 1029 | 895 | 820 | 848 | 877 | -2,0% | -5,5% | 1,7% |
| Denmark | 2367 | 2399 | 2280 | 2181 | 2161 | -1,1% | -0,9% | -1,3% |
| Finland | 2272 | 2462 | 2500 | 2448 | 2471 | 1,1% | 2,4% | -0,3% |
| France | 2273 | 2339 | 2294 | 2334 | 2314 | 0,2% | 0,2% | 0,2% |
| Germany | 1038 | 1163 | 1260 | 1262 | 1272 | 2,6% | 5,0% | 0,2% |
| Hungary | 1683 | 1785 | 1891 | 1656 | 1629 | -0,4% | 2,9% | -3,7% |
| Italy | 1224 | 1281 | 1290 | 1267 | 1319 | 0,9% | 1,3% | 0,6% |
| Netherlands | 4750 | 4017 | 3419 | 3276 | 3390 | -4,1% | -7,9% | -0,2% |
| Poland | 965 | 1353 | 1541 | 1922 | 2228 | 11,0% | 12,4% | 9,7% |
| Portugal | 1728 | 1784 | 1704 | 1806 | 1998 | 1,8% | -0,3% | 4,1% |
| Romania | 1104 | 1404 | 1493 | 1630 | 1454 | 3,5% | 7,9% | -0,7% |
| Spain | 1383 | 1520 | 1515 | 1489 | 1448 | 0,6% | 2,3% | -1,1% |
| United Kingdom | 1733 | 1834 | 1728 | 1674 | 1621 | -0,8% | -0,1% | -1,6% |
| Average | 1771 | 1829 | 1799 | 1806 | 1851 | 0,6% | 0,4% | 0,7% |

Supplier concentration Tea - HHI Brand only



| Supplier concentration HHI | 2004 | 2006 | 2008 | 2010 | 2012 | CAGR 2004-2012 | CAGR 2004-2008 | CAGR 2008-2012 |
|----------------------------|-------------|-------------|-------------|-------------|-------------|-------------------|-------------------|-------------------|
| Yoghurt | | | | | | | | |
| Belgium | 1697 | 2495 | 2781 | 2915 | 2485 | 4,9% | 13,1% | -2,8% |
| Czech Republic | 1439 | 1121 | 1139 | 1185 | 1064 | -3,7% | -5,7% | -1,7% |
| Denmark | 7085 | 7051 | 6712 | 6806 | 6664 | -0,8% | -1,3% | -0,2% |
| Finland | 4316 | 4378 | 4191 | 3902 | 3742 | -1,8% | -0,7% | -2,8% |
| France | 1975 | 2920 | 3112 | 3107 | 3197 | 6,2% | 12,0% | 0,7% |
| Germany | 914 | 930 | 1000 | 1009 | 935 | 0,3% | 2,3% | -1,6% |
| Hungary | 1410 | 1551 | 1553 | 1572 | 1739 | 2,7% | 2,4% | 2,9% |
| Italy | 1916 | 1792 | 1720 | 1779 | 1829 | -0,6% | -2,7% | 1,6% |
| Netherlands | 2385 | 1854 | 2714 | 1829 | 1698 | -4,2% | 3,3% | -11,1% |
| Poland | 1207 | 1378 | 1543 | 1764 | 1973 | 6,3% | 6,3% | 6,3% |
| Portugal | 1887 | 1897 | 1841 | 1957 | 2029 | 0,9% | -0,6% | 2,5% |
| Romania | 2230 | 1960 | 2051 | 2161 | 2483 | 1,4% | -2,1% | 4,9% |
| Spain | 3468 | 5333 | 5712 | 5841 | 6309 | 7,8% | 13,3% | 2,5% |
| United Kingdom | 1977 | 1774 | 1952 | 2116 | 1844 | -0,9% | -0,3% | -1,4% |
| Average | 2422 | 2602 | 2716 | 2710 | 2714 | 1,4% | 2,9% | 0,0% |

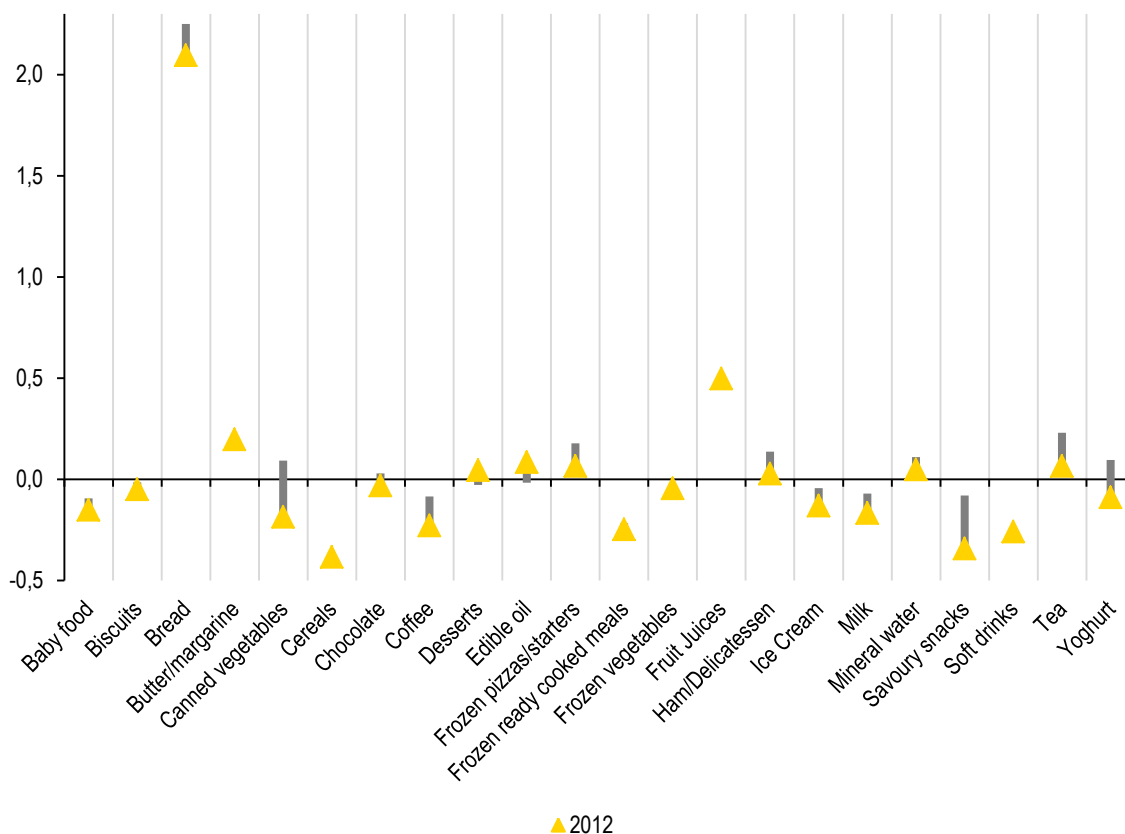


11.2.6. Measure of imbalance

| Belgium | 2004 | 2006 | 2008 | 2010 | 2012 | CAGR 2004-2012 |
|---------------------------|--------------|--------------|--------------|--------------|--------------|----------------|
| Baby food | -0,094 | -0,105 | -0,157 | -0,151 | -0,151 | 6,1% |
| Biscuits | -0,015 | -0,051 | 0,057 | -0,053 | -0,051 | 16,8% |
| Bread | 2,251 | 2,135 | 2,099 | 2,084 | 2,095 | -0,9% |
| Butter/margarine | 0,208 | 0,186 | 0,210 | 0,214 | 0,196 | -0,8% |
| Canned vegetables | 0,092 | -0,026 | -0,123 | -0,188 | -0,187 | n.a |
| Cereals | -0,410 | -0,423 | -0,417 | -0,410 | -0,384 | -0,8% |
| Cheese | 1,007 | 0,919 | 0,877 | 0,865 | 0,930 | -1,0% |
| Chocolate | 0,029 | 0,030 | -0,035 | -0,023 | -0,031 | n.a |
| Coffee | -0,085 | -0,095 | -0,173 | -0,211 | -0,228 | 13,1% |
| Desserts | -0,028 | 0,027 | 0,015 | 0,035 | 0,045 | n.a |
| Edible oil | -0,017 | -0,003 | 0,093 | 0,079 | 0,084 | n.a |
| Frozen pizzas/starters | 0,177 | 0,061 | 0,126 | 0,046 | 0,065 | -11,7% |
| Frozen ready cooked meals | -0,218 | -0,285 | -0,326 | -0,328 | -0,247 | 1,6% |
| Frozen vegetables | -0,068 | -0,088 | -0,096 | -0,093 | -0,046 | -4,7% |
| Fruit Juices | 0,503 | 0,480 | 0,462 | 0,463 | 0,498 | -0,1% |
| Ham/Delicatessen | 0,137 | 0,038 | -0,047 | -0,034 | 0,028 | -18,0% |
| Ice Cream | -0,044 | -0,085 | -0,129 | -0,163 | -0,132 | 14,7% |
| Milk | -0,070 | -0,056 | -0,219 | -0,184 | -0,168 | 11,5% |
| Mineral water | 0,110 | 0,132 | 0,116 | 0,075 | 0,048 | -9,8% |
| Savoury snacks | -0,080 | -0,245 | -0,316 | -0,338 | -0,342 | 19,9% |
| Soft drinks | -0,294 | -0,296 | -0,291 | -0,266 | -0,259 | -1,5% |
| Tea | 0,230 | 0,178 | 0,136 | 0,127 | 0,066 | -14,5% |
| Yoghurt | 0,096 | -0,083 | -0,145 | -0,164 | -0,089 | n.a |
| Average | 0,149 | 0,102 | 0,075 | 0,060 | 0,076 | |

Source: EY analysis based on Euromonitor Passport data and Source: Planet Retail data

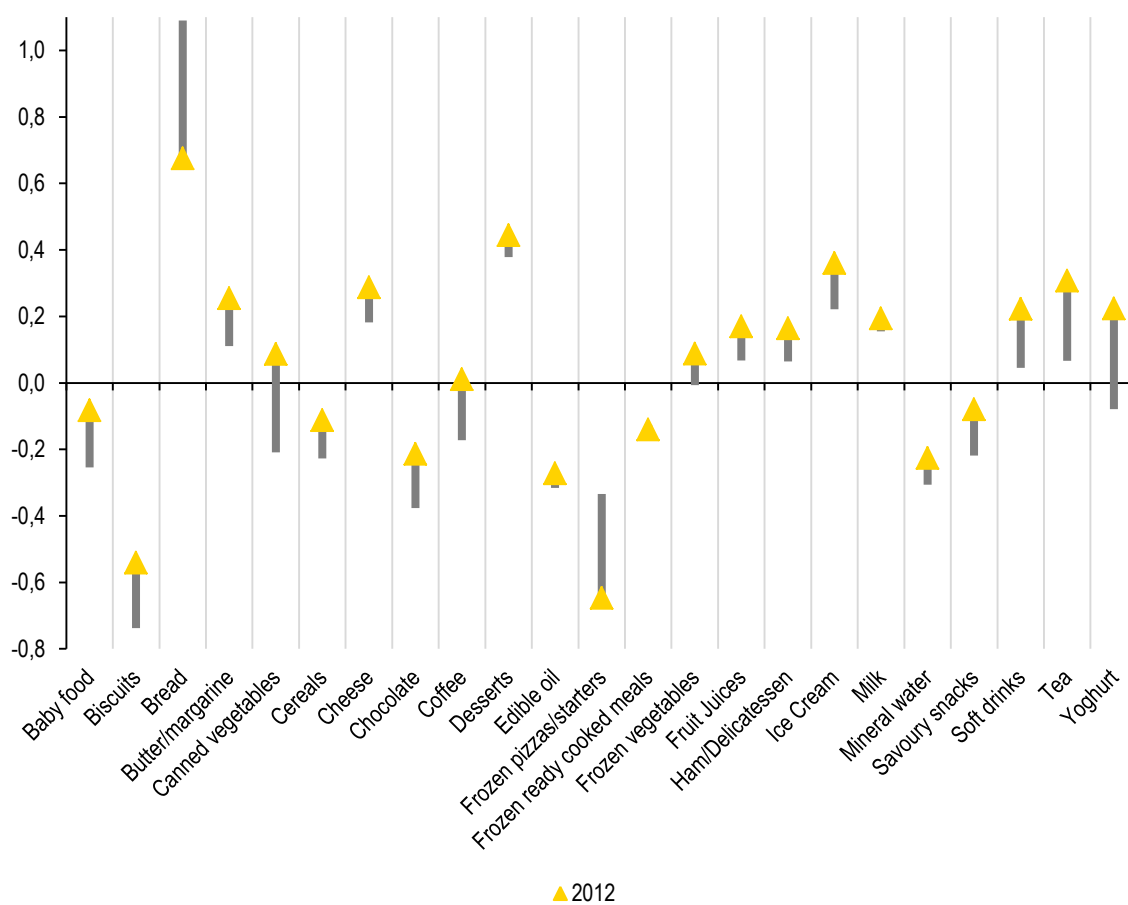
Measure of imbalance brand only - Belgium
2004 - 2012 Evolution



| Czech Republic | 2004 | 2006 | 2008 | 2010 | 2012 | CAGR 2004-2012 |
|---------------------------|---------------|---------------|--------------|--------------|--------------|----------------|
| Baby food | -0,255 | -0,196 | -0,102 | -0,106 | -0,082 | -13,1% |
| Biscuits | -0,738 | -0,654 | -0,577 | -0,561 | -0,541 | -3,8% |
| Bread | 1,090 | 0,925 | 0,872 | 0,874 | 0,675 | -5,8% |
| Butter/margarine | 0,111 | 0,124 | 0,217 | 0,234 | 0,254 | 10,9% |
| Canned vegetables | -0,209 | -0,032 | 0,026 | 0,040 | 0,087 | n.a |
| Cereals | -0,228 | -0,174 | -0,135 | -0,141 | -0,113 | -8,4% |
| Cheese | 0,182 | 0,243 | 0,295 | 0,281 | 0,287 | 5,8% |
| Chocolate | -0,377 | -0,293 | -0,231 | -0,228 | -0,214 | -6,9% |
| Coffee | -0,172 | -0,089 | 0,011 | -0,013 | 0,010 | n.a |
| Desserts | 0,379 | 0,408 | 0,491 | 0,478 | 0,444 | 2,0% |
| Edible oil | -0,315 | -0,308 | -0,254 | -0,250 | -0,273 | -1,8% |
| Frozen pizzas/starters | -0,334 | -0,456 | -0,714 | -0,699 | -0,648 | 8,6% |
| Frozen ready cooked meals | -0,126 | -0,119 | -0,017 | -0,062 | -0,141 | 1,3% |
| Frozen vegetables | -0,006 | 0,005 | 0,075 | 0,068 | 0,088 | n.a |
| Fruit Juices | 0,068 | 0,134 | 0,180 | 0,153 | 0,170 | 12,2% |
| Ham/Delicatessen | 0,064 | 0,076 | 0,106 | 0,125 | 0,163 | 12,3% |
| Ice Cream | 0,222 | 0,311 | 0,339 | 0,340 | 0,360 | 6,2% |
| Milk | 0,155 | 0,180 | 0,230 | 0,252 | 0,194 | 2,8% |
| Mineral water | -0,306 | -0,428 | -0,318 | -0,274 | -0,227 | -3,7% |
| Savoury snacks | -0,219 | -0,137 | -0,022 | -0,142 | -0,080 | -11,9% |
| Soft drinks | 0,045 | 0,116 | 0,250 | 0,227 | 0,222 | 22,0% |
| Tea | 0,066 | 0,190 | 0,314 | 0,302 | 0,307 | 21,1% |
| Yoghurt | -0,079 | 0,092 | 0,171 | 0,157 | 0,223 | n.a |
| Average | -0,043 | -0,004 | 0,053 | 0,046 | 0,051 | |

Source: EY analysis based on Euromonitor Passport data and Source: Planet Retail data

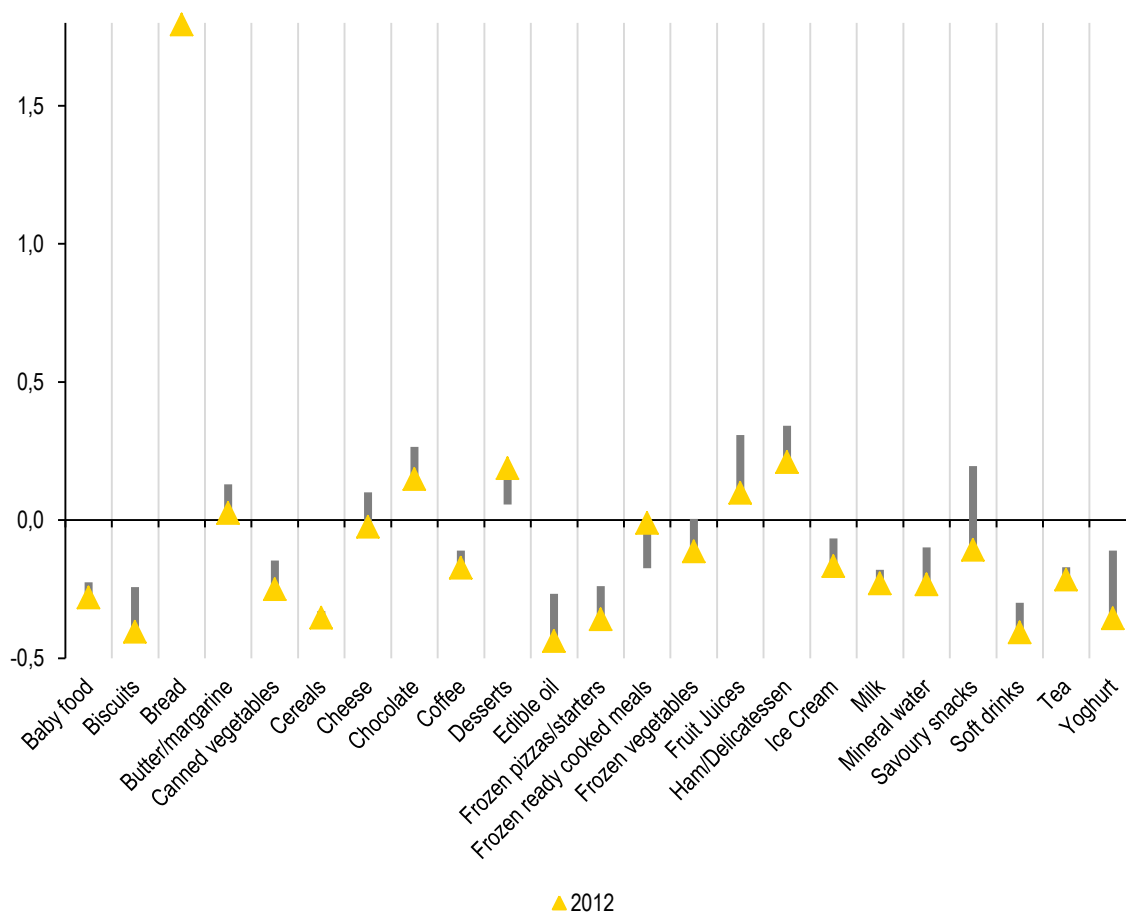
Measure of imbalance brand only - Czech Republic 2004 - 2012 Evolution



| France | 2004 | 2006 | 2008 | 2010 | 2012 | CAGR 2004-2012 |
|---------------------------|--------------|---------------|---------------|---------------|---------------|----------------|
| Baby food | -0,226 | -0,215 | -0,232 | -0,256 | -0,281 | 2,8% |
| Biscuits | -0,243 | -0,292 | -0,332 | -0,371 | -0,405 | 6,6% |
| Bread | 1,802 | 1,828 | 1,851 | 1,847 | 1,793 | -0,1% |
| Butter/margarine | 0,129 | 0,122 | 0,063 | 0,052 | 0,026 | -18,3% |
| Canned vegetables | -0,147 | -0,163 | -0,187 | -0,203 | -0,251 | 6,9% |
| Cereals | -0,329 | -0,335 | -0,347 | -0,344 | -0,354 | 0,9% |
| Cheese | 0,101 | 0,012 | -0,009 | -0,025 | -0,024 | n.a |
| Chocolate | 0,265 | 0,244 | 0,222 | 0,190 | 0,148 | -7,0% |
| Coffee | -0,111 | -0,120 | -0,139 | -0,143 | -0,173 | 5,7% |
| Desserts | 0,056 | 0,117 | 0,158 | 0,202 | 0,187 | 16,2% |
| Edible oil | -0,266 | -0,374 | -0,405 | -0,467 | -0,438 | 6,4% |
| Frozen pizzas/starters | -0,240 | -0,225 | -0,244 | -0,302 | -0,359 | 5,2% |
| Frozen ready cooked meals | -0,174 | -0,039 | 0,012 | -0,002 | -0,010 | -29,6% |
| Frozen vegetables | 0,005 | -0,004 | -0,010 | -0,076 | -0,114 | n.a |
| Fruit Juices | 0,308 | 0,229 | 0,193 | 0,159 | 0,099 | -13,3% |
| Ham/Delicatessen | 0,342 | 0,279 | 0,324 | 0,163 | 0,209 | -6,0% |
| Ice Cream | -0,067 | -0,050 | -0,084 | -0,126 | -0,168 | 12,2% |
| Milk | -0,180 | -0,197 | -0,191 | -0,254 | -0,229 | 3,1% |
| Mineral water | -0,099 | -0,142 | -0,150 | -0,161 | -0,234 | 11,3% |
| Savoury snacks | 0,195 | 0,060 | -0,041 | -0,070 | -0,108 | n.a |
| Soft drinks | -0,300 | -0,334 | -0,362 | -0,384 | -0,408 | 3,9% |
| Tea | -0,171 | -0,185 | -0,187 | -0,197 | -0,215 | 2,9% |
| Yoghurt | -0,110 | -0,281 | -0,319 | -0,321 | -0,356 | 15,8% |
| Average | 0,024 | -0,003 | -0,018 | -0,047 | -0,072 | |

Source: EY analysis based on Euromonitor Passport data and Source: Planet Retail data

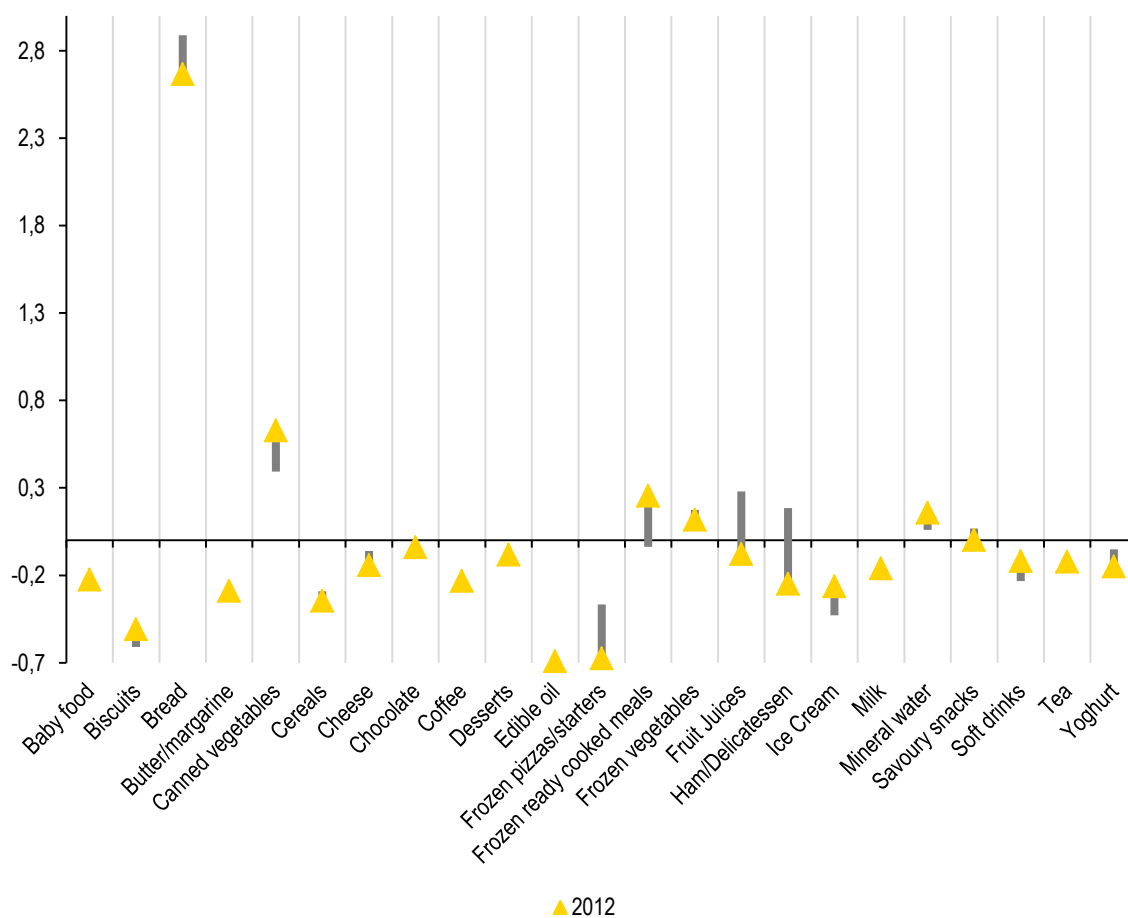
Measure of imbalance brand only - France
2004 - 2012 Evolution



| Hungary | 2004 | 2006 | 2008 | 2010 | 2012 | CAGR 2004-2012 |
|---------------------------|---------------|---------------|---------------|---------------|---------------|----------------|
| Babyfood | -0,257 | -0,260 | -0,213 | -0,258 | -0,226 | -1,6% |
| Biscuits | -0,609 | -0,596 | -0,475 | -0,537 | -0,510 | -2,2% |
| Bread | 2,890 | 2,887 | 2,631 | 2,564 | 2,666 | -1,0% |
| Butter/margarine | -0,319 | -0,299 | -0,246 | -0,303 | -0,290 | -1,2% |
| Canned vegetables | 0,393 | 0,622 | 0,869 | 0,672 | 0,628 | 6,0% |
| Cereals | -0,291 | -0,344 | -0,308 | -0,335 | -0,346 | 2,2% |
| Cheese | -0,061 | -0,161 | -0,109 | -0,138 | -0,143 | 11,2% |
| Chocolate | -0,070 | -0,066 | -0,021 | -0,059 | -0,040 | -6,6% |
| Coffee | -0,231 | -0,214 | -0,193 | -0,232 | -0,233 | 0,1% |
| Desserts | -0,123 | -0,149 | -0,050 | -0,096 | -0,084 | -4,7% |
| Edible oil | -0,704 | -0,773 | -0,700 | -0,685 | -0,693 | -0,2% |
| Frozen pizzas/starters | -0,367 | -0,370 | -0,594 | -0,695 | -0,676 | 7,9% |
| Frozen ready cooked meals | -0,038 | -0,033 | 0,055 | -0,056 | 0,255 | n.a |
| Frozen vegetables | 0,174 | 0,041 | 0,127 | 0,085 | 0,117 | -4,9% |
| Fruit Juices | 0,280 | 0,169 | 0,007 | -0,068 | -0,079 | n.a |
| Ham/Delicatessen | 0,184 | -0,176 | -0,231 | -0,297 | -0,249 | n.a |
| Ice Cream | -0,430 | -0,381 | -0,223 | -0,260 | -0,264 | -5,9% |
| Milk | -0,180 | -0,336 | -0,208 | -0,166 | -0,162 | -1,4% |
| Mineral water | 0,059 | 0,064 | 0,162 | 0,073 | 0,156 | 12,9% |
| Savoury snacks | 0,068 | 0,069 | 0,020 | -0,038 | 0,001 | -38,1% |
| Soft drinks | -0,234 | -0,234 | -0,151 | -0,177 | -0,119 | -8,0% |
| Tea | -0,129 | -0,157 | -0,160 | -0,140 | -0,122 | -0,7% |
| Yoghurt | -0,052 | -0,096 | -0,075 | -0,118 | -0,151 | 14,2% |
| Average | -0,002 | -0,034 | -0,004 | -0,055 | -0,025 | |

Source: EY analysis based on Euromonitor Passport data and Source: Planet Retail data

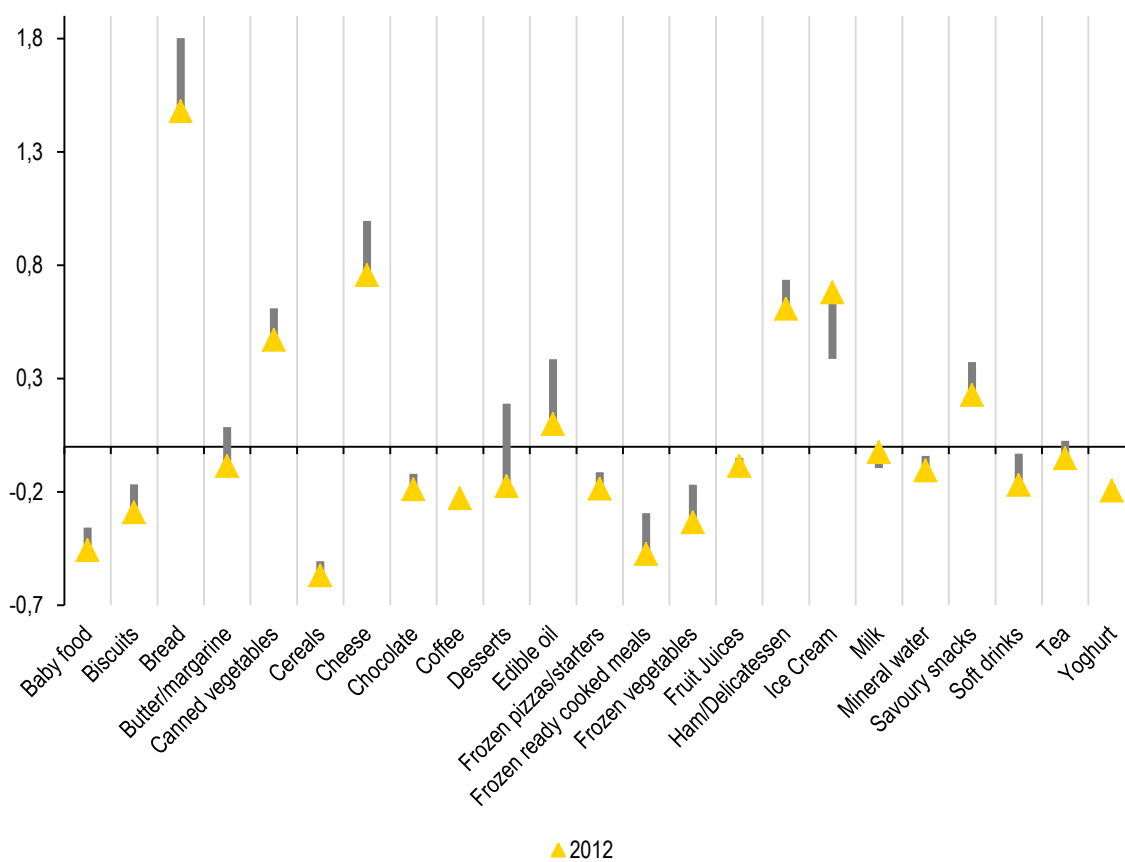
Measure of imbalance brand only - Hungary
2004 - 2012 Evolution



| Italy | 2004 | 2006 | 2008 | 2010 | 2012 | CAGR 2004-2012 |
|---------------------------|--------------|--------------|--------------|--------------|--------------|----------------|
| Baby food | -0,357 | -0,421 | -0,441 | -0,447 | -0,458 | 3,2% |
| Biscuits | -0,167 | -0,245 | -0,262 | -0,279 | -0,291 | 7,2% |
| Bread | 1,801 | 1,761 | 1,657 | 1,555 | 1,478 | -2,4% |
| Butter/margarine | 0,087 | 0,026 | 0,026 | 0,014 | -0,087 | n.a |
| Canned vegetables | 0,611 | 0,556 | 0,521 | 0,491 | 0,470 | -3,2% |
| Cereals | -0,505 | -0,551 | -0,574 | -0,553 | -0,568 | 1,5% |
| Cheese | 0,996 | 0,798 | 0,809 | 0,810 | 0,755 | -3,4% |
| Chocolate | -0,120 | -0,152 | -0,191 | -0,190 | -0,189 | 5,8% |
| Coffee | -0,230 | -0,266 | -0,279 | -0,272 | -0,229 | -0,1% |
| Desserts | 0,190 | 0,089 | -0,043 | -0,088 | -0,174 | n.a |
| Edible oil | 0,386 | 0,354 | 0,107 | 0,150 | 0,099 | -15,6% |
| Frozen pizzas/starters | -0,113 | -0,168 | -0,190 | -0,195 | -0,186 | 6,5% |
| Frozen ready cooked meals | -0,293 | -0,313 | -0,329 | -0,348 | -0,474 | 6,2% |
| Frozen vegetables | -0,168 | -0,194 | -0,227 | -0,293 | -0,334 | 9,0% |
| Fruit Juices | -0,049 | -0,092 | -0,110 | -0,107 | -0,087 | 7,4% |
| Ham/Delicatessen | 0,736 | 0,708 | 0,723 | 0,656 | 0,608 | -2,4% |
| Ice Cream | 0,387 | 0,454 | 0,492 | 0,604 | 0,679 | 7,3% |
| Milk | -0,094 | -0,145 | -0,072 | -0,034 | -0,025 | -15,1% |
| Mineral water | -0,040 | -0,056 | -0,062 | -0,047 | -0,106 | 12,9% |
| Savoury snacks | 0,373 | 0,302 | 0,263 | 0,238 | 0,228 | -6,0% |
| Soft drinks | -0,030 | -0,100 | -0,134 | -0,139 | -0,169 | 23,8% |
| Tea | 0,026 | -0,021 | -0,036 | -0,027 | -0,052 | n.a |
| Yoghurt | -0,169 | -0,167 | -0,161 | -0,174 | -0,194 | 1,8% |
| Average | 0,142 | 0,094 | 0,065 | 0,058 | 0,030 | |

Source: EY analysis based on Euromonitor Passport data and Source: Planet Retail data

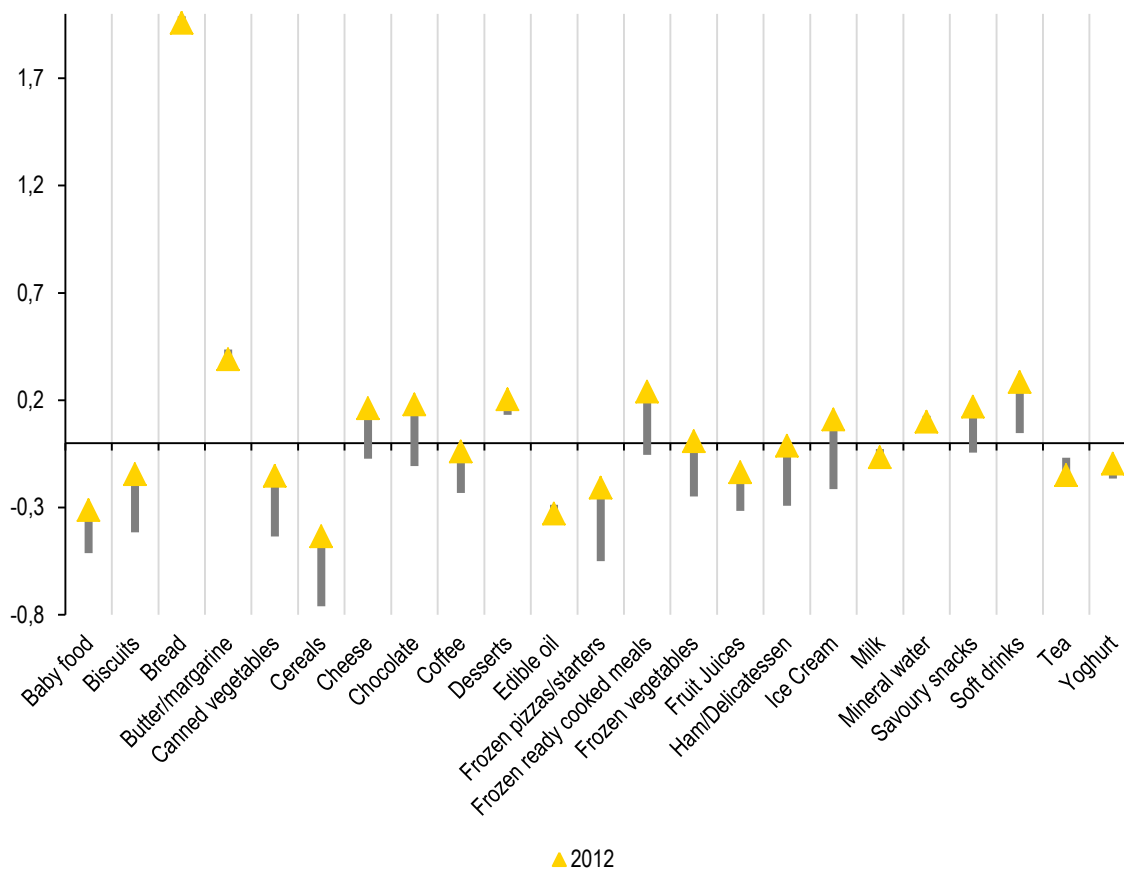
Measure of imbalance brand only - Italy
2004 - 2012 Evolution



| Poland | 2004 | 2006 | 2008 | 2010 | 2012 | CAGR 2004-2012 |
|---------------------------|---------------|---------------|--------------|--------------|--------------|----------------|
| Baby food | -0,513 | -0,486 | -0,425 | -0,384 | -0,312 | -6,0% |
| Biscuits | -0,416 | -0,400 | -0,271 | -0,235 | -0,146 | -12,3% |
| Bread | 1,989 | 2,422 | 2,339 | 2,178 | 1,958 | -0,2% |
| Butter/margarine | 0,436 | 0,481 | 0,517 | 0,484 | 0,390 | -1,4% |
| Canned vegetables | -0,435 | -0,386 | -0,269 | -0,226 | -0,153 | -12,2% |
| Cereals | -0,760 | -0,691 | -0,539 | -0,499 | -0,435 | -6,7% |
| Cheese | -0,073 | -0,003 | 0,112 | 0,107 | 0,161 | n.a |
| Chocolate | -0,106 | -0,074 | 0,044 | 0,085 | 0,180 | n.a |
| Coffee | -0,232 | -0,231 | -0,119 | -0,096 | -0,040 | -19,8% |
| Desserts | 0,131 | 0,144 | 0,180 | 0,198 | 0,203 | 5,6% |
| Edible oil | -0,287 | -0,217 | -0,362 | -0,381 | -0,328 | 1,7% |
| Frozen pizzas/starters | -0,550 | -0,474 | -0,339 | -0,288 | -0,209 | -11,4% |
| Frozen ready cooked meals | -0,054 | -0,024 | 0,109 | 0,165 | 0,239 | n.a |
| Frozen vegetables | -0,248 | -0,236 | -0,109 | -0,050 | 0,009 | n.a |
| Fruit Juices | -0,316 | -0,425 | -0,306 | -0,299 | -0,137 | -9,9% |
| Ham/Delicatessen | -0,292 | -0,239 | -0,123 | -0,074 | -0,012 | -32,6% |
| Ice Cream | -0,214 | -0,137 | -0,034 | 0,025 | 0,110 | n.a |
| Milk | -0,028 | -0,075 | -0,120 | -0,142 | -0,067 | 11,5% |
| Mineral water | 0,127 | 0,026 | 0,098 | 0,096 | 0,099 | -3,0% |
| Savoury snacks | -0,044 | -0,016 | 0,063 | 0,104 | 0,169 | n.a |
| Soft drinks | 0,046 | 0,099 | 0,231 | 0,256 | 0,284 | 25,6% |
| Tea | -0,068 | -0,164 | -0,099 | -0,153 | -0,149 | 10,4% |
| Yoghurt | -0,165 | -0,173 | -0,099 | -0,115 | -0,096 | -6,5% |
| Average | -0,090 | -0,056 | 0,021 | 0,033 | 0,075 | |

Source: EY analysis based on Euromonitor Passport data and Source: Planet Retail data

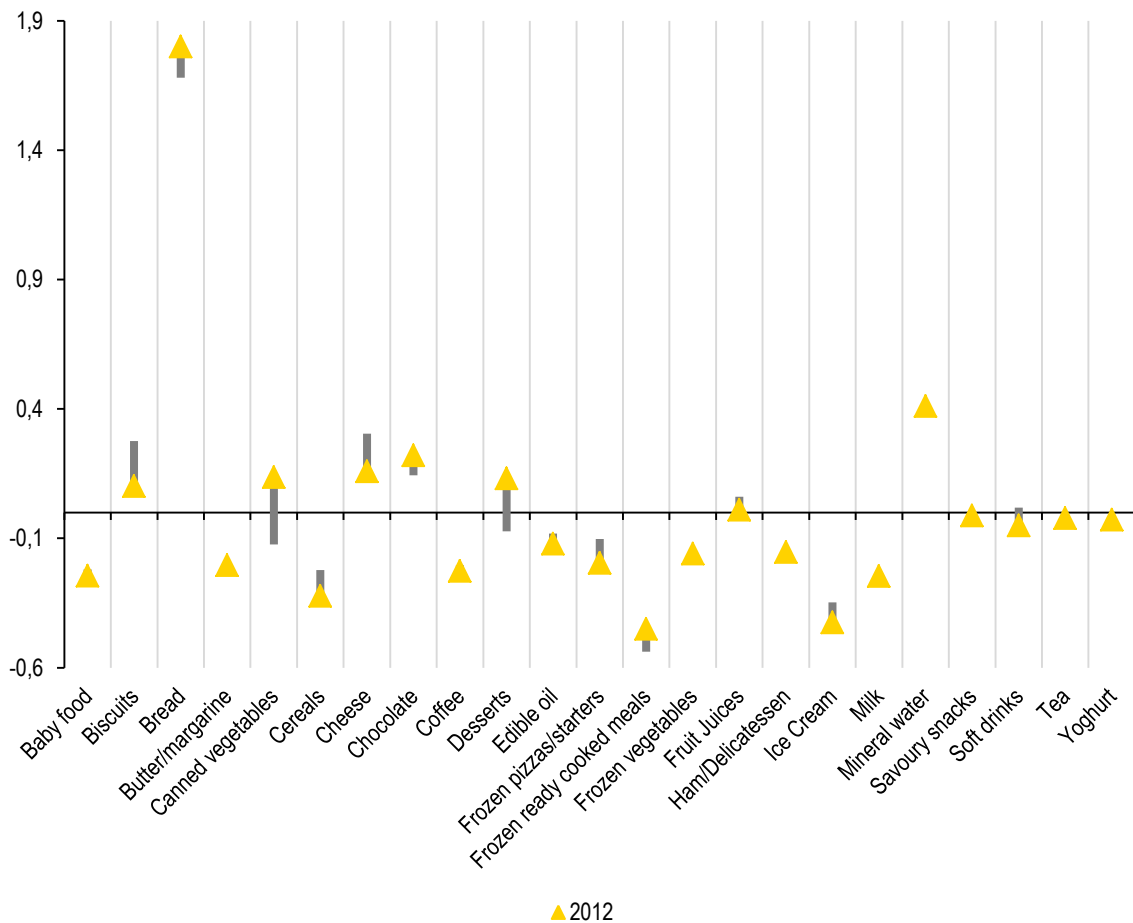
Measure of imbalance brand only - Poland
2004 - 2012 Evolution



| Portugal | 2004 | 2006 | 2008 | 2010 | 2012 | CAGR 2004-2012 |
|---------------------------|--------------|---------------|--------------|--------------|--------------|----------------|
| Baby food | -0,219 | -0,224 | -0,236 | -0,249 | -0,245 | 1,4% |
| Biscuits | 0,276 | 0,103 | 0,107 | 0,094 | 0,102 | -11,7% |
| Bread | 1,681 | 1,640 | 1,721 | 1,777 | 1,801 | 0,9% |
| Butter/margarine | -0,213 | -0,234 | -0,221 | -0,222 | -0,205 | -0,5% |
| Canned vegetables | -0,123 | -0,169 | -0,172 | 0,146 | 0,136 | n.a |
| Cereals | -0,222 | -0,330 | -0,289 | -0,314 | -0,323 | 4,8% |
| Cheese | 0,304 | 0,247 | 0,227 | 0,158 | 0,158 | -7,9% |
| Chocolate | 0,144 | 0,187 | 0,241 | 0,210 | 0,220 | 5,4% |
| Coffee | -0,204 | -0,240 | -0,215 | -0,178 | -0,226 | 1,3% |
| Desserts | -0,073 | 0,097 | 0,137 | 0,158 | 0,131 | n.a |
| Edible oil | -0,081 | -0,086 | -0,072 | -0,133 | -0,121 | 5,2% |
| Frozen pizzas/starters | -0,103 | -0,072 | -0,215 | -0,204 | -0,195 | 8,4% |
| Frozen ready cooked meals | -0,538 | -0,498 | -0,453 | -0,433 | -0,451 | -2,2% |
| Frozen vegetables | -0,193 | -0,231 | -0,164 | -0,176 | -0,159 | -2,3% |
| Fruit Juices | 0,061 | 0,034 | 0,143 | -0,020 | 0,010 | -20,3% |
| Ham/Delicatessen | -0,150 | -0,206 | -0,212 | -0,160 | -0,154 | 0,3% |
| Ice Cream | -0,347 | -0,396 | -0,411 | -0,431 | -0,426 | 2,6% |
| Milk | -0,236 | -0,202 | -0,124 | -0,076 | -0,247 | 0,6% |
| Mineral water | 0,400 | 0,292 | 0,373 | 0,409 | 0,411 | 0,4% |
| Savoury snacks | 0,000 | 0,000 | 0,061 | 0,012 | -0,012 | n.a |
| Soft drinks | 0,019 | -0,003 | -0,005 | -0,019 | -0,051 | n.a |
| Tea | -0,012 | -0,033 | 0,031 | 0,019 | -0,022 | 7,9% |
| Yoghurt | -0,050 | -0,060 | -0,003 | -0,016 | -0,028 | -6,8% |
| Average | 0,005 | -0,017 | 0,011 | 0,015 | 0,005 | |

Source: EY analysis based on Euromonitor Passport data and Source: Planet Retail data

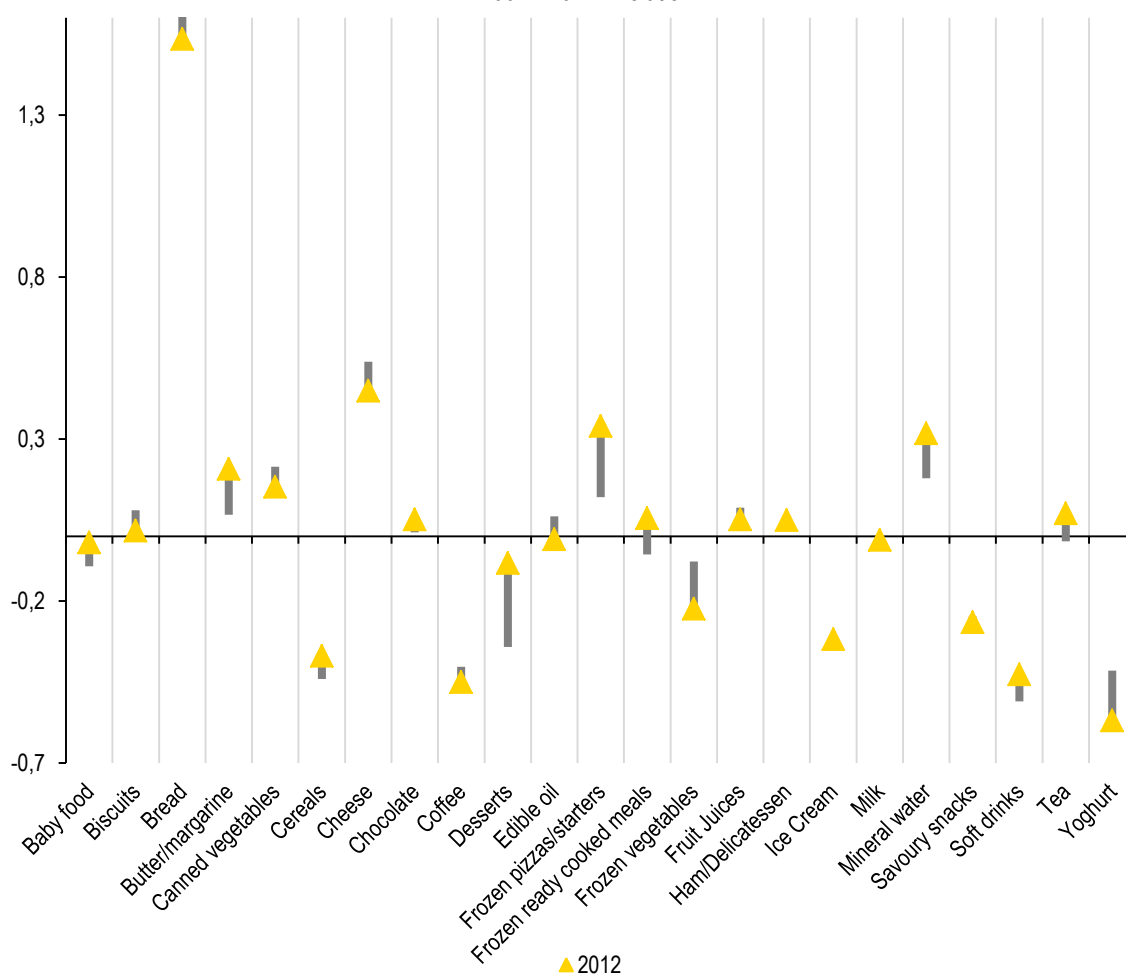
Measure of imbalance brand only - Portugal
2004 - 2012 Evolution



| Spain | 2004 | 2006 | 2008 | 2010 | 2012 | CAGR 2004-2012 |
|---------------------------|--------------|--------------|--------------|--------------|--------------|----------------|
| Babyfood | -0,092 | -0,073 | -0,064 | -0,024 | -0,020 | -17,5% |
| Biscuits | 0,080 | -0,010 | 0,039 | 0,036 | 0,017 | -17,9% |
| Bread | 1,783 | 1,693 | 1,729 | 1,715 | 1,535 | -1,9% |
| Butter/margarine | 0,067 | 0,071 | 0,105 | 0,154 | 0,207 | 15,2% |
| Canned vegetables | 0,215 | 0,135 | 0,149 | 0,165 | 0,152 | -4,2% |
| Cereals | -0,441 | -0,420 | -0,351 | -0,296 | -0,369 | -2,2% |
| Cheese | 0,539 | 0,503 | 0,588 | 0,468 | 0,448 | -2,3% |
| Chocolate | 0,012 | 0,024 | 0,092 | 0,065 | 0,052 | 20,1% |
| Coffee | -0,403 | -0,415 | -0,379 | -0,418 | -0,451 | 1,4% |
| Desserts | -0,342 | -0,215 | -0,106 | -0,068 | -0,083 | -16,2% |
| Edible oil | 0,062 | 0,036 | 0,076 | 0,068 | -0,009 | n.a |
| Frozen pizzas/starters | 0,120 | 0,208 | 0,292 | 0,358 | 0,340 | 13,8% |
| Frozen ready cooked meals | -0,056 | -0,073 | 0,047 | 0,077 | 0,055 | n.a |
| Frozen vegetables | -0,077 | -0,077 | -0,026 | 0,002 | -0,224 | 14,2% |
| Fruit Juices | 0,088 | 0,108 | 0,188 | 0,100 | 0,052 | -6,4% |
| Ham/Delicatessen | 0,041 | -0,009 | 0,186 | 0,233 | 0,050 | 2,5% |
| Ice Cream | -0,351 | -0,329 | -0,260 | -0,278 | -0,318 | -1,2% |
| Milk | -0,035 | -0,013 | 0,106 | -0,003 | -0,012 | -13,1% |
| Mineral water | 0,179 | 0,215 | 0,273 | 0,287 | 0,317 | 7,4% |
| Savoury snacks | -0,248 | -0,243 | -0,195 | -0,238 | -0,266 | 0,9% |
| Soft drinks | -0,509 | -0,473 | -0,406 | -0,402 | -0,427 | -2,2% |
| Tea | -0,016 | -0,029 | 0,046 | 0,066 | 0,070 | n.a |
| Yoghurt | -0,415 | -0,574 | -0,530 | -0,527 | -0,569 | 4,0% |
| Average | 0,009 | 0,002 | 0,070 | 0,067 | 0,024 | |

Source: EY analysis based on Euromonitor Passport data and Source: Planet Retail data

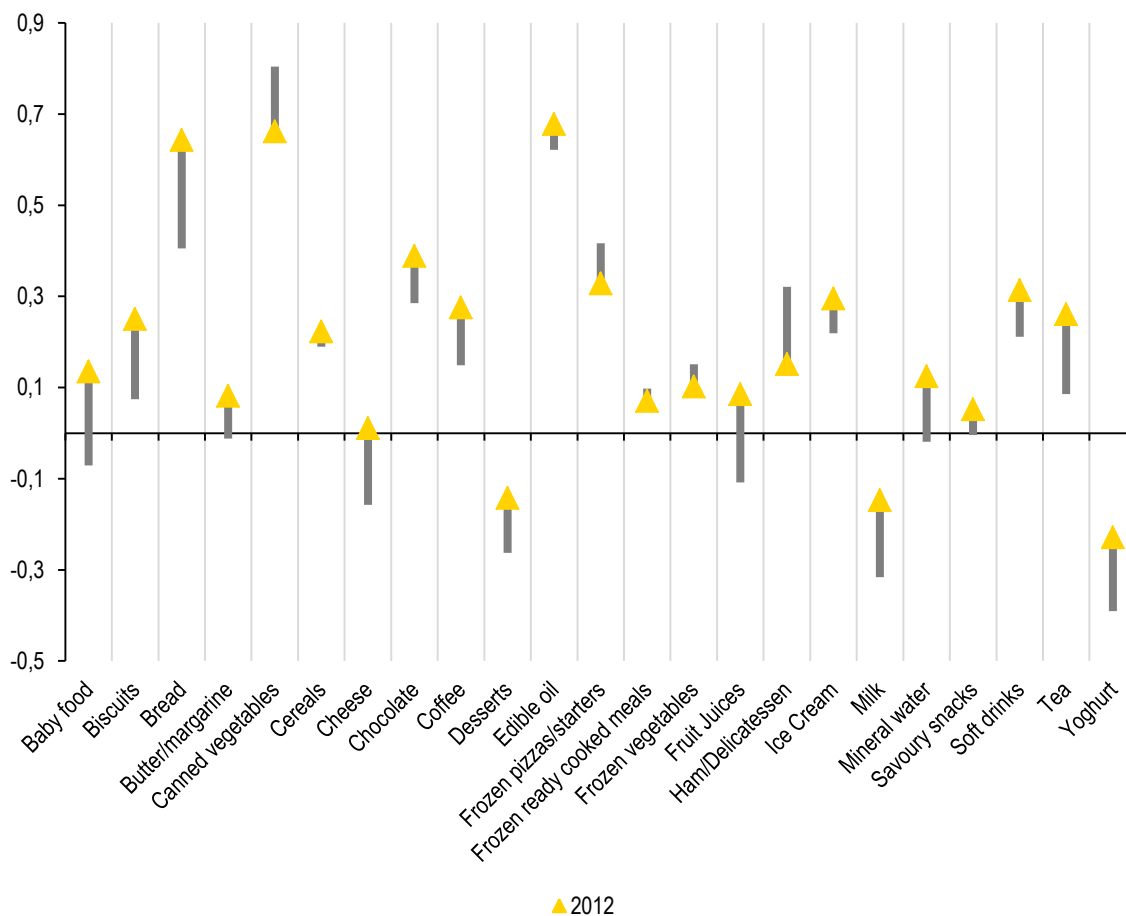
Measure of imbalance brand only - Spain
2004 - 2012 Evolution



| Finland | 2004 | 2006 | 2008 | 2010 | 2012 | CAGR 2004-2012 |
|---------------------------|--------------|--------------|--------------|--------------|--------------|----------------|
| Babyfood | -0,071 | 0,071 | 0,109 | 0,141 | 0,134 | n.a |
| Biscuits | 0,074 | 0,165 | 0,162 | 0,176 | 0,250 | 16,4% |
| Bread | 0,405 | 0,505 | 0,503 | 0,580 | 0,643 | 5,9% |
| Butter/margarine | -0,012 | 0,098 | 0,098 | 0,100 | 0,081 | n.a |
| Canned vegetables | 0,804 | 0,921 | 0,842 | 0,759 | 0,661 | -2,4% |
| Cereals | 0,190 | 0,351 | 0,271 | 0,258 | 0,223 | 2,0% |
| Cheese | -0,157 | -0,067 | -0,031 | -0,014 | 0,010 | n.a |
| Chocolate | 0,285 | 0,395 | 0,383 | 0,407 | 0,389 | 4,0% |
| Coffee | 0,149 | 0,237 | 0,241 | 0,254 | 0,276 | 8,0% |
| Desserts | -0,263 | -0,154 | -0,153 | -0,119 | -0,142 | -7,4% |
| Edible oil | 0,622 | 0,686 | 0,683 | 0,703 | 0,678 | 1,1% |
| Frozen pizzas/starters | 0,417 | 0,446 | 0,402 | 0,357 | 0,328 | -2,9% |
| Frozen ready cooked meals | 0,098 | 0,206 | 0,174 | 0,083 | 0,070 | -4,1% |
| Frozen vegetables | 0,151 | 0,214 | 0,208 | 0,215 | 0,102 | -4,8% |
| Fruit Juices | -0,108 | 0,039 | 0,020 | 0,055 | 0,085 | n.a |
| Ham/Delicatessen | 0,321 | 0,216 | 0,196 | 0,203 | 0,151 | -9,0% |
| Ice Cream | 0,219 | 0,332 | 0,343 | 0,270 | 0,295 | 3,8% |
| Milk | -0,316 | -0,147 | -0,201 | -0,173 | -0,147 | -9,1% |
| Mineral water | -0,019 | 0,127 | 0,107 | 0,095 | 0,124 | n.a |
| Savoury snacks | -0,004 | 0,150 | 0,190 | 0,066 | 0,052 | n.a |
| Soft drinks | 0,212 | 0,327 | 0,304 | 0,315 | 0,313 | 5,0% |
| Tea | 0,085 | 0,192 | 0,216 | 0,248 | 0,260 | 14,9% |
| Yoghurt | -0,391 | -0,276 | -0,253 | -0,246 | -0,229 | -6,5% |
| Average | 0,117 | 0,219 | 0,209 | 0,206 | 0,200 | |

Source: EY analysis based on Euromonitor Passport data and Source: Planet Retail data

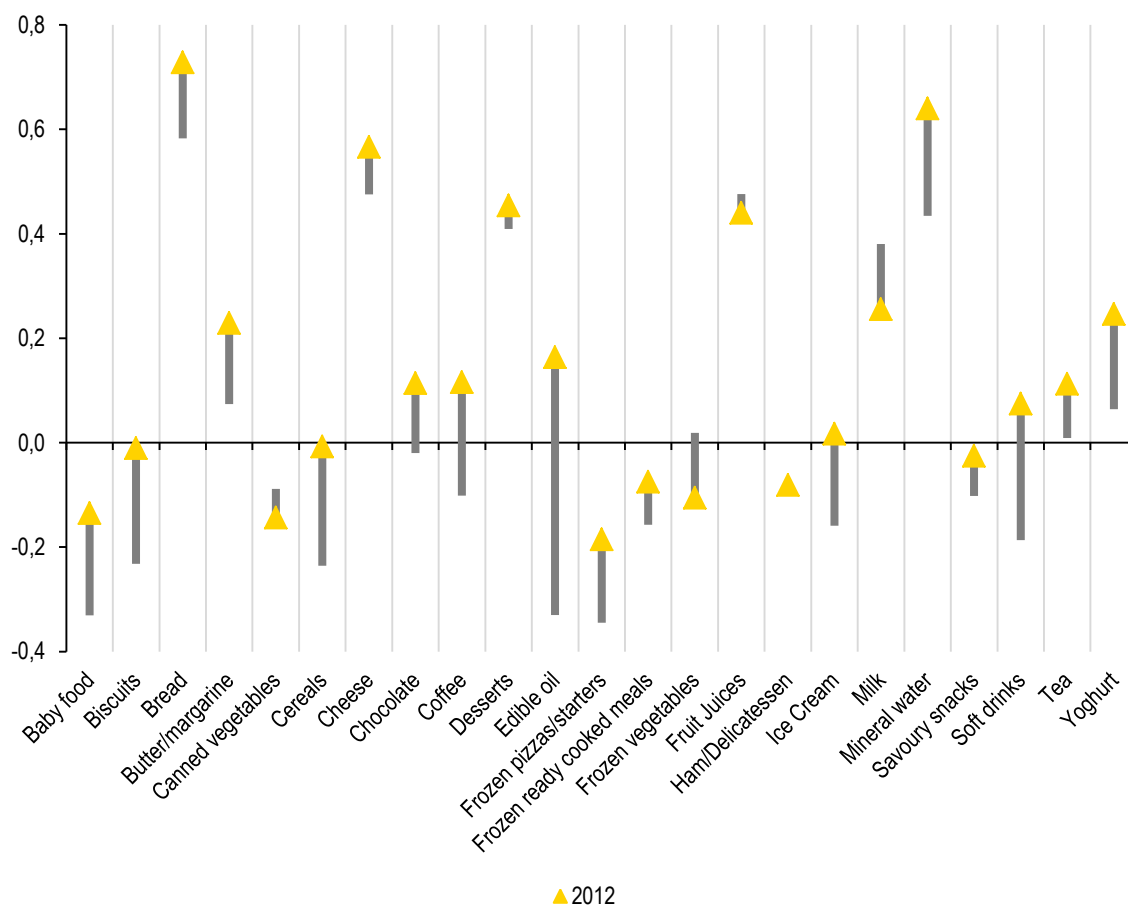
Measure of imbalance brand only - Finland
2004 - 2012 Evolution



| Germany | 2004 | 2006 | 2008 | 2010 | 2012 | CAGR 2004-2012 |
|---------------------------|--------------|--------------|--------------|--------------|--------------|----------------|
| Babyfood | -0,330 | -0,251 | -0,233 | -0,141 | -0,135 | -10,6% |
| Biscuits | -0,232 | -0,227 | -0,197 | -0,030 | -0,011 | -31,7% |
| Bread | 0,582 | 0,597 | 0,625 | 0,717 | 0,728 | 2,8% |
| Butter/margarine | 0,074 | 0,123 | 0,147 | 0,212 | 0,229 | 15,2% |
| Canned vegetables | -0,089 | -0,055 | -0,061 | -0,107 | -0,144 | 6,2% |
| Cereals | -0,235 | -0,142 | -0,105 | -0,019 | -0,008 | -34,8% |
| Cheese | 0,476 | 0,466 | 0,489 | 0,558 | 0,566 | 2,2% |
| Chocolate | -0,020 | 0,014 | 0,022 | 0,104 | 0,114 | n.a |
| Coffee | -0,102 | -0,031 | -0,019 | 0,082 | 0,115 | n.a |
| Desserts | 0,409 | 0,355 | 0,316 | 0,394 | 0,454 | 1,3% |
| Edible oil | -0,330 | -0,033 | 0,112 | 0,132 | 0,164 | n.a |
| Frozen pizzas/starters | -0,344 | -0,255 | -0,241 | -0,188 | -0,185 | -7,5% |
| Frozen ready cooked meals | -0,157 | -0,109 | -0,200 | -0,247 | -0,075 | -8,9% |
| Frozen vegetables | 0,019 | 0,057 | -0,140 | -0,125 | -0,106 | n.a |
| Fruit Juices | 0,476 | 0,465 | 0,399 | 0,429 | 0,440 | -1,0% |
| Ham/Delicatessen | -0,093 | -0,008 | -0,014 | -0,049 | -0,081 | -1,6% |
| Ice Cream | -0,159 | -0,103 | -0,089 | 0,008 | 0,017 | n.a |
| Milk | 0,380 | 0,353 | 0,280 | 0,333 | 0,255 | -4,9% |
| Mineral water | 0,434 | 0,481 | 0,528 | 0,606 | 0,640 | 5,0% |
| Savoury snacks | -0,102 | -0,014 | 0,031 | -0,036 | -0,025 | -16,0% |
| Soft drinks | -0,186 | -0,122 | -0,091 | 0,049 | 0,074 | n.a |
| Tea | 0,009 | 0,037 | 0,016 | 0,104 | 0,113 | 37,7% |
| Yoghurt | 0,064 | 0,134 | 0,117 | 0,201 | 0,246 | 18,4% |
| Average | 0,024 | 0,075 | 0,073 | 0,130 | 0,147 | |

Source: EY analysis based on Euromonitor Passport data and Source: Planet Retail data

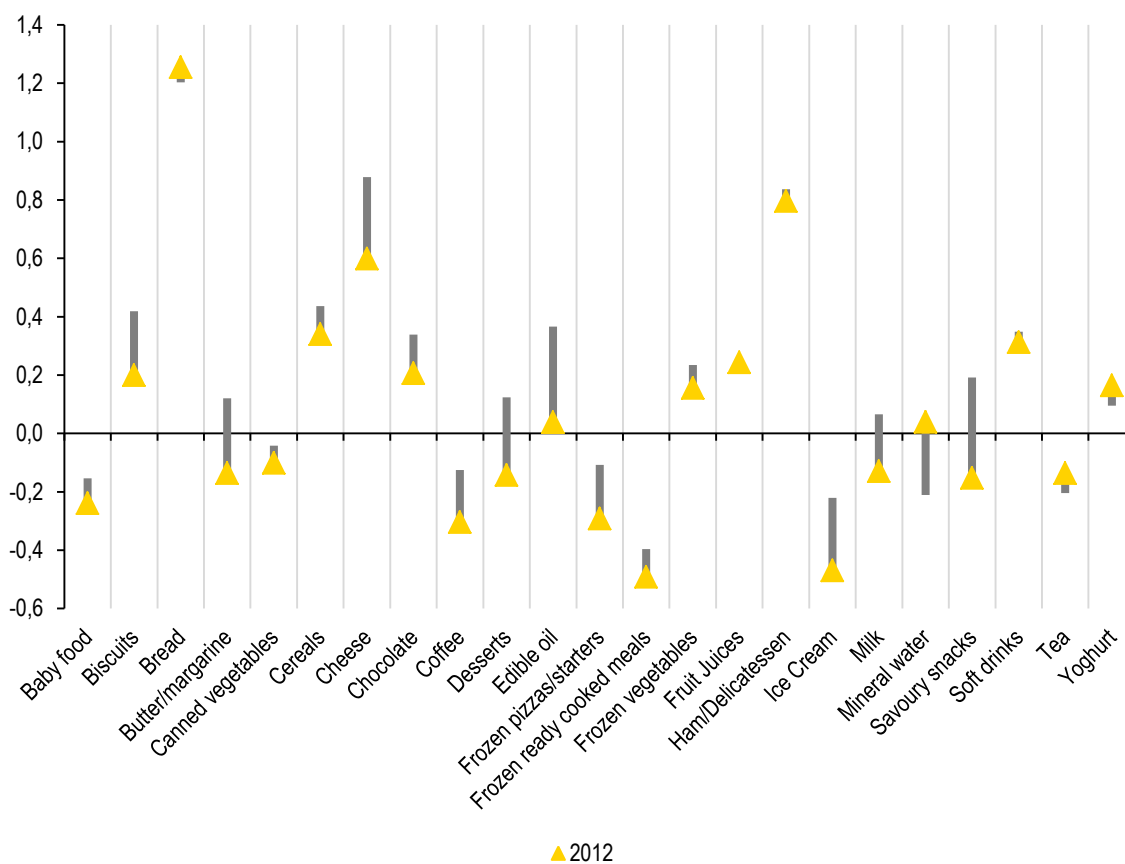
Measure of imbalance brand only - Germany
2004 - 2012 Evolution



| Netherlands | 2004 | 2006 | 2008 | 2010 | 2012 | CAGR 2004-2012 |
|---------------------------|--------------|--------------|--------------|---------------|--------------|----------------|
| Baby food | -0,153 | -0,145 | -0,302 | -0,329 | -0,239 | 5,7% |
| Biscuits | 0,419 | 0,453 | 0,247 | 0,124 | 0,200 | -8,9% |
| Bread | 1,204 | 1,236 | 1,120 | 1,108 | 1,254 | 0,5% |
| Butter/margarine | 0,121 | 0,036 | -0,087 | -0,177 | -0,136 | n.a |
| Canned vegetables | -0,042 | -0,067 | -0,128 | -0,193 | -0,101 | 11,5% |
| Cereals | 0,437 | 0,425 | 0,316 | 0,233 | 0,340 | -3,1% |
| Cheese | 0,878 | 0,834 | 0,524 | 0,524 | 0,598 | -4,7% |
| Chocolate | 0,339 | 0,318 | 0,206 | 0,151 | 0,207 | -6,0% |
| Coffee | -0,125 | -0,135 | -0,302 | -0,394 | -0,304 | 11,7% |
| Desserts | 0,124 | 0,170 | -0,175 | -0,238 | -0,142 | n.a |
| Edible oil | 0,366 | 0,275 | 0,074 | 0,002 | 0,039 | -24,5% |
| Frozen pizzas/starters | -0,108 | -0,214 | -0,374 | -0,398 | -0,292 | 13,2% |
| Frozen ready cooked meals | -0,396 | -0,463 | -0,586 | -0,606 | -0,491 | 2,7% |
| Frozen vegetables | 0,235 | 0,236 | 0,133 | 0,109 | 0,155 | -5,0% |
| Fruit Juices | 0,226 | 0,253 | 0,222 | 0,134 | 0,243 | 0,9% |
| Ham/Delicatessen | 0,837 | 0,820 | 0,754 | 0,530 | 0,796 | -0,6% |
| Ice Cream | -0,221 | -0,251 | -0,380 | -0,535 | -0,470 | 9,9% |
| Milk | 0,066 | 0,070 | -0,304 | -0,202 | -0,129 | n.a |
| Mineral water | -0,210 | -0,161 | -0,192 | -0,154 | 0,039 | n.a |
| Savoury snacks | 0,191 | -0,052 | -0,206 | -0,257 | -0,152 | n.a |
| Soft drinks | 0,348 | 0,381 | 0,246 | 0,214 | 0,312 | -1,3% |
| Tea | -0,204 | -0,143 | -0,176 | -0,205 | -0,136 | -4,9% |
| Yoghurt | 0,096 | 0,193 | -0,076 | 0,048 | 0,164 | 7,0% |
| Average | 0,192 | 0,177 | 0,024 | -0,022 | 0,076 | |

Source: EY analysis based on Euromonitor Passport data and Source: Planet Retail data

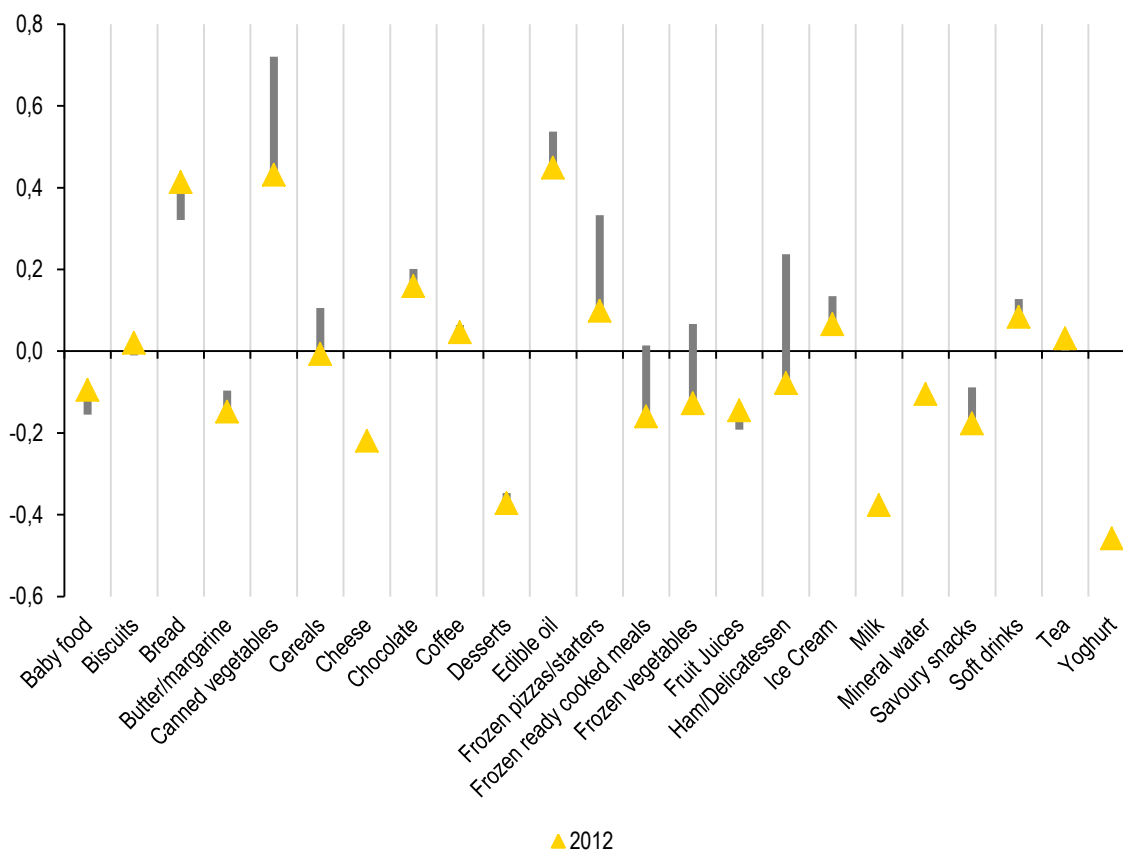
Measure of imbalance brand only - Netherlands
2004 - 2012 Evolution



| Denmark | 2004 | 2006 | 2008 | 2010 | 2012 | CAGR 2004-2012 |
|---------------------------|--------------|--------------|--------------|---------------|---------------|----------------|
| Babyfood | -0,155 | -0,107 | -0,074 | -0,069 | -0,095 | -5,9% |
| Biscuits | -0,010 | -0,012 | -0,021 | -0,034 | 0,020 | n.a |
| Bread | 0,321 | 0,327 | 0,319 | 0,371 | 0,413 | 3,2% |
| Butter/margarine | -0,096 | -0,079 | -0,085 | -0,109 | -0,148 | 5,6% |
| Canned vegetables | 0,720 | 0,743 | 0,658 | 0,550 | 0,432 | -6,2% |
| Cereals | 0,106 | 0,173 | 0,087 | 0,048 | -0,007 | n.a |
| Cheese | -0,241 | -0,245 | -0,214 | -0,223 | -0,219 | -1,2% |
| Chocolate | 0,201 | 0,217 | 0,199 | 0,198 | 0,159 | -2,9% |
| Coffee | 0,064 | 0,060 | 0,058 | 0,045 | 0,046 | -4,1% |
| Desserts | -0,347 | -0,332 | -0,336 | -0,328 | -0,372 | 0,9% |
| Edible oil | 0,538 | 0,508 | 0,500 | 0,494 | 0,448 | -2,2% |
| Frozen pizzas/starters | 0,333 | 0,268 | 0,219 | 0,148 | 0,099 | -14,1% |
| Frozen ready cooked meals | 0,014 | 0,028 | -0,009 | -0,127 | -0,159 | n.a |
| Frozen vegetables | 0,067 | 0,036 | 0,024 | 0,005 | -0,127 | n.a |
| Fruit Juices | -0,192 | -0,139 | -0,164 | -0,154 | -0,145 | -3,5% |
| Ham/Delicatessen | 0,237 | 0,038 | 0,012 | -0,007 | -0,078 | n.a |
| Ice Cream | 0,135 | 0,154 | 0,159 | 0,061 | 0,066 | -8,6% |
| Milk | -0,400 | -0,324 | -0,385 | -0,382 | -0,377 | -0,7% |
| Mineral water | -0,103 | -0,051 | -0,077 | -0,114 | -0,105 | 0,3% |
| Savoury snacks | -0,088 | -0,028 | 0,007 | -0,144 | -0,177 | 9,1% |
| Soft drinks | 0,128 | 0,149 | 0,120 | 0,106 | 0,084 | -5,1% |
| Tea | 0,001 | 0,015 | 0,033 | 0,039 | 0,031 | 48,7% |
| Yoghurt | -0,475 | -0,454 | -0,436 | -0,455 | -0,458 | -0,4% |
| Average | 0,033 | 0,041 | 0,026 | -0,004 | -0,029 | |

Source: EY analysis based on Euromonitor Passport data and Source: Planet Retail data

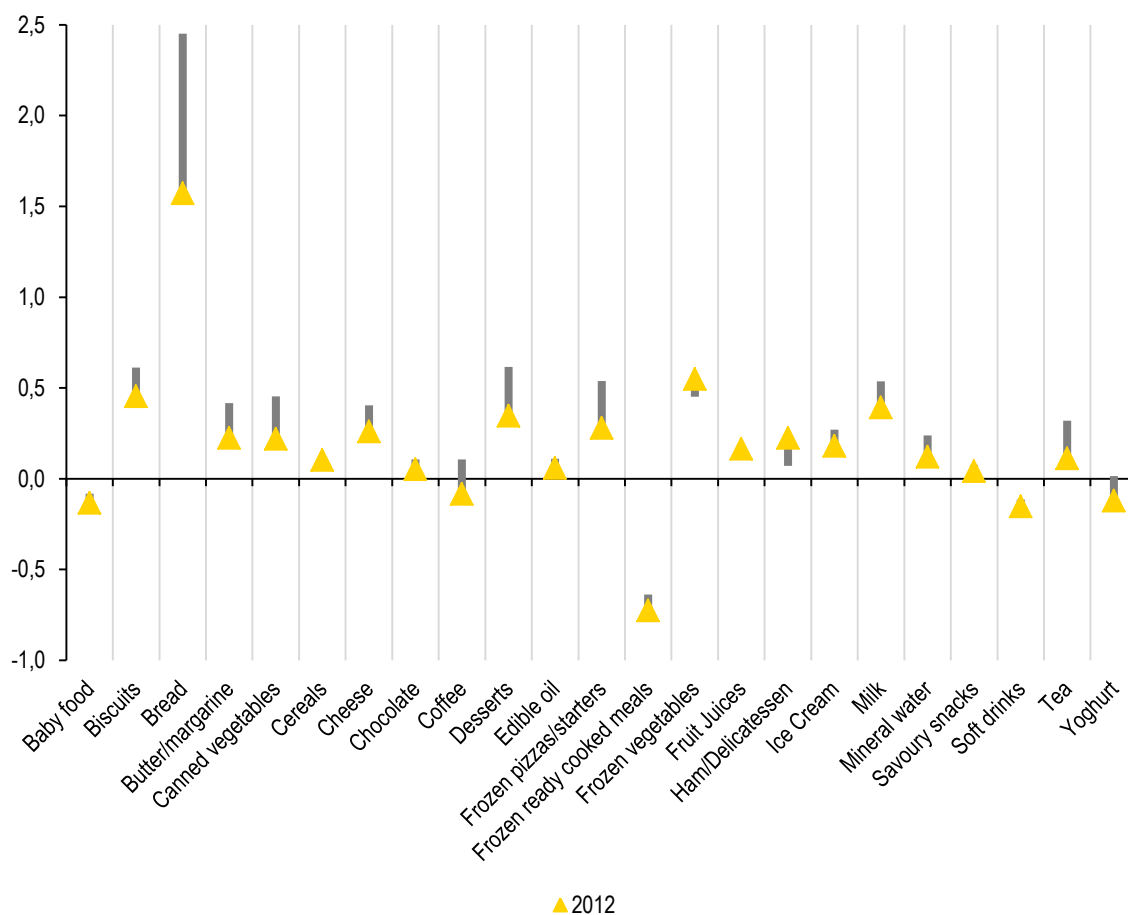
Measure of imbalance brand only - Denmark
2004 - 2012 Evolution



| Romania | 2004 | 2006 | 2008 | 2010 | 2012 | CAGR 2004-2012 |
|---------------------------|--------------|--------------|--------------|--------------|--------------|----------------|
| Baby food | -0,082 | -0,204 | -0,259 | -0,275 | -0,134 | 6,3% |
| Biscuits | 0,612 | 0,461 | 0,373 | 0,361 | 0,454 | -3,7% |
| Bread | 2,451 | 1,899 | 1,522 | 1,398 | 1,572 | -5,4% |
| Butter/margarine | 0,416 | 0,138 | 0,139 | 0,116 | 0,224 | -7,4% |
| Canned vegetables | 0,454 | 0,192 | 0,136 | 0,108 | 0,220 | -8,7% |
| Cereals | 0,123 | 0,004 | -0,006 | -0,024 | 0,102 | -2,4% |
| Cheese | 0,404 | 0,127 | 0,055 | 0,085 | 0,259 | -5,4% |
| Chocolate | 0,107 | -0,022 | 0,007 | -0,018 | 0,051 | -8,9% |
| Coffee | 0,107 | -0,020 | -0,185 | -0,233 | -0,084 | n.a |
| Desserts | 0,615 | 0,239 | 0,130 | 0,171 | 0,347 | -6,9% |
| Edible oil | 0,110 | 0,006 | -0,157 | -0,074 | 0,058 | -7,6% |
| Frozen pizzas/starters | 0,539 | 0,433 | 0,405 | 0,283 | 0,279 | -7,9% |
| Frozen ready cooked meals | -0,638 | -0,804 | -0,856 | -0,866 | -0,726 | 1,6% |
| Frozen vegetables | 0,452 | 0,307 | 0,407 | 0,398 | 0,548 | 2,4% |
| Fruit Juices | 0,134 | -0,001 | 0,021 | -0,012 | 0,164 | 2,6% |
| Ham/Delicatessen | 0,070 | -0,127 | 0,006 | 0,066 | 0,223 | 15,6% |
| Ice Cream | 0,270 | 0,036 | 0,041 | 0,038 | 0,180 | -4,9% |
| Milk | 0,537 | 0,208 | 0,152 | 0,247 | 0,391 | -3,9% |
| Mineral water | 0,238 | 0,009 | -0,070 | -0,078 | 0,120 | -8,2% |
| Savoury snacks | 0,077 | -0,079 | -0,055 | -0,098 | 0,041 | -7,6% |
| Soft drinks | -0,115 | -0,197 | -0,234 | -0,259 | -0,153 | 3,7% |
| Tea | 0,319 | 0,049 | -0,030 | -0,078 | 0,111 | -12,3% |
| Yoghurt | 0,014 | -0,096 | -0,168 | -0,201 | -0,121 | n.a |
| Average | 0,314 | 0,111 | 0,060 | 0,046 | 0,179 | |

Source: EY analysis based on Euromonitor Passport data and Source: Planet Retail data

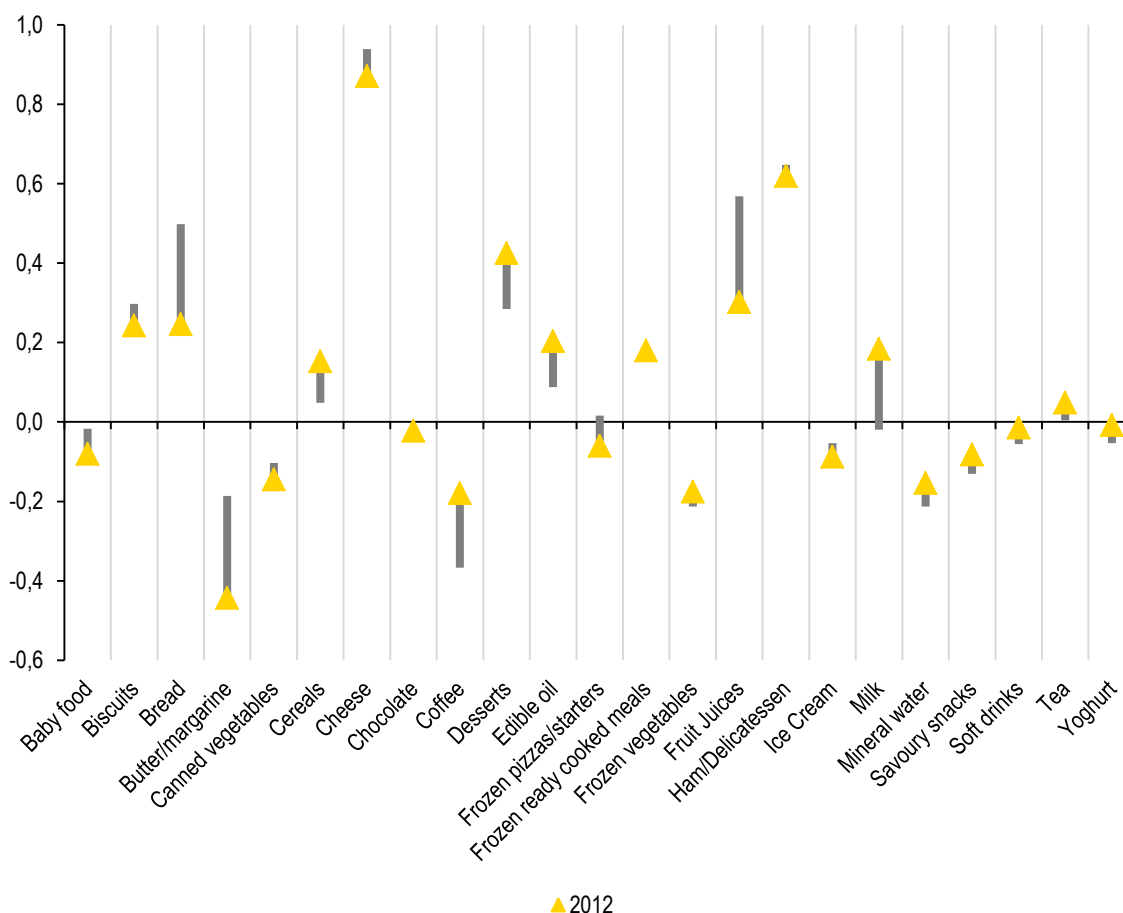
Measure of imbalance brand only - Romania
2004 - 2012 Evolution



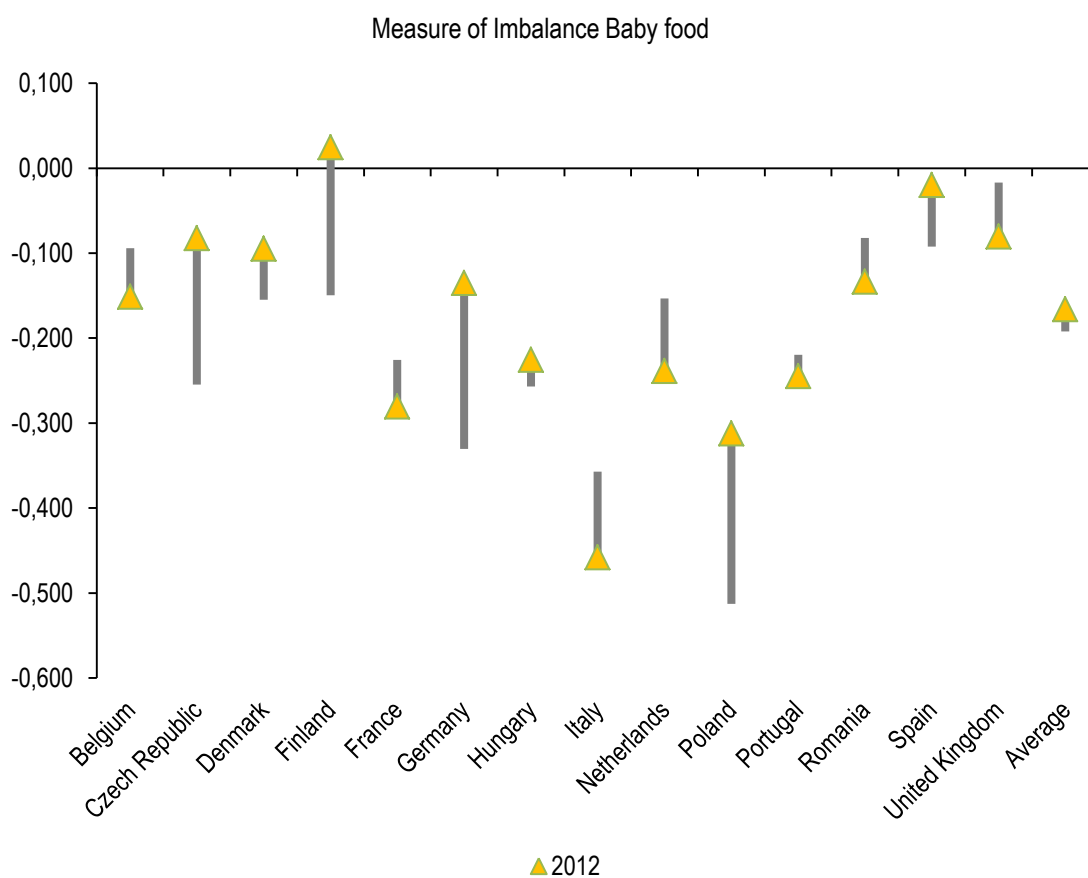
| United Kingdom | 2004 | 2006 | 2008 | 2010 | 2012 | CAGR 2004-2012 |
|---------------------------|--------------|--------------|--------------|--------------|--------------|----------------|
| Babyfood | -0,017 | -0,034 | -0,053 | -0,062 | -0,081 | 21,7% |
| Biscuits | 0,298 | 0,278 | 0,284 | 0,261 | 0,243 | -2,5% |
| Bread | 0,498 | 0,366 | 0,253 | 0,262 | 0,246 | -8,5% |
| Butter/margarine | -0,186 | -0,194 | -0,237 | -0,436 | -0,443 | 11,5% |
| Canned vegetables | -0,103 | -0,148 | -0,177 | -0,153 | -0,145 | 4,4% |
| Cereals | 0,048 | 0,086 | 0,103 | 0,132 | 0,153 | 15,5% |
| Cheese | 0,939 | 0,929 | 0,913 | 0,861 | 0,871 | -0,9% |
| Chocolate | -0,013 | -0,002 | 0,010 | -0,031 | -0,023 | 7,5% |
| Coffee | -0,367 | -0,339 | -0,300 | -0,249 | -0,180 | -8,5% |
| Desserts | 0,285 | 0,315 | 0,350 | 0,389 | 0,425 | 5,1% |
| Edible oil | 0,088 | 0,129 | 0,181 | 0,262 | 0,203 | 11,1% |
| Frozen pizzas/starters | 0,016 | -0,006 | 0,032 | -0,043 | -0,060 | n.a |
| Frozen ready cooked meals | 0,155 | 0,160 | 0,233 | 0,191 | 0,180 | 1,9% |
| Frozen vegetables | -0,213 | -0,232 | -0,198 | -0,168 | -0,175 | -2,4% |
| Fruit Juices | 0,569 | 0,467 | 0,359 | 0,310 | 0,301 | -7,6% |
| Ham/Delicatessen | 0,648 | 0,690 | 0,680 | 0,651 | 0,619 | -0,6% |
| Ice Cream | -0,054 | -0,046 | -0,020 | -0,048 | -0,088 | 6,4% |
| Milk | -0,019 | 0,023 | 0,098 | 0,154 | 0,183 | n.a |
| Mineral water | -0,213 | -0,222 | -0,186 | -0,188 | -0,154 | -4,0% |
| Savoury snacks | -0,130 | -0,103 | -0,098 | -0,069 | -0,082 | -5,6% |
| Soft drinks | -0,055 | -0,051 | -0,056 | -0,034 | -0,014 | -15,6% |
| Tea | 0,004 | -0,022 | 0,016 | 0,036 | 0,048 | 36,6% |
| Yoghurt | -0,053 | -0,007 | -0,037 | -0,066 | -0,008 | -21,4% |
| Average | 0,092 | 0,089 | 0,093 | 0,085 | 0,088 | |

Source: EY analysis based on Euromonitor Passport data and Source: Planet Retail data

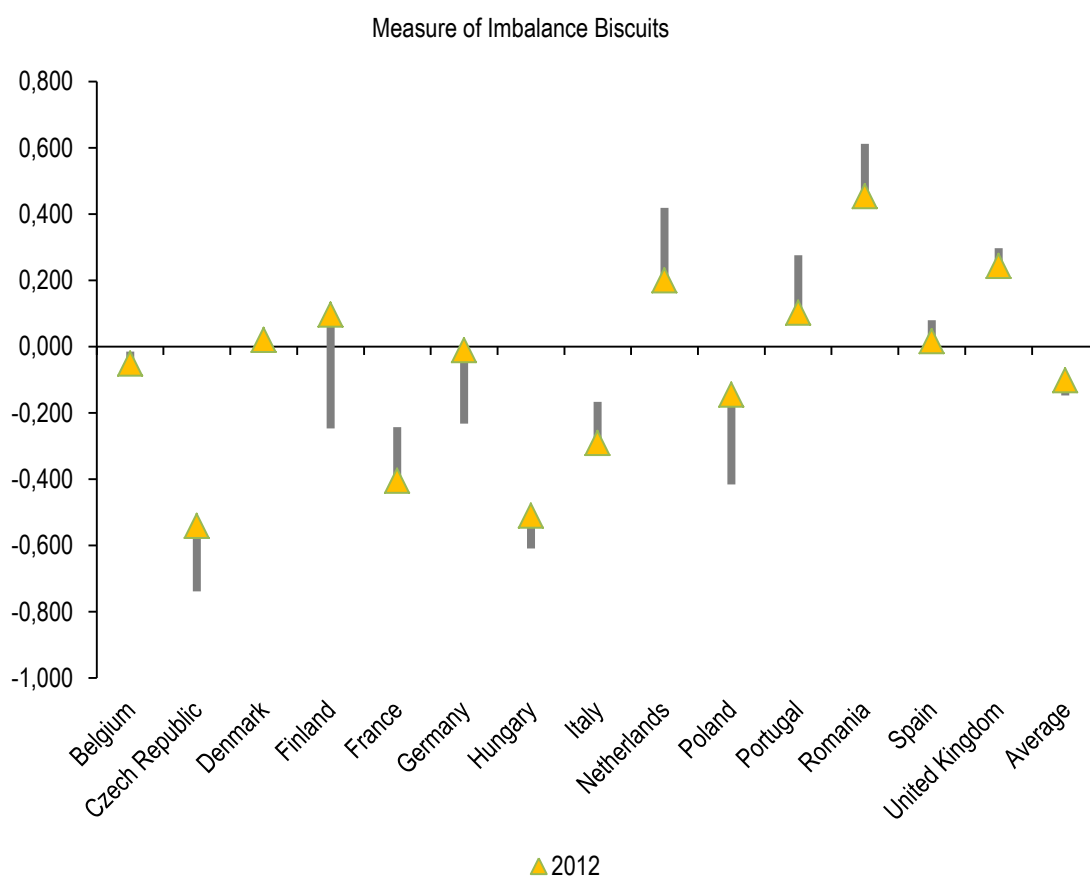
Measure of imbalance brand only - United Kingdom
2004 - 2012 Evolution



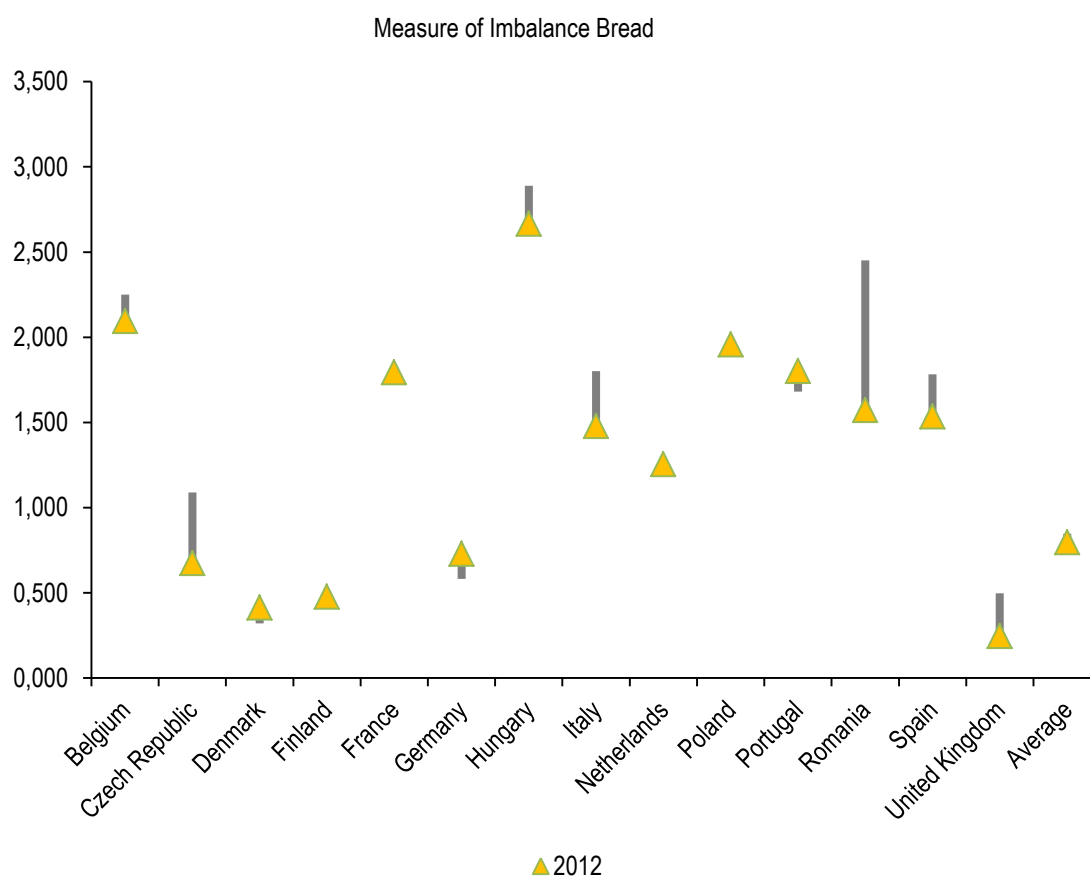
| Measure of imbalance | 2004 | 2005 | 2006 | 2007 | 2008 | CAGR 2004-2008 | CAGR 2004-2008 | CAGR 2008-2012 |
|----------------------|---------------|---------------|---------------|---------------|---------------|-------------------|-------------------|-------------------|
| Baby food | | | | | | | | |
| Belgium | -0,094 | -0,105 | -0,157 | -0,151 | -0,151 | 6,1% | 13,7% | -0,9% |
| Czech Republic | -0,255 | -0,196 | -0,102 | -0,106 | -0,082 | -13,1% | -20,4% | -5,2% |
| Denmark | -0,155 | -0,107 | -0,074 | -0,069 | -0,095 | -5,9% | -16,8% | 6,4% |
| Finland | -0,149 | -0,016 | -0,055 | -0,048 | 0,025 | #NUM! | -22,2% | #NUM! |
| France | -0,226 | -0,215 | -0,232 | -0,256 | -0,281 | 2,8% | 0,7% | 4,9% |
| Germany | -0,330 | -0,251 | -0,233 | -0,141 | -0,135 | -10,6% | -8,3% | -12,8% |
| Hungary | -0,257 | -0,260 | -0,213 | -0,258 | -0,226 | -1,6% | -4,6% | 1,5% |
| Italy | -0,357 | -0,421 | -0,441 | -0,447 | -0,458 | 3,2% | 5,4% | 0,9% |
| Netherlands | -0,153 | -0,145 | -0,302 | -0,329 | -0,239 | 5,7% | 18,4% | -5,7% |
| Poland | -0,513 | -0,486 | -0,425 | -0,384 | -0,312 | -6,0% | -4,6% | -7,4% |
| Portugal | -0,219 | -0,224 | -0,236 | -0,249 | -0,245 | 1,4% | 1,9% | 0,9% |
| Romania | -0,082 | -0,204 | -0,259 | -0,275 | -0,134 | 6,3% | 33,2% | -15,2% |
| Spain | -0,092 | -0,073 | -0,064 | -0,024 | -0,020 | -17,5% | -8,7% | -25,4% |
| United Kingdom | -0,017 | -0,034 | -0,053 | -0,062 | -0,081 | 21,7% | 33,5% | 10,9% |
| Average | -0,192 | -0,177 | -0,196 | -0,193 | -0,166 | -1,8% | 0,5% | -4,0% |



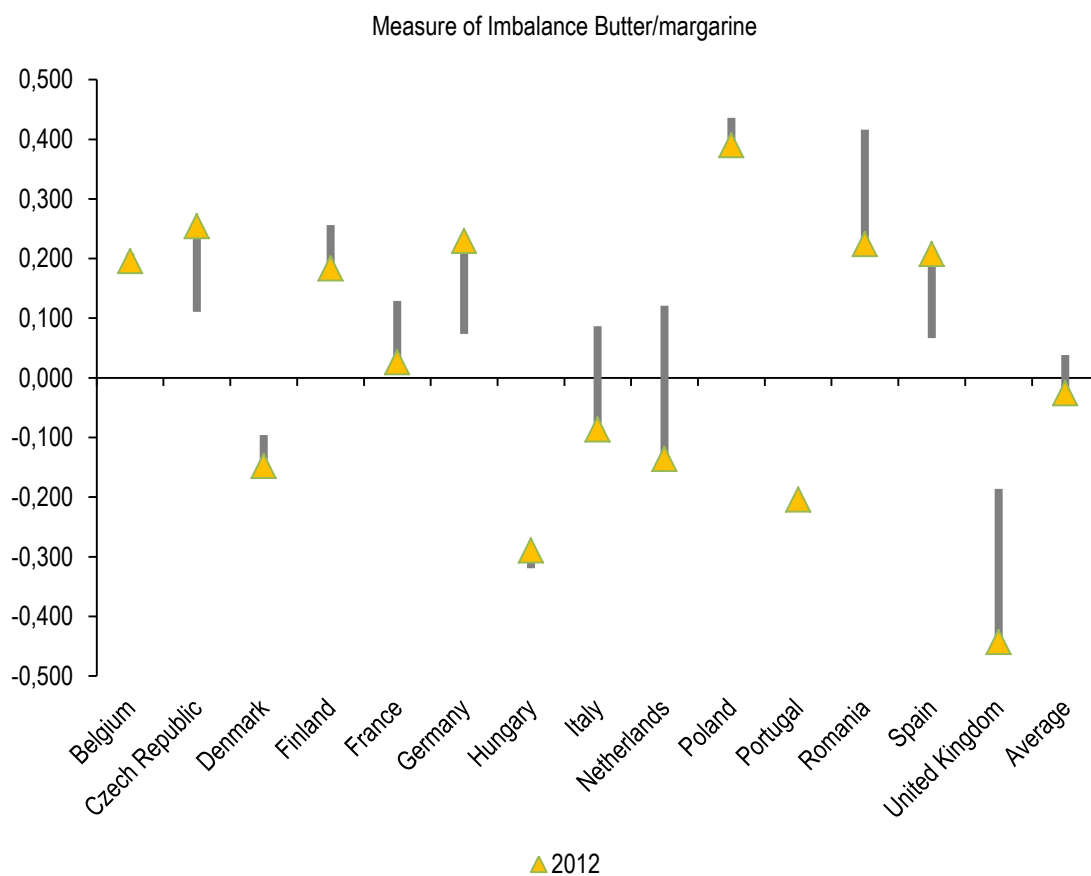
| Measure of imbalance | 2004 | 2006 | 2008 | 2010 | 2012 | CAGR | CAGR | CAGR |
|----------------------|---------------|---------------|---------------|---------------|---------------|--------------|--------------|--------------|
| | | | | | | 2004-2012 | 2004-2008 | 2008-2012 |
| Biscuits | | | | | | | | |
| Belgium | -0,015 | -0,051 | 0,057 | -0,053 | -0,051 | 16,8% | #NUM! | #NUM! |
| Czech Republic | -0,738 | -0,654 | -0,577 | -0,561 | -0,541 | -3,8% | -6,0% | -1,6% |
| Denmark | -0,010 | -0,012 | -0,021 | -0,034 | 0,020 | #NUM! | 21,1% | #NUM! |
| Finland | -0,247 | -0,152 | -0,159 | -0,158 | 0,097 | #NUM! | -10,5% | #NUM! |
| France | -0,243 | -0,292 | -0,332 | -0,371 | -0,405 | 6,6% | 8,2% | 5,1% |
| Germany | -0,232 | -0,227 | -0,197 | -0,030 | -0,011 | -31,7% | -4,0% | -51,5% |
| Hungary | -0,609 | -0,596 | -0,475 | -0,537 | -0,510 | -2,2% | -6,1% | 1,8% |
| Italy | -0,167 | -0,245 | -0,262 | -0,279 | -0,291 | 7,2% | 12,0% | 2,7% |
| Netherlands | 0,419 | 0,453 | 0,247 | 0,124 | 0,200 | -8,9% | -12,4% | -5,2% |
| Poland | -0,416 | -0,400 | -0,271 | -0,235 | -0,146 | -12,3% | -10,1% | -14,4% |
| Portugal | 0,276 | 0,103 | 0,107 | 0,094 | 0,102 | -11,7% | -21,2% | -1,1% |
| Romania | 0,612 | 0,461 | 0,373 | 0,361 | 0,454 | -3,7% | -11,6% | 5,0% |
| Spain | 0,080 | -0,010 | 0,039 | 0,036 | 0,017 | -17,9% | -16,4% | -19,3% |
| United Kingdom | 0,298 | 0,278 | 0,284 | 0,261 | 0,243 | -2,5% | -1,2% | -3,8% |
| Average | -0,147 | -0,158 | -0,146 | -0,157 | -0,102 | -4,5% | -0,2% | -8,6% |



| Measure of imbalance | 2004 | 2006 | 2008 | 2010 | 2012 | CAGR 2004-2012 | CAGR 2004-2008 | CAGR 2008-2012 |
|----------------------|--------------|--------------|--------------|--------------|--------------|-------------------|-------------------|-------------------|
| Bread | | | | | | | | |
| Belgium | 2,251 | 2,135 | 2,099 | 2,084 | 2,095 | -0.9% | -1.7% | 0.0% |
| Czech Republic | 1,090 | 0,925 | 0,872 | 0,874 | 0,675 | -5.8% | -5.4% | -6.2% |
| Denmark | 0,321 | 0,327 | 0,319 | 0,371 | 0,413 | 3.2% | -0.1% | 6.7% |
| Finland | 0,411 | 0,521 | 0,500 | 0,474 | 0,476 | 1.8% | 5.0% | -1.2% |
| France | 1,802 | 1,828 | 1,851 | 1,847 | 1,793 | -0.1% | 0.7% | -0.8% |
| Germany | 0,582 | 0,597 | 0,625 | 0,717 | 0,728 | 2.8% | 1.8% | 3.9% |
| Hungary | 2,890 | 2,887 | 2,631 | 2,564 | 2,666 | -1.0% | -2.3% | 0.3% |
| Italy | 1,801 | 1,761 | 1,657 | 1,555 | 1,478 | -2.4% | -2.1% | -2.8% |
| Netherlands | 1,204 | 1,236 | 1,120 | 1,108 | 1,254 | 0.5% | -1.8% | 2.9% |
| Poland | 1,989 | 2,422 | 2,339 | 2,178 | 1,958 | -0.2% | 4.1% | -4.3% |
| Portugal | 1,681 | 1,640 | 1,721 | 1,777 | 1,801 | 0.9% | 0.6% | 1.1% |
| Romania | 2,451 | 1,899 | 1,522 | 1,398 | 1,572 | -5.4% | -11.2% | 0.8% |
| Spain | 1,783 | 1,693 | 1,729 | 1,715 | 1,535 | -1.9% | -0.8% | -2.9% |
| United Kingdom | 0,498 | 0,366 | 0,253 | 0,262 | 0,246 | -8.5% | -15.6% | -0.7% |
| Average | 0,847 | 0,815 | 0,776 | 0,785 | 0,797 | -0,8% | -2,2% | 0,7% |

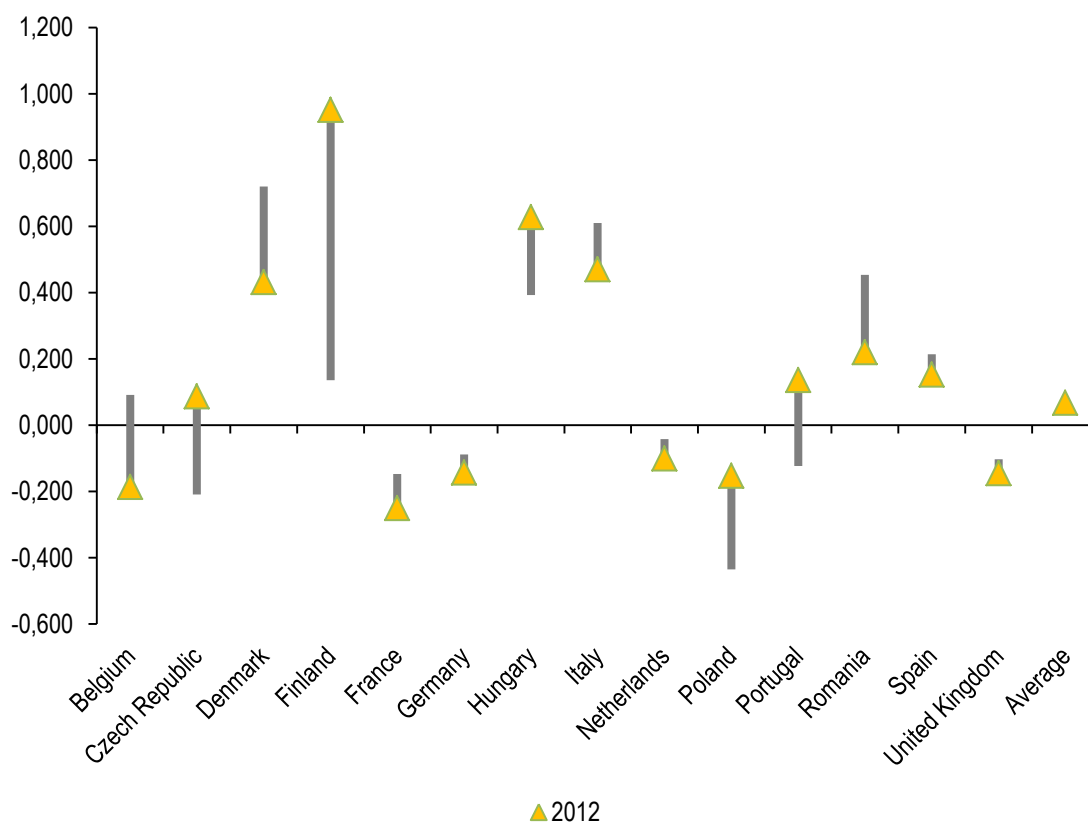


| Measure of imbalance | 2004 | 2006 | 2008 | 2010 | 2012 | CAGR | CAGR | CAGR |
|-------------------------|--------------|--------------|--------------|---------------|---------------|--------------|---------------|--------------|
| | | | | | | 2004-2012 | 2004-2008 | 2008-2012 |
| Butter/margarine | | | | | | | | |
| Belgium | 0,208 | 0,186 | 0,210 | 0,214 | 0,196 | -0,8% | 0,2% | -1,8% |
| Czech Republic | 0,111 | 0,124 | 0,217 | 0,234 | 0,254 | 10,9% | 18,2% | 4,1% |
| Denmark | -0,096 | -0,079 | -0,085 | -0,109 | -0,148 | 5,6% | -2,9% | 14,8% |
| Finland | 0,256 | 0,352 | 0,311 | 0,312 | 0,183 | -4,1% | 5,0% | -12,4% |
| France | 0,129 | 0,122 | 0,063 | 0,052 | 0,026 | -18,3% | -16,5% | -20,0% |
| Germany | 0,074 | 0,123 | 0,147 | 0,212 | 0,229 | 15,2% | 18,8% | 11,8% |
| Hungary | -0,319 | -0,299 | -0,246 | -0,303 | -0,290 | -1,2% | -6,3% | 4,2% |
| Italy | 0,087 | 0,026 | 0,026 | 0,014 | -0,087 | #NUM! | -25,8% | #NUM! |
| Netherlands | 0,121 | 0,036 | -0,087 | -0,177 | -0,136 | #NUM! | #NUM! | 12,0% |
| Poland | 0,436 | 0,481 | 0,517 | 0,484 | 0,390 | -1,4% | 4,3% | -6,8% |
| Portugal | -0,213 | -0,234 | -0,221 | -0,222 | -0,205 | -0,5% | 0,9% | -1,9% |
| Romania | 0,416 | 0,138 | 0,139 | 0,116 | 0,224 | -7,4% | -24,0% | 12,8% |
| Spain | 0,067 | 0,071 | 0,105 | 0,154 | 0,207 | 15,2% | 12,0% | 18,5% |
| United Kingdom | -0,186 | -0,194 | -0,237 | -0,436 | -0,443 | 11,5% | 6,3% | 16,9% |
| Average | 0,038 | 0,027 | 0,018 | -0,021 | -0,026 | #NUM! | -17,0% | #NUM! |

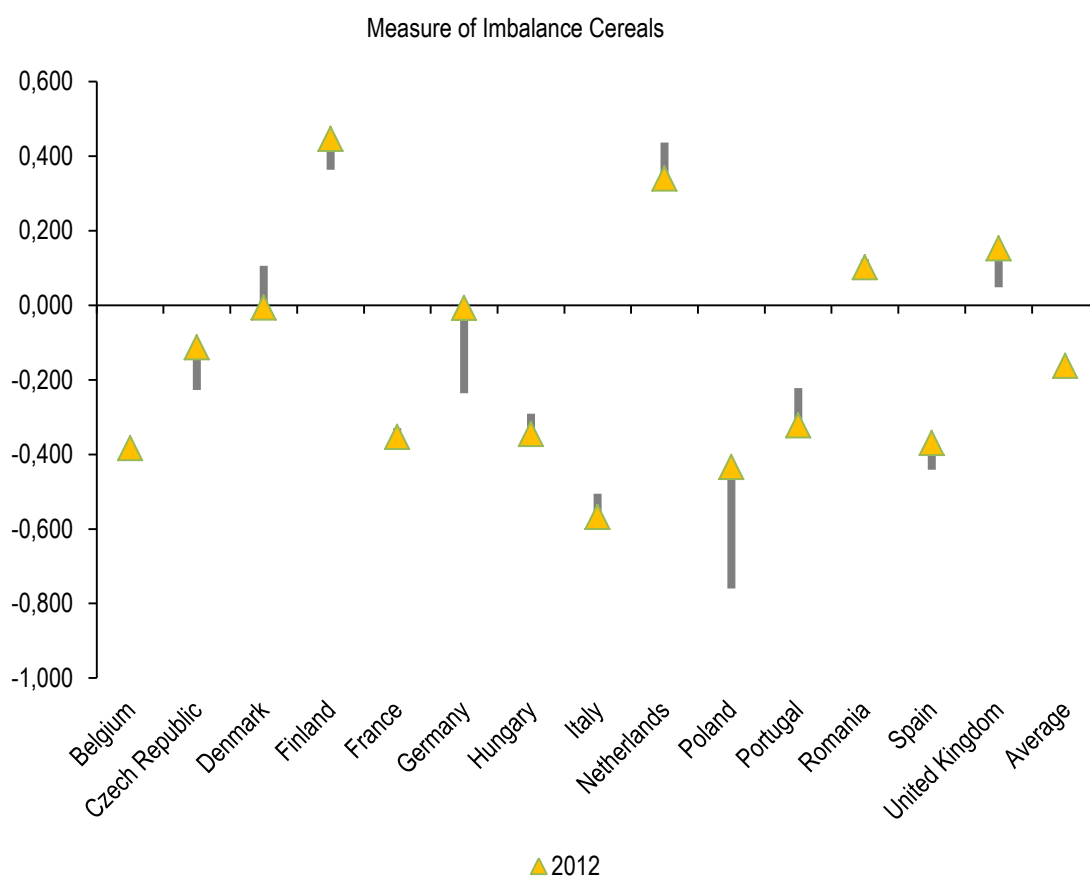


| Measure of imbalance | 2004 | 2006 | 2008 | 2010 | 2012 | CAGR | CAGR | CAGR |
|--------------------------|--------------|--------------|--------------|--------------|--------------|-------------|-------------|-------------|
| | | | | | | 2004-2012 | 2004-2008 | 2008-2012 |
| Canned vegetables | | | | | | | | |
| Belgium | 0,092 | -0,026 | -0,123 | -0,188 | -0,187 | #NUM! | #NUM! | 11,0% |
| Czech Republic | -0,209 | -0,032 | 0,026 | 0,040 | 0,087 | #NUM! | #NUM! | 35,6% |
| Denmark | 0,720 | 0,743 | 0,658 | 0,550 | 0,432 | -6,2% | -2,2% | -10,0% |
| Finland | 0,136 | 0,935 | 0,921 | 0,938 | 0,951 | 27,5% | 61,4% | 0,8% |
| France | -0,147 | -0,163 | -0,187 | -0,203 | -0,251 | 6,9% | 6,3% | 7,6% |
| Germany | -0,089 | -0,055 | -0,061 | -0,107 | -0,144 | 6,2% | -9,0% | 24,1% |
| Hungary | 0,393 | 0,622 | 0,869 | 0,672 | 0,628 | 6,0% | 21,9% | -7,8% |
| Italy | 0,611 | 0,556 | 0,521 | 0,491 | 0,470 | -3,2% | -3,9% | -2,5% |
| Netherlands | -0,042 | -0,067 | -0,128 | -0,193 | -0,101 | 11,5% | 32,1% | -5,9% |
| Poland | -0,435 | -0,386 | -0,269 | -0,226 | -0,153 | -12,2% | -11,3% | -13,2% |
| Portugal | -0,123 | -0,169 | -0,172 | 0,146 | 0,136 | #NUM! | 8,8% | #NUM! |
| Romania | 0,454 | 0,192 | 0,136 | 0,108 | 0,220 | -8,7% | -26,1% | 12,8% |
| Spain | 0,215 | 0,135 | 0,149 | 0,165 | 0,152 | -4,2% | -8,7% | 0,5% |
| United Kingdom | -0,103 | -0,148 | -0,177 | -0,153 | -0,145 | 4,4% | 14,5% | -4,8% |
| Average | 0,047 | 0,069 | 0,052 | 0,057 | 0,068 | 4,8% | 2,7% | 6,9% |

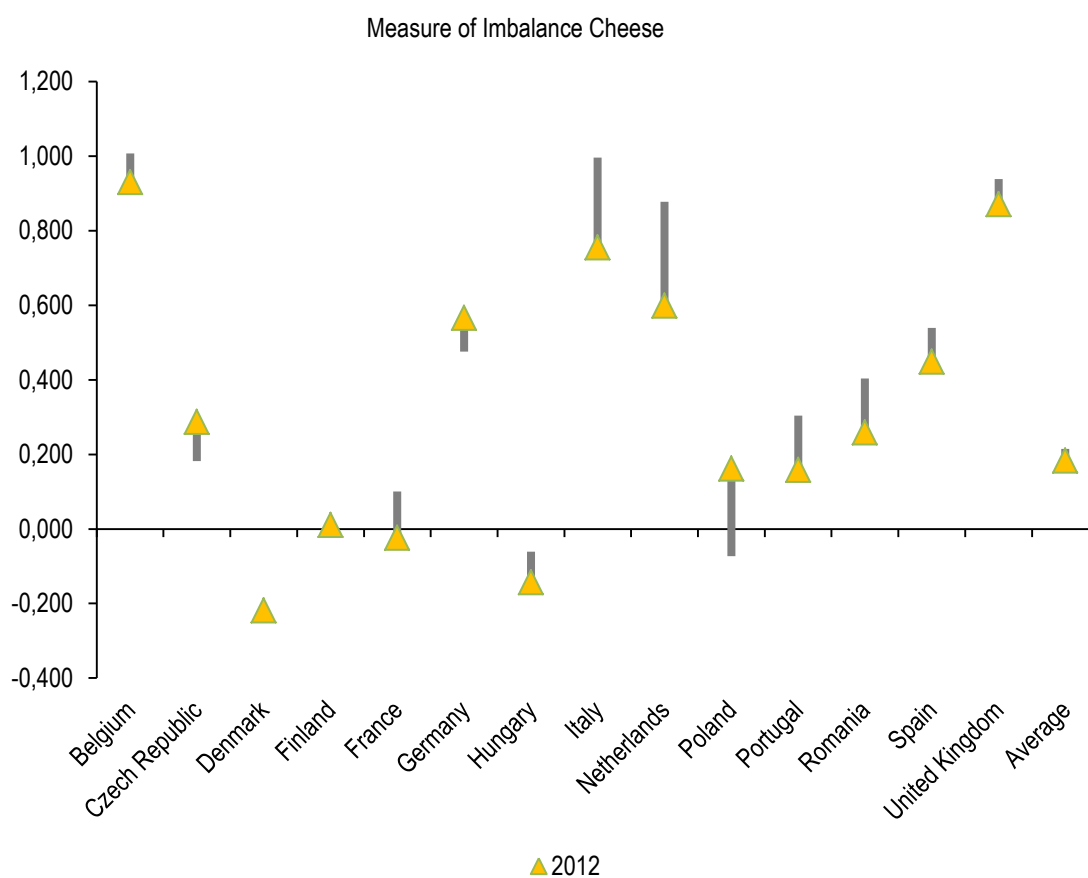
Measure of Imbalance Canned vegetables



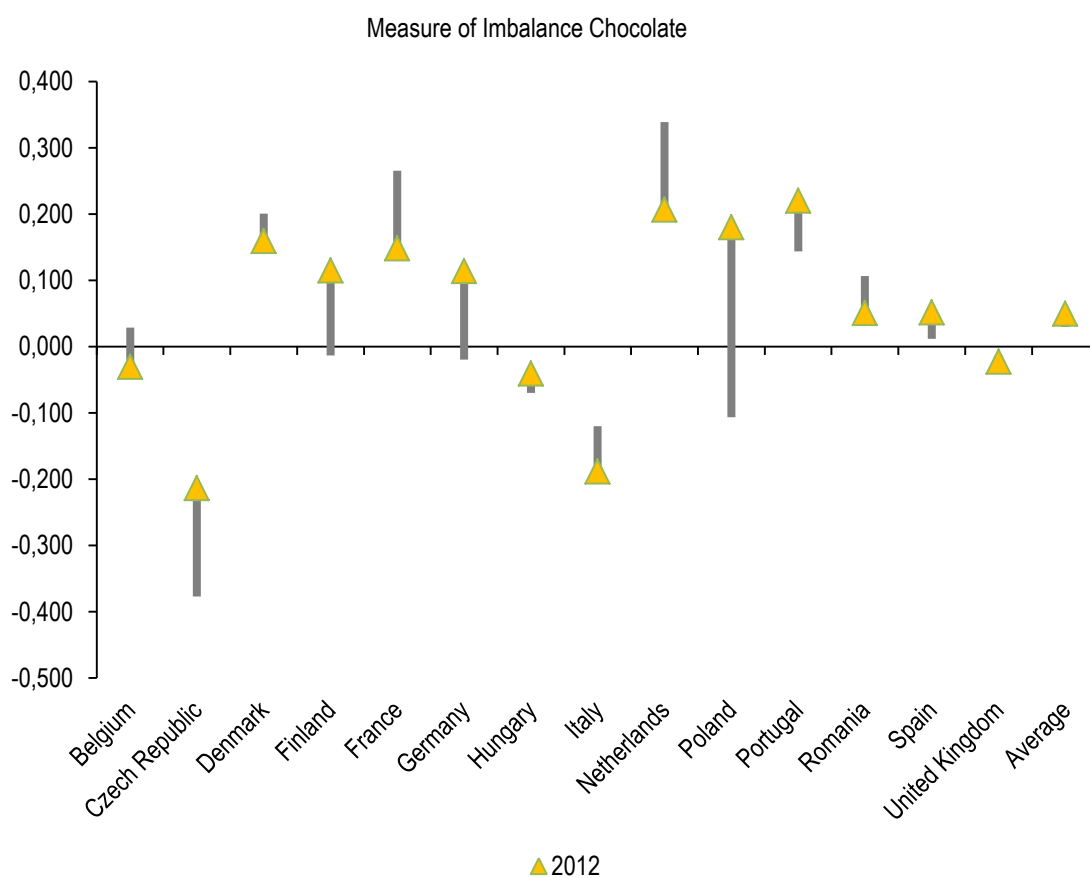
| Measure of imbalance | 2004 | 2006 | 2008 | 2010 | 2012 | CAGR | CAGR | CAGR |
|----------------------|---------------|---------------|---------------|---------------|---------------|--------------|--------------|--------------|
| | | | | | | 2004-2012 | 2004-2008 | 2008-2012 |
| Cereals | | | | | | | | |
| Belgium | -0,410 | -0,423 | -0,417 | -0,410 | -0,384 | -0,8% | 0,4% | -2,0% |
| Czech Republic | -0,228 | -0,174 | -0,135 | -0,141 | -0,113 | -8,4% | -12,2% | -4,4% |
| Denmark | 0,106 | 0,173 | 0,087 | 0,048 | -0,007 | #NUM! | -4,6% | #NUM! |
| Finland | 0,364 | 0,414 | 0,441 | 0,439 | 0,446 | 2,6% | 4,9% | 0,3% |
| France | -0,329 | -0,335 | -0,347 | -0,344 | -0,354 | 0,9% | 1,3% | 0,5% |
| Germany | -0,235 | -0,142 | -0,105 | -0,019 | -0,008 | -34,8% | -18,3% | -48,0% |
| Hungary | -0,291 | -0,344 | -0,308 | -0,335 | -0,346 | 2,2% | 1,5% | 2,9% |
| Italy | -0,505 | -0,551 | -0,574 | -0,553 | -0,568 | 1,5% | 3,2% | -0,3% |
| Netherlands | 0,437 | 0,425 | 0,316 | 0,233 | 0,340 | -3,1% | -7,7% | 1,8% |
| Poland | -0,760 | -0,691 | -0,539 | -0,499 | -0,435 | -6,7% | -8,2% | -5,3% |
| Portugal | -0,222 | -0,330 | -0,289 | -0,314 | -0,323 | 4,8% | 6,8% | 2,8% |
| Romania | 0,123 | 0,004 | -0,006 | -0,024 | 0,102 | -2,4% | #NUM! | #NUM! |
| Spain | -0,441 | -0,420 | -0,351 | -0,296 | -0,369 | -2,2% | -5,6% | 1,3% |
| United Kingdom | 0,048 | 0,086 | 0,103 | 0,132 | 0,153 | 15,5% | 20,8% | 10,5% |
| Average | -0,188 | -0,187 | -0,181 | -0,176 | -0,162 | -1,8% | -1,0% | -2,6% |



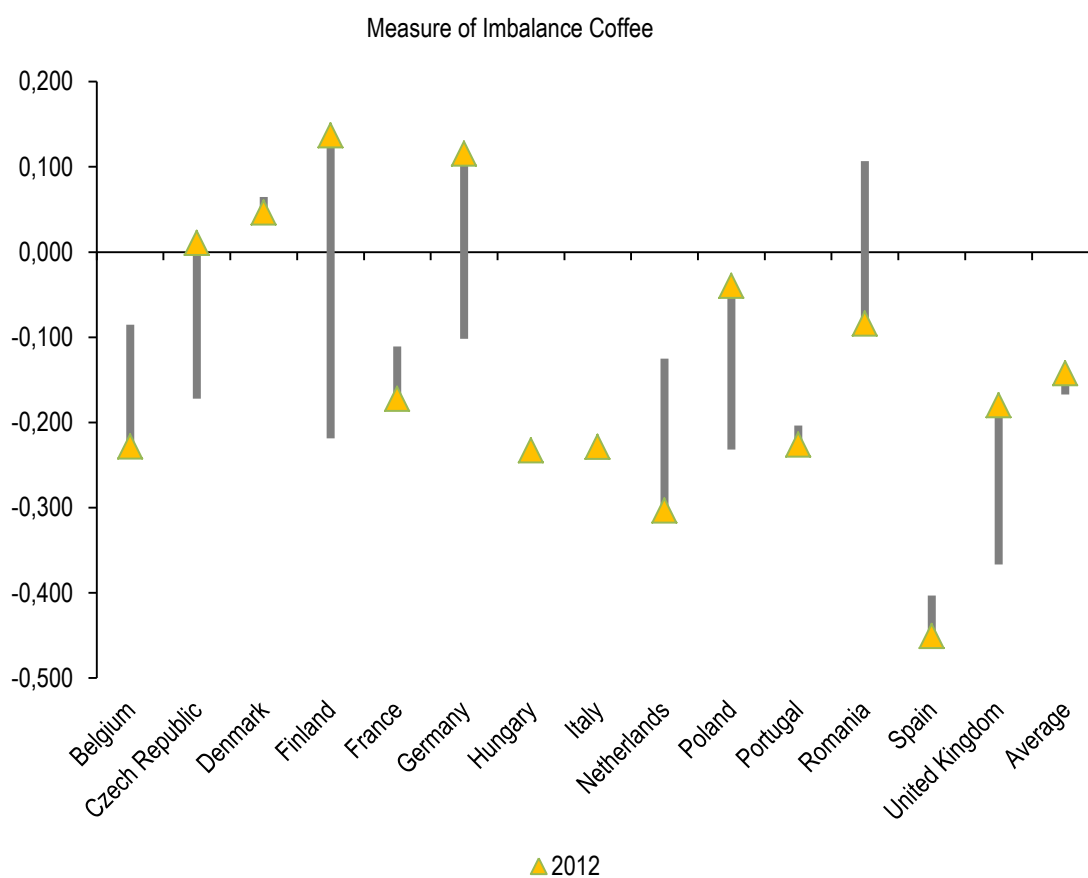
| Measure of imbalance | 2004 | 2006 | 2008 | 2010 | 2012 | CAGR | CAGR | CAGR |
|----------------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|-------------|
| | | | | | | 2004-2012 | 2004-2008 | 2008-2012 |
| Cheese | | | | | | | | |
| Belgium | 1,007 | 0,919 | 0,877 | 0,865 | 0,930 | -1,0% | -3,4% | 1,5% |
| Czech Republic | 0,182 | 0,243 | 0,295 | 0,281 | 0,287 | 5,8% | 12,9% | -0,7% |
| Denmark | -0,241 | -0,245 | -0,214 | -0,223 | -0,219 | -1,2% | -2,9% | 0,6% |
| Finland | -0,020 | 0,062 | 0,017 | 0,025 | 0,010 | #NUM! | #NUM! | -12,1% |
| France | 0,101 | 0,012 | -0,009 | -0,025 | -0,024 | #NUM! | #NUM! | 28,4% |
| Germany | 0,476 | 0,466 | 0,489 | 0,558 | 0,566 | 2,2% | 0,7% | 3,7% |
| Hungary | -0,061 | -0,161 | -0,109 | -0,138 | -0,143 | 11,2% | 15,5% | 7,0% |
| Italy | 0,996 | 0,798 | 0,809 | 0,810 | 0,755 | -3,4% | -5,1% | -1,7% |
| Netherlands | 0,878 | 0,834 | 0,524 | 0,524 | 0,598 | -4,7% | -12,1% | 3,4% |
| Poland | -0,073 | -0,003 | 0,112 | 0,107 | 0,161 | #NUM! | #NUM! | 9,6% |
| Portugal | 0,304 | 0,247 | 0,227 | 0,158 | 0,158 | -7,9% | -7,1% | -8,6% |
| Romania | 0,404 | 0,127 | 0,055 | 0,085 | 0,259 | -5,4% | -39,3% | 47,5% |
| Spain | 0,539 | 0,503 | 0,588 | 0,468 | 0,448 | -2,3% | 2,2% | -6,6% |
| United Kingdom | 0,939 | 0,929 | 0,913 | 0,861 | 0,871 | -0,9% | -0,7% | -1,2% |
| Average | 0,215 | 0,178 | 0,170 | 0,164 | 0,183 | -2,0% | -5,7% | 1,9% |



| Measure of imbalance | 2004 | 2006 | 2008 | 2010 | 2012 | CAGR 2004-2012 | CAGR 2004-2008 | CAGR 2008-2012 |
|----------------------|--------------|--------------|--------------|--------------|--------------|-------------------|-------------------|-------------------|
| Chocolate | | | | | | | | |
| Belgium | 0,029 | 0,030 | -0,035 | -0,023 | -0,031 | #NUM! | #NUM! | -2,8% |
| Czech Republic | -0,377 | -0,293 | -0,231 | -0,228 | -0,214 | -6,9% | -11,5% | -1,9% |
| Denmark | 0,201 | 0,217 | 0,199 | 0,198 | 0,159 | -2,9% | -0,2% | -5,4% |
| Finland | -0,013 | 0,098 | 0,092 | 0,088 | 0,115 | #NUM! | #NUM! | 5,6% |
| France | 0,265 | 0,244 | 0,222 | 0,190 | 0,148 | -7,0% | -4,4% | -9,6% |
| Germany | -0,020 | 0,014 | 0,022 | 0,104 | 0,114 | #NUM! | #NUM! | 50,4% |
| Hungary | -0,070 | -0,066 | -0,021 | -0,059 | -0,040 | -6,6% | -26,2% | 18,3% |
| Italy | -0,120 | -0,152 | -0,191 | -0,190 | -0,189 | 5,8% | 12,3% | -0,3% |
| Netherlands | 0,339 | 0,318 | 0,206 | 0,151 | 0,207 | -6,0% | -11,7% | 0,0% |
| Poland | -0,106 | -0,074 | 0,044 | 0,085 | 0,180 | #NUM! | #NUM! | 42,1% |
| Portugal | 0,144 | 0,187 | 0,241 | 0,210 | 0,220 | 5,4% | 13,7% | -2,2% |
| Romania | 0,107 | -0,022 | 0,007 | -0,018 | 0,051 | -8,9% | -49,4% | 64,1% |
| Spain | 0,012 | 0,024 | 0,092 | 0,065 | 0,052 | 20,1% | 66,6% | -13,4% |
| United Kingdom | -0,013 | -0,002 | 0,010 | -0,031 | -0,023 | 7,5% | #NUM! | #NUM! |
| Average | 0,030 | 0,044 | 0,042 | 0,034 | 0,050 | 6,6% | 9,2% | 4,1% |

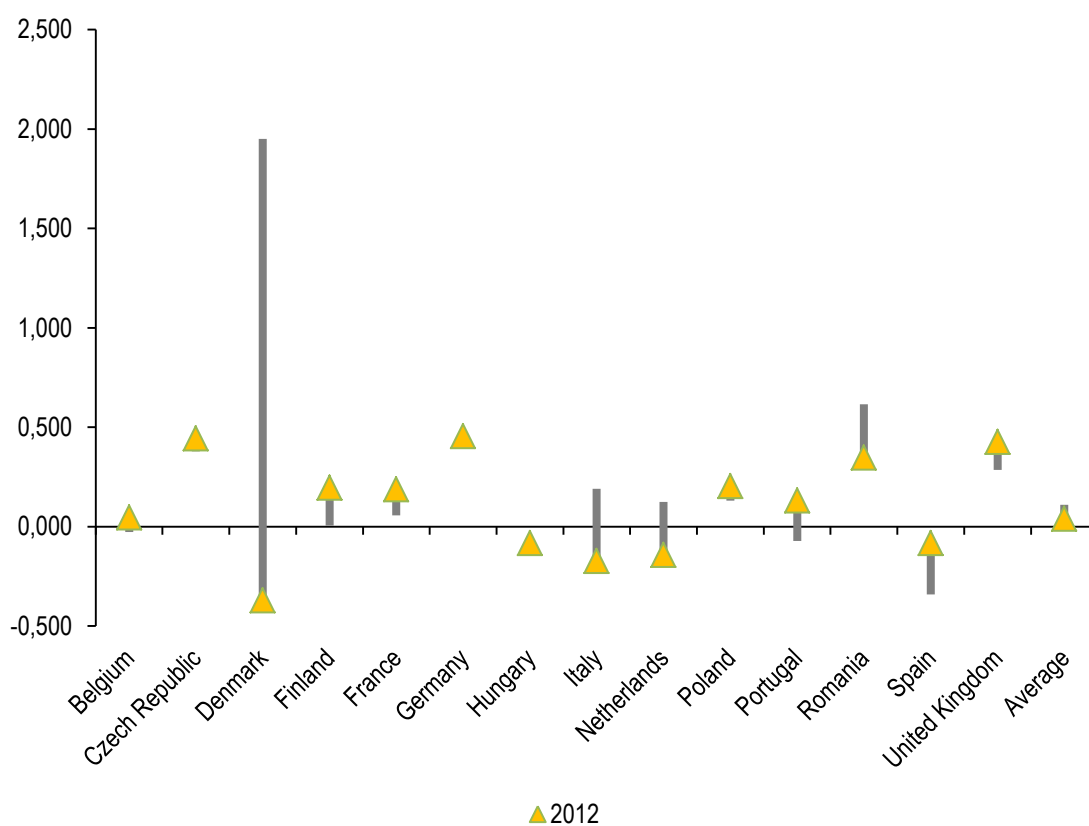


| Measure of imbalance | 2004 | 2006 | 2008 | 2010 | 2012 | CAGR 2004-2012 | CAGR 2004-2008 | CAGR 2008-2012 |
|----------------------|---------------|---------------|---------------|---------------|---------------|-------------------|-------------------|-------------------|
| Coffee | | | | | | | | |
| Belgium | -0,085 | -0,095 | -0,173 | -0,211 | -0,228 | 13,1% | 19,4% | 7,2% |
| Czech Republic | -0,172 | -0,089 | 0,011 | -0,013 | 0,010 | #NUM! | #NUM! | -0,8% |
| Denmark | 0,064 | 0,060 | 0,058 | 0,045 | 0,046 | -4,1% | -2,7% | -5,5% |
| Finland | -0,219 | -0,111 | -0,119 | -0,109 | 0,137 | #NUM! | -14,2% | #NUM! |
| France | -0,111 | -0,120 | -0,139 | -0,143 | -0,173 | 5,7% | 5,9% | 5,5% |
| Germany | -0,102 | -0,031 | -0,019 | 0,082 | 0,115 | #NUM! | -33,9% | #NUM! |
| Hungary | -0,231 | -0,214 | -0,193 | -0,232 | -0,233 | 0,1% | -4,4% | 4,8% |
| Italy | -0,230 | -0,266 | -0,279 | -0,272 | -0,229 | -0,1% | 5,0% | -4,9% |
| Netherlands | -0,125 | -0,135 | -0,302 | -0,394 | -0,304 | 11,7% | 24,6% | 0,1% |
| Poland | -0,232 | -0,231 | -0,119 | -0,096 | -0,040 | -19,8% | -15,3% | -24,0% |
| Portugal | -0,204 | -0,240 | -0,215 | -0,178 | -0,226 | 1,3% | 1,4% | 1,3% |
| Romania | 0,107 | -0,020 | -0,185 | -0,233 | -0,084 | #NUM! | #NUM! | -17,8% |
| Spain | -0,403 | -0,415 | -0,379 | -0,418 | -0,451 | 1,4% | -1,6% | 4,5% |
| United Kingdom | -0,367 | -0,339 | -0,300 | -0,249 | -0,180 | -8,5% | -4,9% | -12,0% |
| Average | -0,167 | -0,162 | -0,179 | -0,188 | -0,143 | -2,0% | 1,7% | -5,5% |

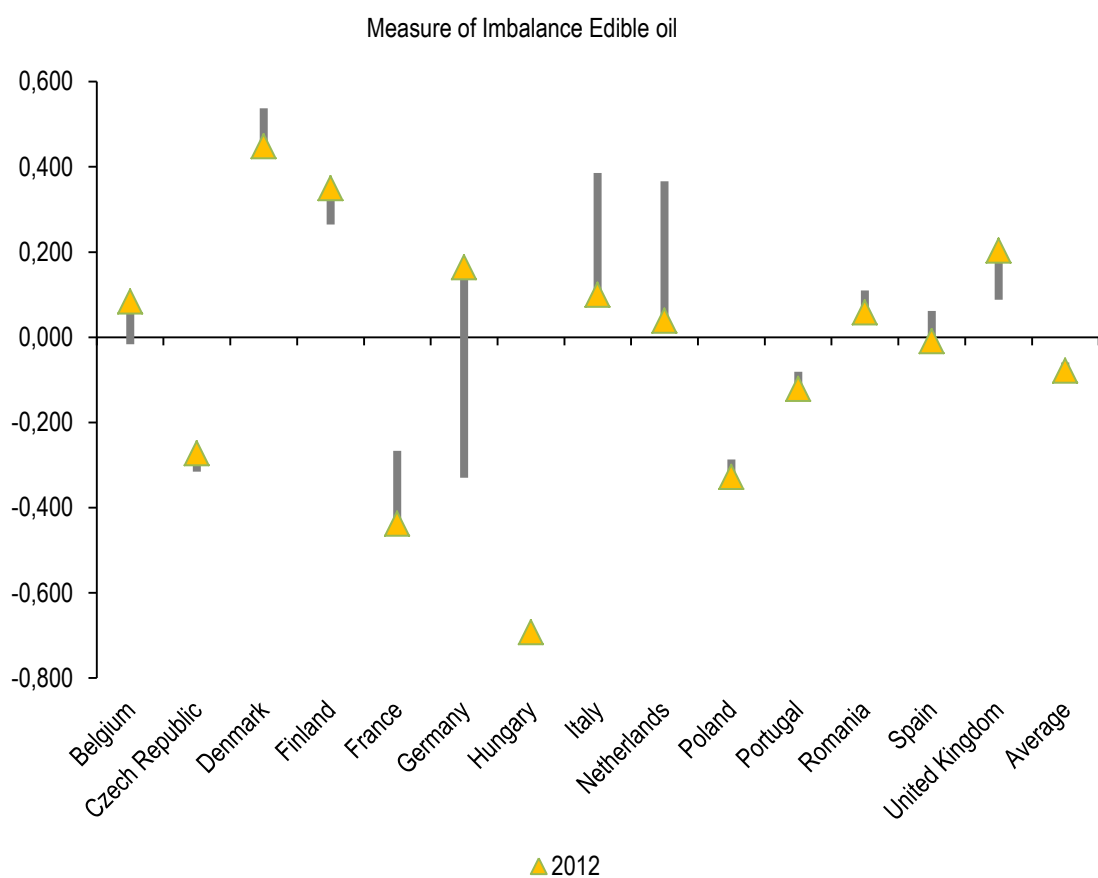


| Measure of imbalance | 2004 | 2006 | 2008 | 2010 | 2012 | CAGR | CAGR | CAGR |
|----------------------|--------------|--------------|--------------|--------------|--------------|---------------|---------------|--------------|
| | | | | | | 2004-2012 | 2004-2008 | 2008-2012 |
| Desserts | | | | | | | | |
| Belgium | -0,028 | 0,027 | 0,015 | 0,035 | 0,045 | #NUM! | #NUM! | 30,5% |
| Czech Republic | 0,379 | 0,408 | 0,491 | 0,478 | 0,444 | 2,0% | 6,7% | -2,5% |
| Denmark | 1,950 | 1,768 | -0,336 | -0,328 | -0,372 | #NUM! | #NUM! | 2,5% |
| Finland | 0,006 | 0,160 | 0,163 | 0,220 | 0,196 | 55,4% | 130,8% | 4,6% |
| France | 0,056 | 0,117 | 0,158 | 0,202 | 0,187 | 16,2% | 29,4% | 4,3% |
| Germany | 0,409 | 0,355 | 0,316 | 0,394 | 0,454 | 1,3% | -6,2% | 9,5% |
| Hungary | -0,123 | -0,149 | -0,050 | -0,096 | -0,084 | -4,7% | -20,1% | 13,7% |
| Italy | 0,190 | 0,089 | -0,043 | -0,088 | -0,174 | #NUM! | #NUM! | 42,0% |
| Netherlands | 0,124 | 0,170 | -0,175 | -0,238 | -0,142 | #NUM! | #NUM! | -5,0% |
| Poland | 0,131 | 0,144 | 0,180 | 0,198 | 0,203 | 5,6% | 8,2% | 3,1% |
| Portugal | -0,073 | 0,097 | 0,137 | 0,158 | 0,131 | #NUM! | #NUM! | -1,1% |
| Romania | 0,615 | 0,239 | 0,130 | 0,171 | 0,347 | -6,9% | -32,2% | 27,8% |
| Spain | -0,342 | -0,215 | -0,106 | -0,068 | -0,083 | -16,2% | -25,4% | -5,9% |
| United Kingdom | 0,285 | 0,315 | 0,350 | 0,389 | 0,425 | 5,1% | 5,3% | 5,0% |
| Average | 0,109 | 0,155 | 0,018 | 0,033 | 0,038 | -12,2% | -36,2% | 20,8% |

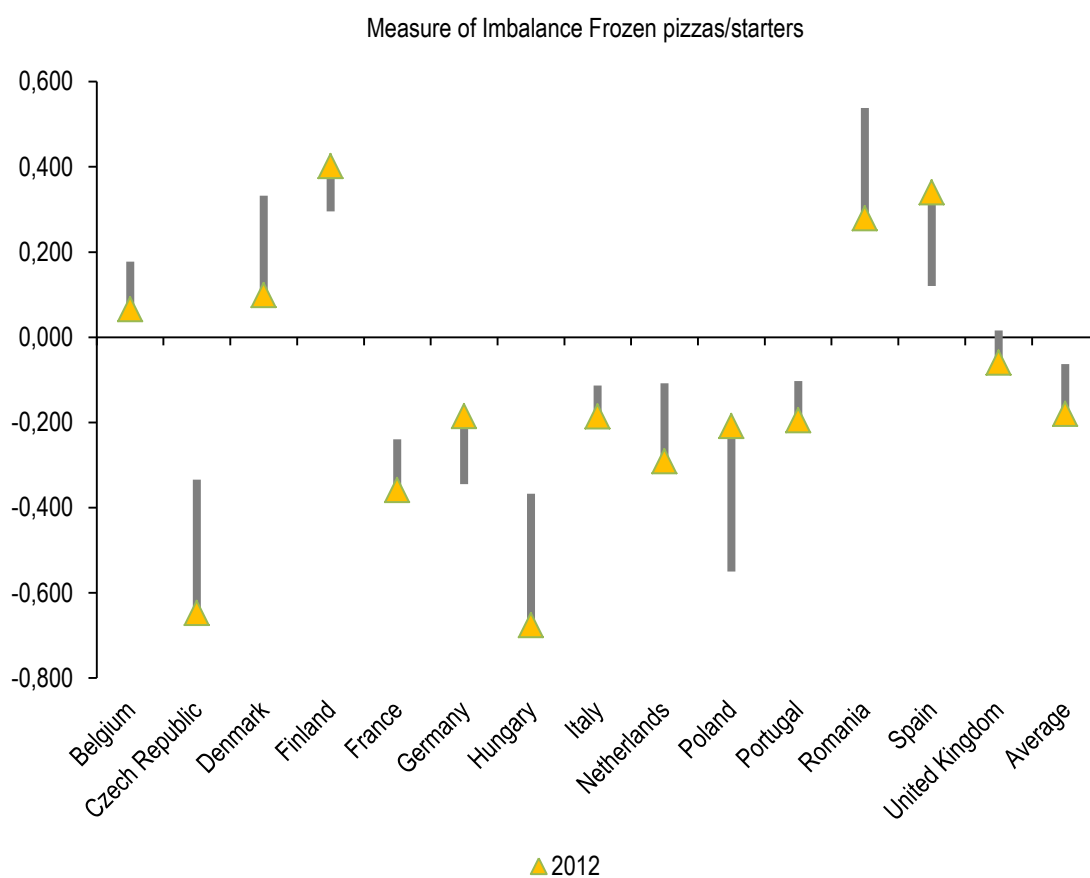
Measure of Imbalance Desserts



| Measure of imbalance | 2004 | 2006 | 2008 | 2010 | 2012 | CAGR | CAGR | CAGR |
|----------------------|---------------|---------------|---------------|---------------|---------------|-------------|-------------|--------------|
| | | | | | | 2004-2012 | 2004-2008 | 2008-2012 |
| Edible oil | | | | | | | | |
| Belgium | -0,017 | -0,003 | 0,093 | 0,079 | 0,084 | #NUM! | #NUM! | -2,5% |
| Czech Republic | -0,315 | -0,308 | -0,254 | -0,250 | -0,273 | -1,8% | -5,3% | 1,8% |
| Denmark | 0,538 | 0,508 | 0,500 | 0,494 | 0,448 | -2,2% | -1,8% | -2,7% |
| Finland | 0,265 | 0,396 | 0,361 | 0,361 | 0,350 | 3,5% | 8,1% | -0,8% |
| France | -0,266 | -0,374 | -0,405 | -0,467 | -0,438 | 6,4% | 11,0% | 2,0% |
| Germany | -0,330 | -0,033 | 0,112 | 0,132 | 0,164 | #NUM! | #NUM! | 9,8% |
| Hungary | -0,704 | -0,773 | -0,700 | -0,685 | -0,693 | -0,2% | -0,1% | -0,3% |
| Italy | 0,386 | 0,354 | 0,107 | 0,150 | 0,099 | -15,6% | -27,4% | -1,9% |
| Netherlands | 0,366 | 0,275 | 0,074 | 0,002 | 0,039 | -24,5% | -32,9% | -15,0% |
| Poland | -0,287 | -0,217 | -0,362 | -0,381 | -0,328 | 1,7% | 6,0% | -2,4% |
| Portugal | -0,081 | -0,086 | -0,072 | -0,133 | -0,121 | 5,2% | -3,0% | 14,2% |
| Romania | 0,110 | 0,006 | -0,157 | -0,074 | 0,058 | -7,6% | #NUM! | #NUM! |
| Spain | 0,062 | 0,036 | 0,076 | 0,068 | -0,009 | #NUM! | 5,2% | #NUM! |
| United Kingdom | 0,088 | 0,129 | 0,181 | 0,262 | 0,203 | 11,1% | 19,9% | 2,9% |
| Average | -0,059 | -0,066 | -0,084 | -0,086 | -0,079 | 3,7% | 9,2% | -1,6% |

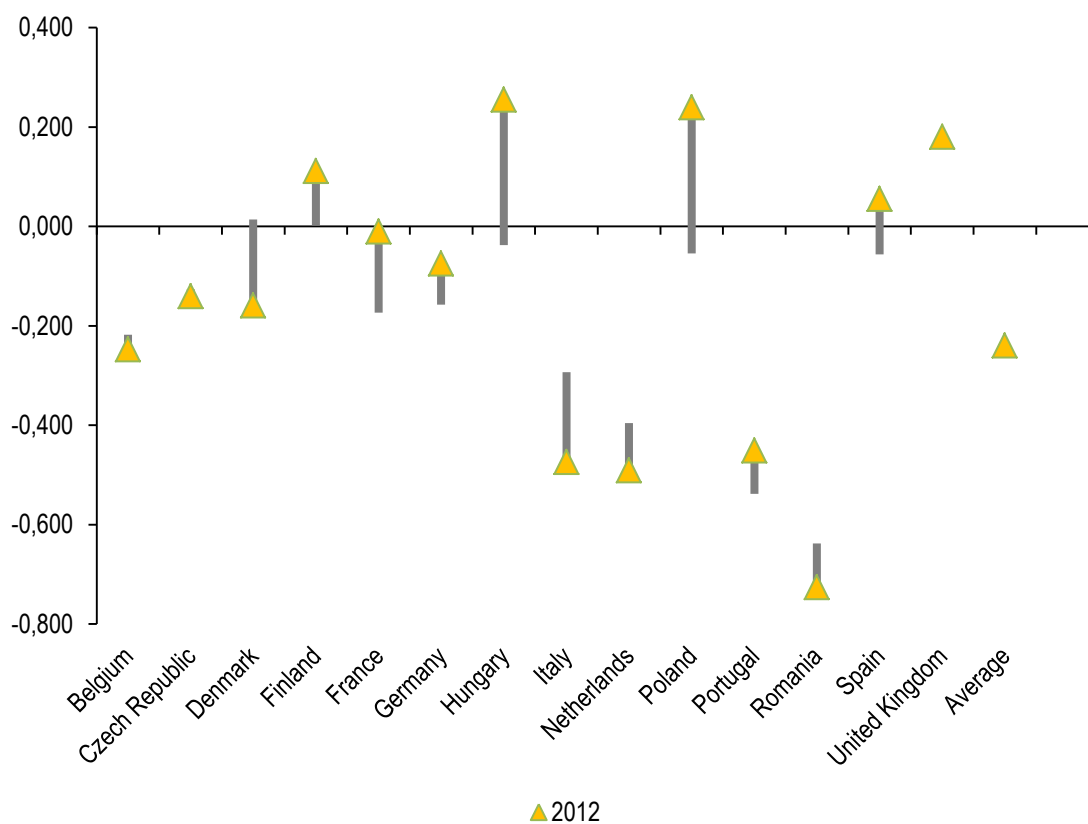


| Measure of imbalance | 2004 | 2006 | 2008 | 2010 | 2012 | CAGR 2004-2012 | CAGR 2004-2008 | CAGR 2008-2012 |
|-------------------------------|---------------|---------------|---------------|---------------|---------------|-------------------|-------------------|-------------------|
| Frozen pizzas/starters | | | | | | | | |
| Belgium | 0,177 | 0,061 | 0,126 | 0,046 | 0,065 | -11,7% | -8,1% | -15,2% |
| Czech Republic | -0,334 | -0,456 | -0,714 | -0,699 | -0,648 | 8,6% | 20,9% | -2,4% |
| Denmark | 0,333 | 0,268 | 0,219 | 0,148 | 0,099 | -14,1% | -10,0% | -18,0% |
| Finland | 0,296 | 0,393 | 0,384 | 0,381 | 0,402 | 3,9% | 6,7% | 1,2% |
| France | -0,240 | -0,225 | -0,244 | -0,302 | -0,359 | 5,2% | 0,5% | 10,1% |
| Germany | -0,344 | -0,255 | -0,241 | -0,188 | -0,185 | -7,5% | -8,6% | -6,4% |
| Hungary | -0,367 | -0,370 | -0,594 | -0,695 | -0,676 | 7,9% | 12,8% | 3,3% |
| Italy | -0,113 | -0,168 | -0,190 | -0,195 | -0,186 | 6,5% | 13,8% | -0,4% |
| Netherlands | -0,108 | -0,214 | -0,374 | -0,398 | -0,292 | 13,2% | 36,5% | -6,0% |
| Poland | -0,550 | -0,474 | -0,339 | -0,288 | -0,209 | -11,4% | -11,4% | -11,5% |
| Portugal | -0,103 | -0,072 | -0,215 | -0,204 | -0,195 | 8,4% | 20,2% | -2,3% |
| Romania | 0,539 | 0,433 | 0,405 | 0,283 | 0,279 | -7,9% | -6,9% | -8,9% |
| Spain | 0,120 | 0,208 | 0,292 | 0,358 | 0,340 | 13,8% | 24,8% | 3,9% |
| United Kingdom | 0,016 | -0,006 | 0,032 | -0,043 | -0,060 | #NUM! | 18,8% | #NUM! |
| Average | -0,063 | -0,089 | -0,189 | -0,205 | -0,180 | 14,1% | 31,9% | -1,3% |



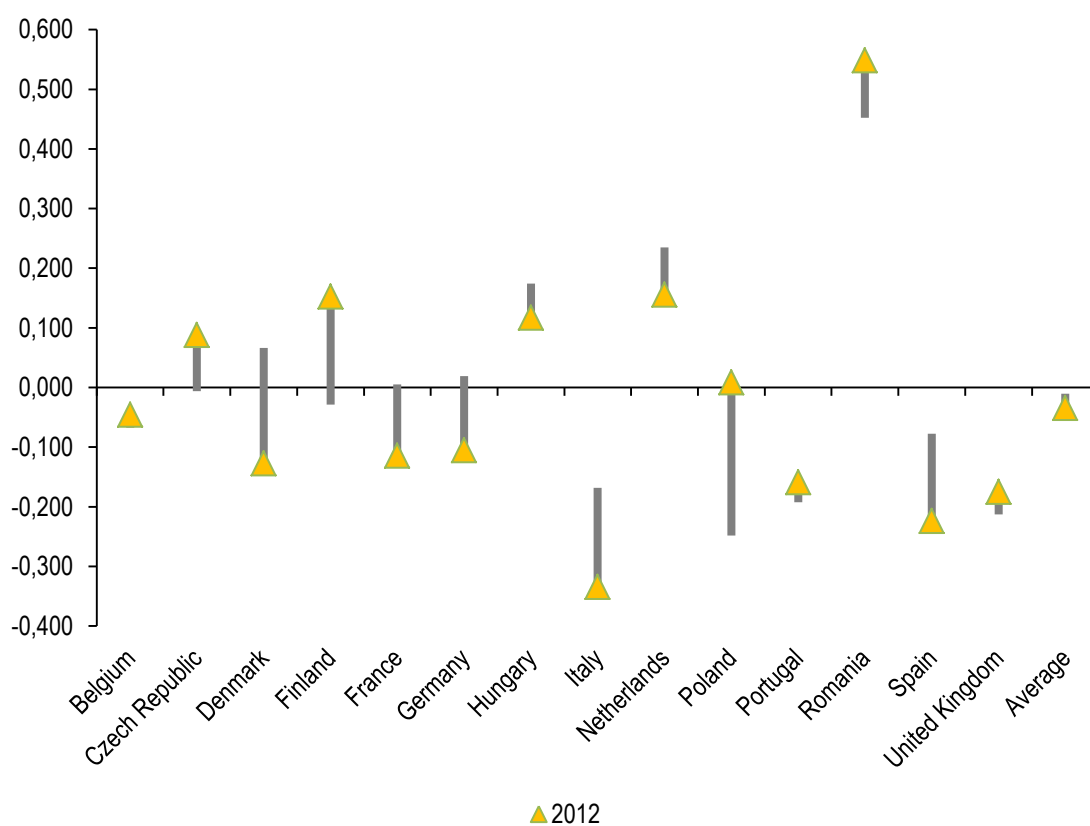
| Measure of imbalance | 2004 | 2006 | 2008 | 2010 | 2012 | CAGR | CAGR | CAGR |
|----------------------------------|---------------|---------------|---------------|---------------|---------------|--------------|--------------|--------------|
| | | | | | | 2004-2012 | 2004-2008 | 2008-2012 |
| Frozen ready cooked meals | | | | | | | | |
| Belgium | -0,218 | -0,285 | -0,326 | -0,328 | -0,247 | 1,6% | 10,6% | -6,7% |
| Czech Republic | -0,126 | -0,119 | -0,017 | -0,062 | -0,141 | 1,3% | -39,1% | 68,5% |
| Denmark | 0,014 | 0,028 | -0,009 | -0,127 | -0,159 | #NUM! | #NUM! | 102,7% |
| Finland | 0,002 | 0,114 | 0,107 | 0,110 | 0,112 | 60,9% | 156,5% | 0,9% |
| France | -0,174 | -0,039 | 0,012 | -0,002 | -0,010 | -29,6% | #NUM! | #NUM! |
| Germany | -0,157 | -0,109 | -0,200 | -0,247 | -0,075 | -8,9% | 6,2% | -21,8% |
| Hungary | -0,038 | -0,033 | 0,055 | -0,056 | 0,255 | #NUM! | #NUM! | 46,8% |
| Italy | -0,293 | -0,313 | -0,329 | -0,348 | -0,474 | 6,2% | 2,9% | 9,6% |
| Netherlands | -0,396 | -0,463 | -0,586 | -0,606 | -0,491 | 2,7% | 10,3% | -4,3% |
| Poland | -0,054 | -0,024 | 0,109 | 0,165 | 0,239 | #NUM! | #NUM! | 21,6% |
| Portugal | -0,538 | -0,498 | -0,453 | -0,433 | -0,451 | -2,2% | -4,2% | -0,1% |
| Romania | -0,638 | -0,804 | -0,856 | -0,866 | -0,726 | 1,6% | 7,6% | -4,0% |
| Spain | -0,056 | -0,073 | 0,047 | 0,077 | 0,055 | #NUM! | #NUM! | 4,4% |
| United Kingdom | 0,155 | 0,160 | 0,233 | 0,191 | 0,180 | 1,9% | 10,7% | -6,3% |
| Average | -0,261 | -0,259 | -0,259 | -0,270 | -0,240 | -1,1% | -0,2% | -1,9% |

Measure of Imbalance Frozen ready cooked meals



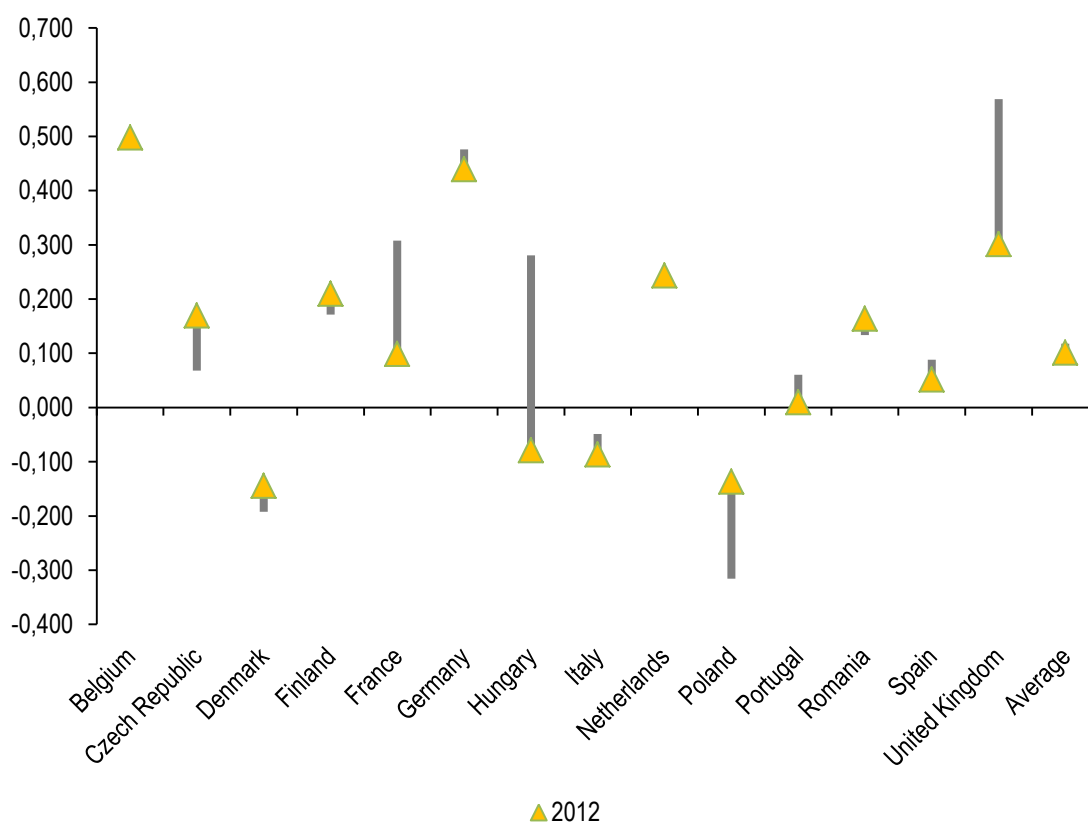
| Measure of imbalance | 2004 | 2006 | 2008 | 2010 | 2012 | CAGR 2004-2012 | CAGR 2004-2008 | CAGR 2008-2012 |
|--------------------------|---------------|---------------|---------------|---------------|---------------|-------------------|-------------------|-------------------|
| Frozen vegetables | | | | | | | | |
| Belgium | -0,068 | -0,088 | -0,096 | -0,093 | -0,046 | -4,7% | 9,3% | -16,8% |
| Czech Republic | -0,006 | 0,005 | 0,075 | 0,068 | 0,088 | #NUM! | #NUM! | 4,0% |
| Denmark | 0,067 | 0,036 | 0,024 | 0,005 | -0,127 | #NUM! | -22,2% | #NUM! |
| Finland | -0,029 | 0,061 | 0,041 | 0,146 | 0,152 | #NUM! | #NUM! | 38,5% |
| France | 0,005 | -0,004 | -0,010 | -0,076 | -0,114 | #NUM! | #NUM! | 85,1% |
| Germany | 0,019 | 0,057 | -0,140 | -0,125 | -0,106 | #NUM! | #NUM! | -6,9% |
| Hungary | 0,174 | 0,041 | 0,127 | 0,085 | 0,117 | -4,9% | -7,6% | -2,1% |
| Italy | -0,168 | -0,194 | -0,227 | -0,293 | -0,334 | 9,0% | 7,8% | 10,2% |
| Netherlands | 0,235 | 0,236 | 0,133 | 0,109 | 0,155 | -5,0% | -13,3% | 4,0% |
| Poland | -0,248 | -0,236 | -0,109 | -0,050 | 0,009 | #NUM! | -18,6% | #NUM! |
| Portugal | -0,193 | -0,231 | -0,164 | -0,176 | -0,159 | -2,3% | -4,0% | -0,7% |
| Romania | 0,452 | 0,307 | 0,407 | 0,398 | 0,548 | 2,4% | -2,6% | 7,7% |
| Spain | -0,077 | -0,077 | -0,026 | 0,002 | -0,224 | 14,2% | -23,7% | 71,0% |
| United Kingdom | -0,213 | -0,232 | -0,198 | -0,168 | -0,175 | -2,4% | -1,8% | -3,0% |
| Average | -0,010 | -0,025 | -0,027 | -0,025 | -0,035 | 16,6% | 27,9% | 6,2% |

Measure of Imbalance Frozen vegetables

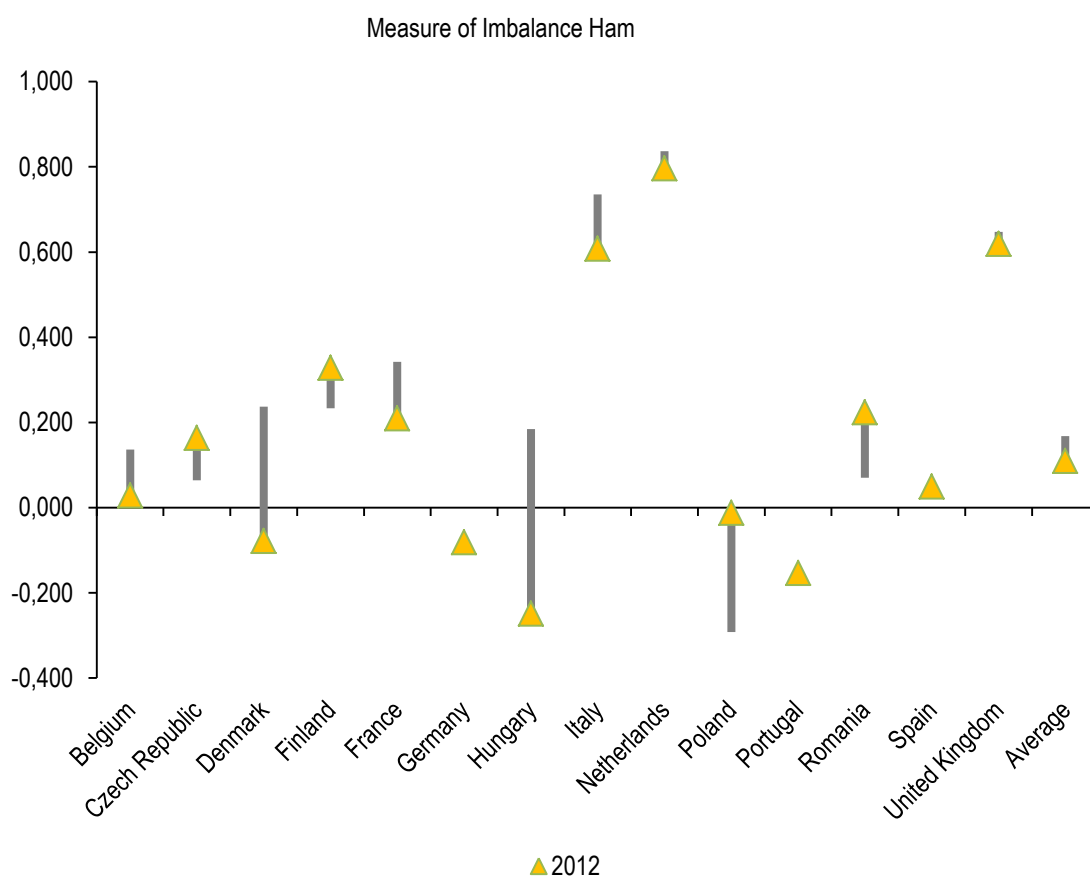


| Measure of imbalance | 2004 | 2006 | 2008 | 2010 | 2012 | CAGR | CAGR | CAGR |
|----------------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|-------------|
| | | | | | | 2004-2012 | 2004-2008 | 2008-2012 |
| Fruit Juices | | | | | | | | |
| Belgium | 0,503 | 0,480 | 0,462 | 0,463 | 0,498 | -0,1% | -2,1% | 1,9% |
| Czech Republic | 0,068 | 0,134 | 0,180 | 0,153 | 0,170 | 12,2% | 27,7% | -1,5% |
| Denmark | -0,192 | -0,139 | -0,164 | -0,154 | -0,145 | -3,5% | -3,9% | -3,1% |
| Finland | 0,172 | 0,253 | 0,248 | 0,187 | 0,210 | 2,6% | 9,7% | -4,1% |
| France | 0,308 | 0,229 | 0,193 | 0,159 | 0,099 | -13,3% | -11,1% | -15,4% |
| Germany | 0,476 | 0,465 | 0,399 | 0,429 | 0,440 | -1,0% | -4,4% | 2,5% |
| Hungary | 0,280 | 0,169 | 0,007 | -0,068 | -0,079 | #NUM! | -60,3% | #NUM! |
| Italy | -0,049 | -0,092 | -0,110 | -0,107 | -0,087 | 7,4% | 22,6% | -5,9% |
| Netherlands | 0,226 | 0,253 | 0,222 | 0,134 | 0,243 | 0,9% | -0,4% | 2,3% |
| Poland | -0,316 | -0,425 | -0,306 | -0,299 | -0,137 | -9,9% | -0,8% | -18,2% |
| Portugal | 0,061 | 0,034 | 0,143 | -0,020 | 0,010 | -20,3% | 23,9% | -48,7% |
| Romania | 0,134 | -0,001 | 0,021 | -0,012 | 0,164 | 2,6% | -36,9% | 66,8% |
| Spain | 0,088 | 0,108 | 0,188 | 0,100 | 0,052 | -6,4% | 20,9% | -27,6% |
| United Kingdom | 0,569 | 0,467 | 0,359 | 0,310 | 0,301 | -7,6% | -10,9% | -4,3% |
| Average | 0,118 | 0,104 | 0,100 | 0,063 | 0,101 | -1,9% | -4,1% | 0,3% |

Measure of Imbalance Fruit Juices

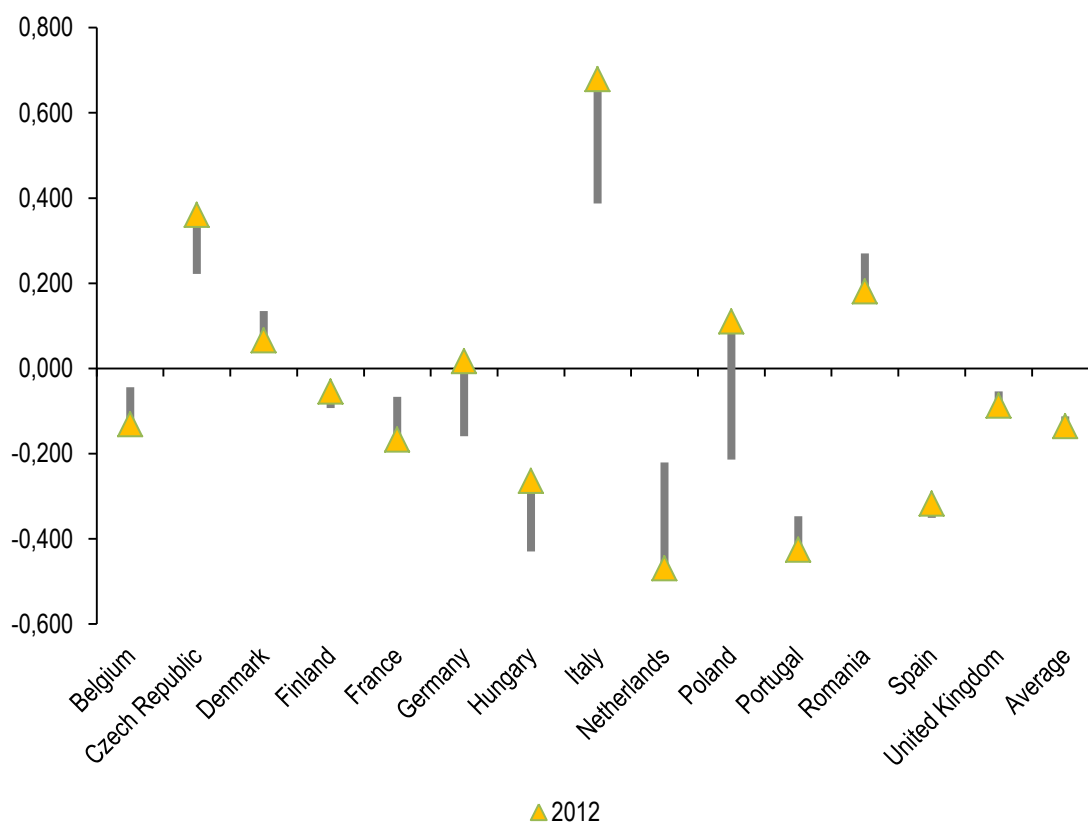


| Measure of imbalance | 2004 | 2006 | 2008 | 2010 | 2012 | CAGR | CAGR | CAGR |
|----------------------|--------------|--------------|--------------|--------------|--------------|--------------|---------------|-------------|
| | | | | | | 2004-2012 | 2004-2008 | 2008-2012 |
| Ham | | | | | | | | |
| Belgium | 0,137 | 0,038 | -0,047 | -0,034 | 0,028 | -18,0% | #NUM! | #NUM! |
| Czech Republic | 0,064 | 0,076 | 0,106 | 0,125 | 0,163 | 12,3% | 13,4% | 11,3% |
| Denmark | 0,237 | 0,038 | 0,012 | -0,007 | -0,078 | #NUM! | -52,4% | #NUM! |
| Finland | 0,234 | 0,338 | 0,343 | 0,336 | 0,328 | 4,3% | 10,1% | -1,1% |
| France | 0,342 | 0,279 | 0,324 | 0,163 | 0,209 | -6,0% | -1,3% | -10,4% |
| Germany | -0,093 | -0,008 | -0,014 | -0,049 | -0,081 | -1,6% | -37,4% | 54,5% |
| Hungary | 0,184 | -0,176 | -0,231 | -0,297 | -0,249 | #NUM! | #NUM! | 1,9% |
| Italy | 0,736 | 0,708 | 0,723 | 0,656 | 0,608 | -2,4% | -0,4% | -4,2% |
| Netherlands | 0,837 | 0,820 | 0,754 | 0,530 | 0,796 | -0,6% | -2,6% | 1,4% |
| Poland | -0,292 | -0,239 | -0,123 | -0,074 | -0,012 | -32,6% | -19,3% | -43,6% |
| Portugal | -0,150 | -0,206 | -0,212 | -0,160 | -0,154 | 0,3% | 9,1% | -7,8% |
| Romania | 0,070 | -0,127 | 0,006 | 0,066 | 0,223 | 15,6% | -45,9% | 147,2% |
| Spain | 0,041 | -0,009 | 0,186 | 0,233 | 0,050 | 2,5% | 46,1% | -28,1% |
| United Kingdom | 0,648 | 0,690 | 0,680 | 0,651 | 0,619 | -0,6% | 1,2% | -2,3% |
| Average | 0,168 | 0,102 | 0,104 | 0,094 | 0,109 | -5,2% | -11,4% | 1,4% |

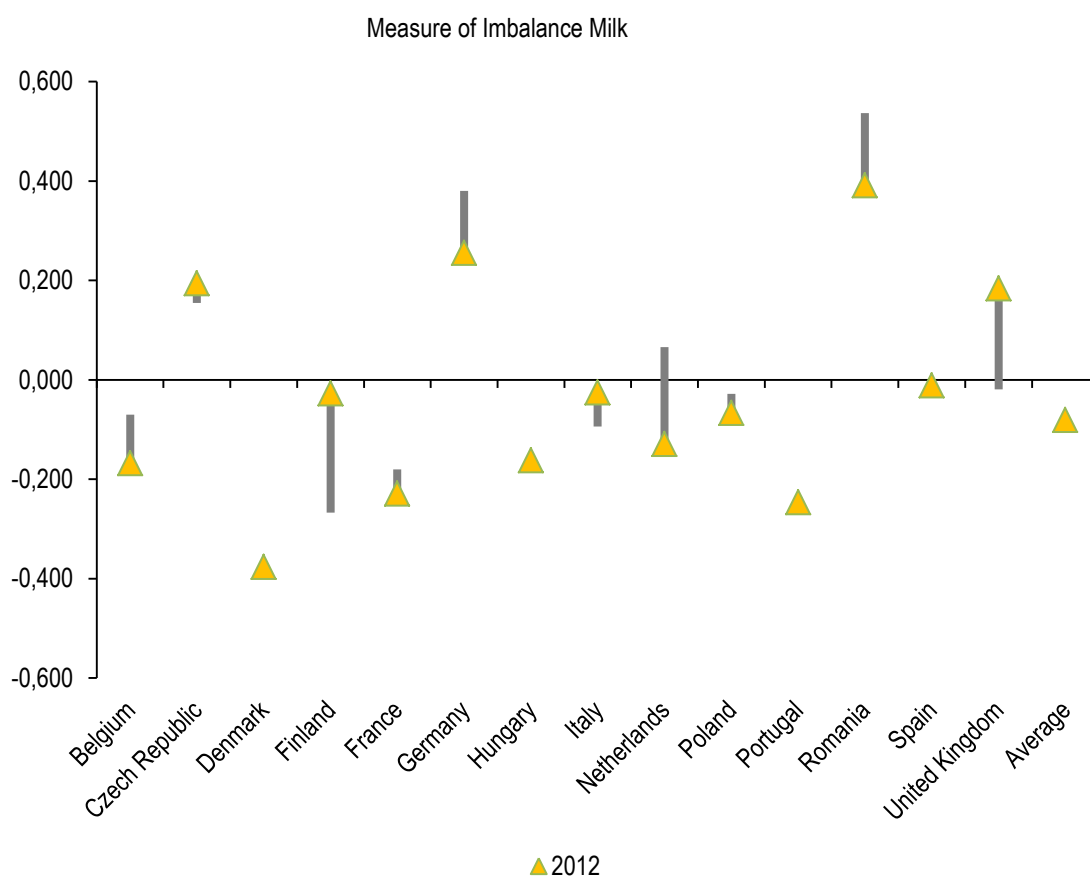


| Measure of imbalance | 2004 | 2006 | 2008 | 2010 | 2012 | CAGR | CAGR | CAGR |
|----------------------|---------------|---------------|---------------|---------------|---------------|-------------|--------------|-------------|
| | | | | | | 2004-2012 | 2004-2008 | 2008-2012 |
| Ice Cream | | | | | | | | |
| Belgium | -0,044 | -0,085 | -0,129 | -0,163 | -0,132 | 14,7% | 30,9% | 0,5% |
| Czech Republic | 0,222 | 0,311 | 0,339 | 0,340 | 0,360 | 6,2% | 11,2% | 1,5% |
| Denmark | 0,135 | 0,154 | 0,159 | 0,061 | 0,066 | -8,6% | 4,2% | -19,8% |
| Finland | -0,093 | 0,009 | 0,015 | 0,038 | -0,054 | -6,5% | #NUM! | #NUM! |
| France | -0,067 | -0,050 | -0,084 | -0,126 | -0,168 | 12,2% | 6,0% | 18,7% |
| Germany | -0,159 | -0,103 | -0,089 | 0,008 | 0,017 | #NUM! | -13,5% | #NUM! |
| Hungary | -0,430 | -0,381 | -0,223 | -0,260 | -0,264 | -5,9% | -15,1% | 4,4% |
| Italy | 0,387 | 0,454 | 0,492 | 0,604 | 0,679 | 7,3% | 6,2% | 8,4% |
| Netherlands | -0,221 | -0,251 | -0,380 | -0,535 | -0,470 | 9,9% | 14,5% | 5,5% |
| Poland | -0,214 | -0,137 | -0,034 | 0,025 | 0,110 | #NUM! | -36,7% | #NUM! |
| Portugal | -0,347 | -0,396 | -0,411 | -0,431 | -0,426 | 2,6% | 4,3% | 0,9% |
| Romania | 0,270 | 0,036 | 0,041 | 0,038 | 0,180 | -4,9% | -37,5% | 44,6% |
| Spain | -0,351 | -0,329 | -0,260 | -0,278 | -0,318 | -1,2% | -7,2% | 5,2% |
| United Kingdom | -0,054 | -0,046 | -0,020 | -0,048 | -0,088 | 6,4% | -21,6% | 44,3% |
| Average | -0,112 | -0,109 | -0,107 | -0,139 | -0,136 | 2,4% | -1,2% | 6,1% |

Measure of Imbalance Ice Cream

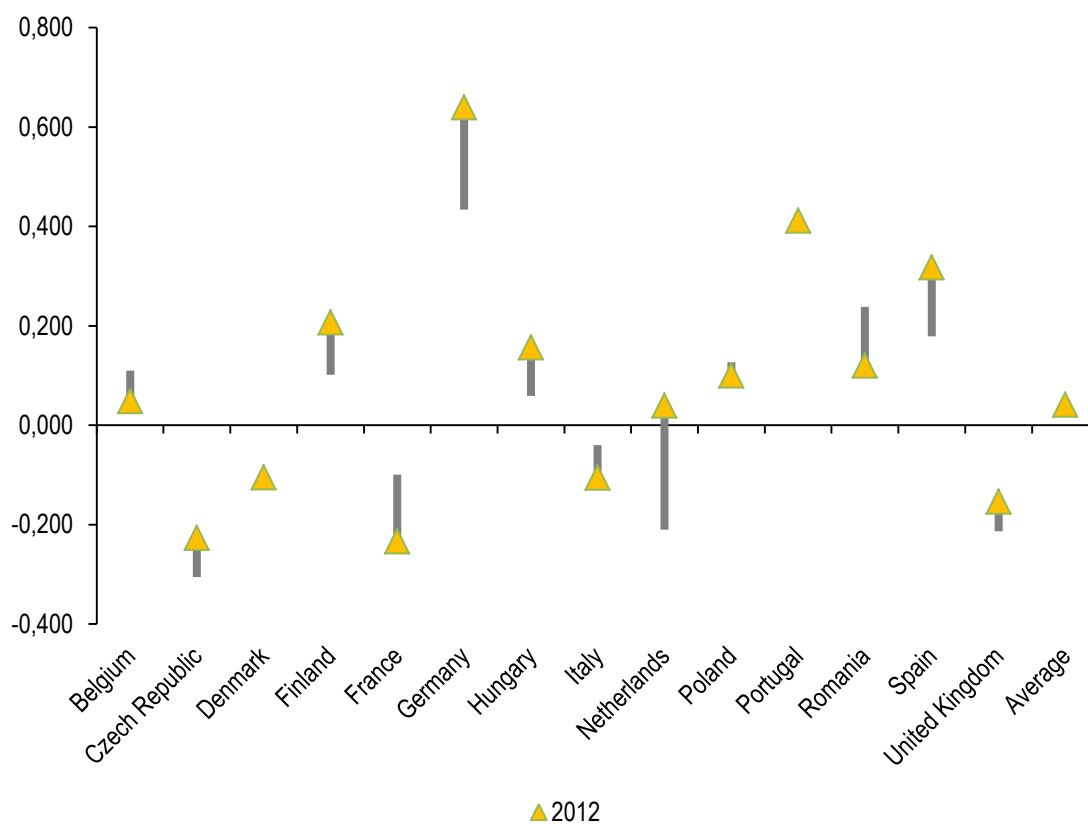


| Measure of imbalance | 2004 | 2006 | 2008 | 2010 | 2012 | CAGR | CAGR | CAGR |
|----------------------|---------------|---------------|---------------|---------------|---------------|--------------|-------------|--------------|
| | | | | | | 2004-2012 | 2004-2008 | 2008-2012 |
| Milk | | | | | | | | |
| Belgium | -0,070 | -0,056 | -0,219 | -0,184 | -0,168 | 11,5% | 32,9% | -6,4% |
| Czech Republic | 0,155 | 0,180 | 0,230 | 0,252 | 0,194 | 2,8% | 10,3% | -4,2% |
| Denmark | -0,400 | -0,324 | -0,385 | -0,382 | -0,377 | -0,7% | -1,0% | -0,5% |
| Finland | -0,267 | -0,120 | -0,073 | -0,047 | -0,027 | -24,7% | -27,7% | -21,7% |
| France | -0,180 | -0,197 | -0,191 | -0,254 | -0,229 | 3,1% | 1,5% | 4,6% |
| Germany | 0,380 | 0,353 | 0,280 | 0,333 | 0,255 | -4,9% | -7,4% | -2,3% |
| Hungary | -0,180 | -0,336 | -0,208 | -0,166 | -0,162 | -1,4% | 3,6% | -6,1% |
| Italy | -0,094 | -0,145 | -0,072 | -0,034 | -0,025 | -15,1% | -6,6% | -22,9% |
| Netherlands | 0,066 | 0,070 | -0,304 | -0,202 | -0,129 | #NUM! | #NUM! | -19,3% |
| Poland | -0,028 | -0,075 | -0,120 | -0,142 | -0,067 | 11,5% | 43,8% | -13,5% |
| Portugal | -0,236 | -0,202 | -0,124 | -0,076 | -0,247 | 0,6% | -14,8% | 18,7% |
| Romania | 0,537 | 0,208 | 0,152 | 0,247 | 0,391 | -3,9% | -27,1% | 26,7% |
| Spain | -0,035 | -0,013 | 0,106 | -0,003 | -0,012 | -13,1% | #NUM! | #NUM! |
| United Kingdom | -0,019 | 0,023 | 0,098 | 0,154 | 0,183 | #NUM! | #NUM! | 17,1% |
| Average | -0,103 | -0,092 | -0,121 | -0,092 | -0,081 | -2,9% | 4,2% | -9,6% |



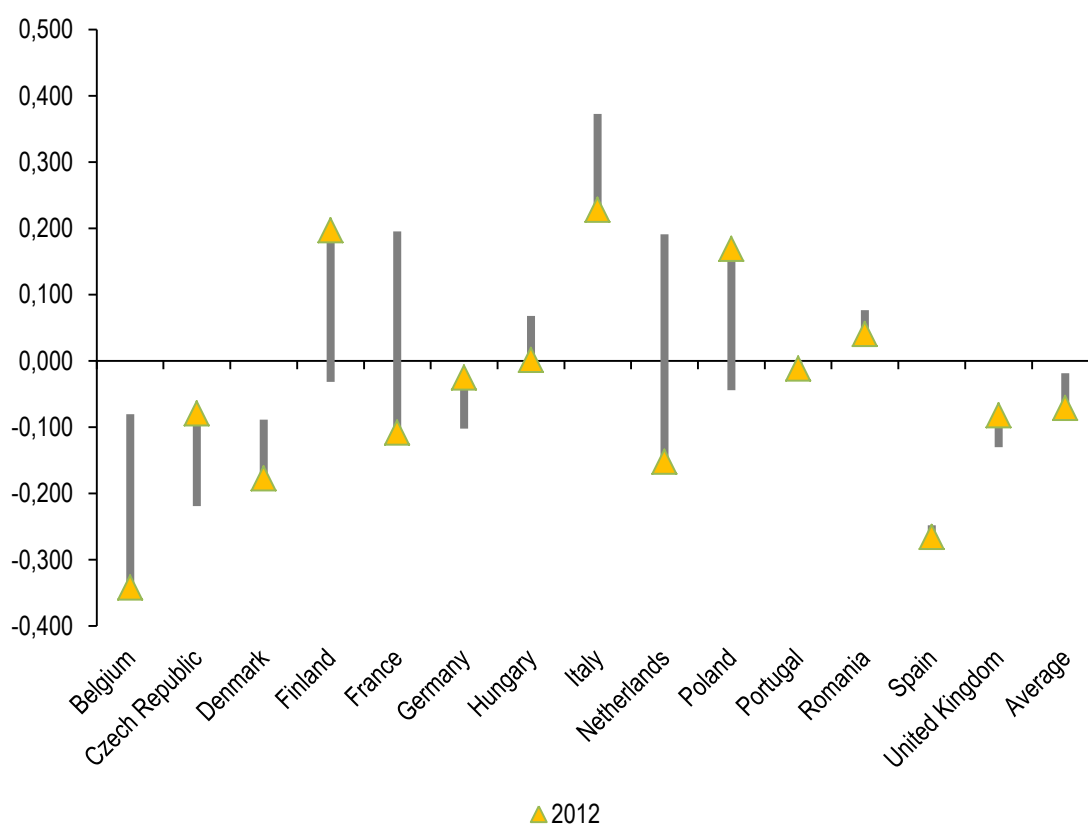
| Measure of imbalance | 2004 | 2006 | 2008 | 2010 | 2012 | CAGR 2004-2012 | CAGR 2004-2008 | CAGR 2008-2012 |
|----------------------|---------------|---------------|---------------|--------------|--------------|-------------------|-------------------|-------------------|
| Mineral water | | | | | | | | |
| Belgium | 0,110 | 0,132 | 0,116 | 0,075 | 0,048 | -9,8% | 1,5% | -19,8% |
| Czech Republic | -0,306 | -0,428 | -0,318 | -0,274 | -0,227 | -3,7% | 1,0% | -8,1% |
| Denmark | -0,103 | -0,051 | -0,077 | -0,114 | -0,105 | 0,3% | -7,1% | 8,1% |
| Finland | 0,102 | 0,219 | 0,205 | 0,191 | 0,207 | 9,3% | 19,1% | 0,3% |
| France | -0,099 | -0,142 | -0,150 | -0,161 | -0,234 | 11,3% | 11,0% | 11,6% |
| Germany | 0,434 | 0,481 | 0,528 | 0,606 | 0,640 | 5,0% | 5,0% | 4,9% |
| Hungary | 0,059 | 0,064 | 0,162 | 0,073 | 0,156 | 12,9% | 28,6% | -0,9% |
| Italy | -0,040 | -0,056 | -0,062 | -0,047 | -0,106 | 12,9% | 11,3% | 14,4% |
| Netherlands | -0,210 | -0,161 | -0,192 | -0,154 | 0,039 | #NUM! | -2,2% | #NUM! |
| Poland | 0,127 | 0,026 | 0,098 | 0,096 | 0,099 | -3,0% | -6,2% | 0,4% |
| Portugal | 0,400 | 0,292 | 0,373 | 0,409 | 0,411 | 0,4% | -1,7% | 2,4% |
| Romania | 0,238 | 0,009 | -0,070 | -0,078 | 0,120 | -8,2% | #NUM! | #NUM! |
| Spain | 0,179 | 0,215 | 0,273 | 0,287 | 0,317 | 7,4% | 11,1% | 3,9% |
| United Kingdom | -0,213 | -0,222 | -0,186 | -0,188 | -0,154 | -4,0% | -3,4% | -4,6% |
| Average | -0,014 | -0,023 | -0,005 | 0,004 | 0,041 | #NUM! | -23,7% | #NUM! |

Measure of Imbalance Mineral water



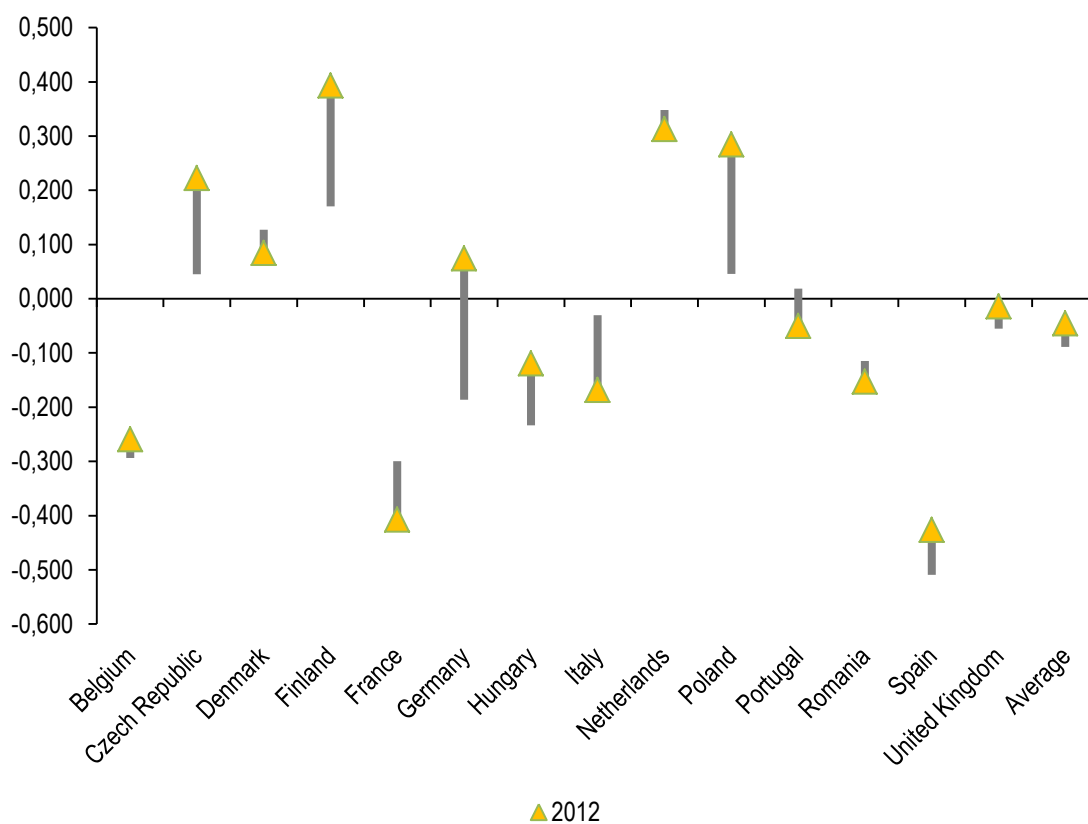
| Measure of imbalance | 2004 | 2006 | 2008 | 2010 | 2012 | CAGR 2004-2012 | CAGR 2004-2008 | CAGR 2008-2012 |
|-----------------------|---------------|---------------|---------------|---------------|---------------|-------------------|-------------------|-------------------|
| Savoury snacks | | | | | | | | |
| Belgium | -0,080 | -0,245 | -0,316 | -0,338 | -0,342 | 19,9% | 40,9% | 2,0% |
| Czech Republic | -0,219 | -0,137 | -0,022 | -0,142 | -0,080 | -11,9% | -44,0% | 38,7% |
| Denmark | -0,088 | -0,028 | 0,007 | -0,144 | -0,177 | 9,1% | #NUM! | #NUM! |
| Finland | -0,031 | 0,107 | 0,112 | 0,209 | 0,197 | #NUM! | #NUM! | 15,3% |
| France | 0,195 | 0,060 | -0,041 | -0,070 | -0,108 | #NUM! | #NUM! | 27,4% |
| Germany | -0,102 | -0,014 | 0,031 | -0,036 | -0,025 | -16,0% | #NUM! | #NUM! |
| Hungary | 0,068 | 0,069 | 0,020 | -0,038 | 0,001 | -38,1% | -26,5% | -47,8% |
| Italy | 0,373 | 0,302 | 0,263 | 0,238 | 0,228 | -6,0% | -8,4% | -3,5% |
| Netherlands | 0,191 | -0,052 | -0,206 | -0,257 | -0,152 | #NUM! | #NUM! | -7,3% |
| Poland | -0,044 | -0,016 | 0,063 | 0,104 | 0,169 | #NUM! | #NUM! | 28,1% |
| Portugal | 0,000 | 0,000 | 0,061 | 0,012 | -0,012 | #NUM! | 245,6% | #NUM! |
| Romania | 0,077 | -0,079 | -0,055 | -0,098 | 0,041 | -7,6% | #NUM! | #NUM! |
| Spain | -0,248 | -0,243 | -0,195 | -0,238 | -0,266 | 0,9% | -5,9% | 8,1% |
| United Kingdom | -0,130 | -0,103 | -0,098 | -0,069 | -0,082 | -5,6% | -6,8% | -4,4% |
| Average | -0,018 | -0,045 | -0,054 | -0,087 | -0,071 | 18,5% | 31,2% | 7,0% |

Measure of Imbalance Savoury snacks

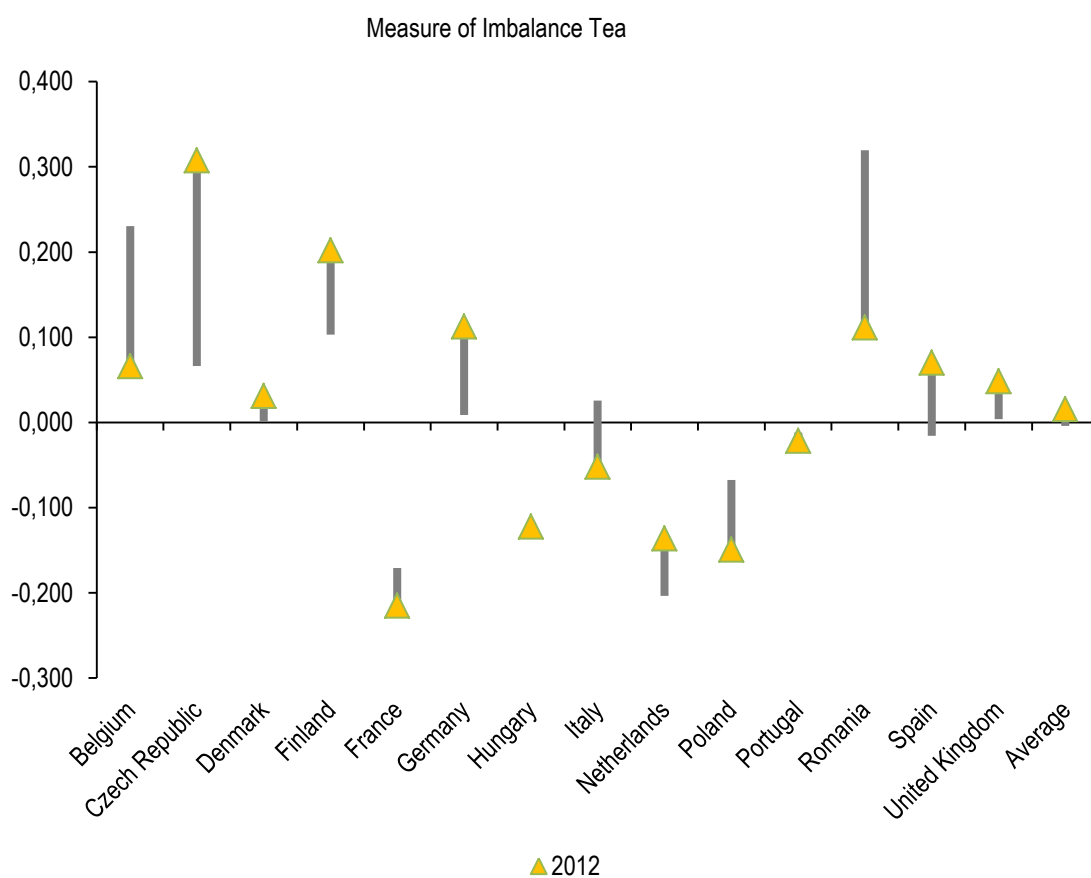


| Measure of imbalance | 2004 | 2006 | 2008 | 2010 | 2012 | CAGR 2004-2012 | CAGR 2004-2008 | CAGR 2008-2012 |
|----------------------|---------------|---------------|---------------|---------------|---------------|-------------------|-------------------|-------------------|
| Soft drinks | | | | | | | | |
| Belgium | -0,294 | -0,296 | -0,291 | -0,266 | -0,259 | -1,5% | -0,2% | -2,9% |
| Czech Republic | 0,045 | 0,116 | 0,250 | 0,227 | 0,222 | 22,0% | 53,2% | -2,9% |
| Denmark | 0,128 | 0,149 | 0,120 | 0,106 | 0,084 | -5,1% | -1,5% | -8,5% |
| Finland | 0,171 | 0,322 | 0,349 | 0,370 | 0,393 | 11,0% | 19,6% | 3,0% |
| France | -0,300 | -0,334 | -0,362 | -0,384 | -0,408 | 3,9% | 4,8% | 3,0% |
| Germany | -0,186 | -0,122 | -0,091 | 0,049 | 0,074 | #NUM! | -16,5% | #NUM! |
| Hungary | -0,234 | -0,234 | -0,151 | -0,177 | -0,119 | -8,0% | -10,3% | -5,8% |
| Italy | -0,030 | -0,100 | -0,134 | -0,139 | -0,169 | 23,8% | 44,8% | 6,0% |
| Netherlands | 0,348 | 0,381 | 0,246 | 0,214 | 0,312 | -1,3% | -8,4% | 6,2% |
| Poland | 0,046 | 0,099 | 0,231 | 0,256 | 0,284 | 25,6% | 49,6% | 5,4% |
| Portugal | 0,019 | -0,003 | -0,005 | -0,019 | -0,051 | #NUM! | #NUM! | 80,8% |
| Romania | -0,115 | -0,197 | -0,234 | -0,259 | -0,153 | 3,7% | 19,4% | -10,0% |
| Spain | -0,509 | -0,473 | -0,406 | -0,402 | -0,427 | -2,2% | -5,5% | 1,3% |
| United Kingdom | -0,055 | -0,051 | -0,056 | -0,034 | -0,014 | -15,6% | 0,2% | -28,9% |
| Average | -0,089 | -0,071 | -0,065 | -0,061 | -0,046 | -8,0% | -7,5% | -8,5% |

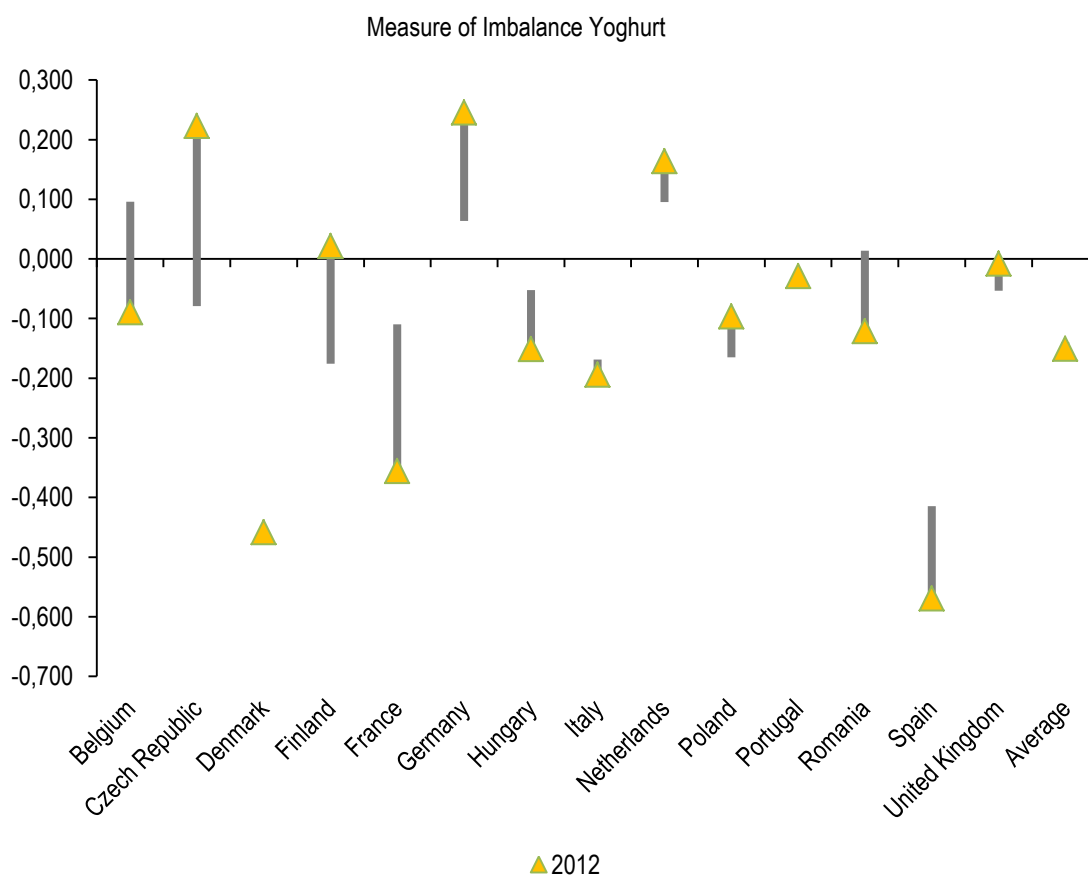
Measure of Imbalance Soft drinks



| Measure of imbalance | 2004 | 2006 | 2008 | 2010 | 2012 | CAGR 2004-2012 | CAGR 2004-2008 | CAGR 2008-2012 |
|----------------------|---------------|---------------|--------------|--------------|--------------|-------------------|-------------------|-------------------|
| Tea | | | | | | | | |
| Belgium | 0,230 | 0,178 | 0,136 | 0,127 | 0,066 | -14,5% | -12,4% | -16,5% |
| Czech Republic | 0,066 | 0,190 | 0,314 | 0,302 | 0,307 | 21,1% | 47,5% | -0,5% |
| Denmark | 0,001 | 0,015 | 0,033 | 0,039 | 0,031 | 48,7% | 124,1% | -1,4% |
| Finland | 0,103 | 0,181 | 0,176 | 0,198 | 0,202 | 8,8% | 14,4% | 3,5% |
| France | -0,171 | -0,185 | -0,187 | -0,197 | -0,215 | 2,9% | 2,2% | 3,6% |
| Germany | 0,009 | 0,037 | 0,016 | 0,104 | 0,113 | 37,7% | 16,2% | 63,2% |
| Hungary | -0,129 | -0,157 | -0,160 | -0,140 | -0,122 | -0,7% | 5,6% | -6,5% |
| Italy | 0,026 | -0,021 | -0,036 | -0,027 | -0,052 | #NUM! | #NUM! | 10,0% |
| Netherlands | -0,204 | -0,143 | -0,176 | -0,205 | -0,136 | -4,9% | -3,6% | -6,2% |
| Poland | -0,068 | -0,164 | -0,099 | -0,153 | -0,149 | 10,4% | 9,9% | 10,9% |
| Portugal | -0,012 | -0,033 | 0,031 | 0,019 | -0,022 | 7,9% | #NUM! | #NUM! |
| Romania | 0,319 | 0,049 | -0,030 | -0,078 | 0,111 | -12,3% | #NUM! | #NUM! |
| Spain | -0,016 | -0,029 | 0,046 | 0,066 | 0,070 | #NUM! | #NUM! | 10,8% |
| United Kingdom | 0,004 | -0,022 | 0,016 | 0,036 | 0,048 | 36,6% | 41,8% | 31,5% |
| Average | -0,004 | -0,008 | 0,004 | 0,006 | 0,016 | #NUM! | #NUM! | 44,8% |



| Measure of imbalance | 2004 | 2006 | 2008 | 2010 | 2012 | CAGR | CAGR | CAGR |
|----------------------|---------------|---------------|---------------|---------------|---------------|-------------|-------------|--------------|
| | | | | | | 2004-2012 | 2004-2008 | 2008-2012 |
| Yoghurt | | | | | | | | |
| Belgium | 0,096 | -0,083 | -0,145 | -0,164 | -0,089 | #NUM! | #NUM! | -11,4% |
| Czech Republic | -0,079 | 0,092 | 0,171 | 0,157 | 0,223 | #NUM! | #NUM! | 6,9% |
| Denmark | -0,475 | -0,454 | -0,436 | -0,455 | -0,458 | -0,4% | -2,1% | 1,2% |
| Finland | -0,175 | -0,069 | -0,048 | -0,004 | 0,022 | #NUM! | -27,6% | #NUM! |
| France | -0,110 | -0,281 | -0,319 | -0,321 | -0,356 | 15,8% | 30,5% | 2,7% |
| Germany | 0,064 | 0,134 | 0,117 | 0,201 | 0,246 | 18,4% | 16,3% | 20,5% |
| Hungary | -0,052 | -0,096 | -0,075 | -0,118 | -0,151 | 14,2% | 9,4% | 19,3% |
| Italy | -0,169 | -0,167 | -0,161 | -0,174 | -0,194 | 1,8% | -1,2% | 4,8% |
| Netherlands | 0,096 | 0,193 | -0,076 | 0,048 | 0,164 | 7,0% | #NUM! | #NUM! |
| Poland | -0,165 | -0,173 | -0,099 | -0,115 | -0,096 | -6,5% | -11,9% | -0,7% |
| Portugal | -0,050 | -0,060 | -0,003 | -0,016 | -0,028 | -6,8% | -52,3% | 82,1% |
| Romania | 0,014 | -0,096 | -0,168 | -0,201 | -0,121 | #NUM! | #NUM! | -7,8% |
| Spain | -0,415 | -0,574 | -0,530 | -0,527 | -0,569 | 4,0% | 6,3% | 1,8% |
| United Kingdom | -0,053 | -0,007 | -0,037 | -0,066 | -0,008 | -21,4% | -8,8% | -32,3% |
| Average | -0,140 | -0,161 | -0,175 | -0,171 | -0,150 | 0,9% | 5,8% | -3,7% |



11.3. Annex C: Design of the econometric analysis

11.3.1. The general specification and choice of indicators

The objective of the econometric analysis is to analyse the historical evidence for the impact of priori drivers on each of choice and innovation. The analysis models the behaviour of each shop and the selection of products that it offers, and seeks to explain this with reference to various national and local drivers. It is important to note that this differs from modelling the total assortment available to consumers from the shops to which they have access, which would include the impact of a change in the number and mix of types of shops in the local area. The number and mix of shops is examined and reported in the descriptive analysis of this study.

The relationships of interest are expressed below:

$$[\text{choice or innovation}]_{s,p,t} = f \{$$

- shop type_{s,t}
- shop size_{s,t}
- private labels share_{n/s,p,t}
- retailers' concentration_{n/s,t}
- suppliers' concentration_{n/s,p,t}
- [or imbalance (retailer vs supplier concentration)_{n/s,p,t}]
- socio-demographic indicator_{c,t}
- rural/urban category_c
- product category turnover_{n,p,t}
- economic prosperity_{c/n,t}
- Member State_n
- product category_p
- year_y
- season_m
- new competitor shop opening_{s,t}

$$\}$$

where the indices used are:

- c consumer shopping area
- m month in the year (2nd quarter or 4th quarter),
- n Member State
- p product category
- s shop
- t time period (two per year, every second year)
- y year

Variables and alternative indicators

The following tables note the alternative empirical indicators used to represent the conceptual variables in the broad specification outlined above. Alternative measures of choice and innovation are generally shown to be moderately or strongly correlated (see Table 32 and Table 33). The stronger the correlation, the more we expect the estimation results for the different measures to be broadly similar. However, correlation between national and local retail concentration is low (see Table 34, Table 35 and Table 36) because national measures do not vary across shops in the same country. This is also the case for supplier concentration.

Table 32: Correlations between choice variables (long data set)

| Choice | Product Variety | Product Price Variety | Product Size Variety |
|--------------------------|-----------------|-----------------------|----------------------|
| Product Price Variety | -0.23 | | |
| Product Size Variety | 0.76 | -0.18 | |
| Product Supplier Variety | 0.64 | 0.1 | 0.55 |

Table 33: Correlations between innovation variables (long data set)

| Innovation | Opus Innovations | New Product | New Packaging | New Formula |
|---------------------|------------------|-------------|---------------|-------------|
| New Product | 0.74 | | | |
| New Packaging | 0.43 | 0.52 | | |
| New Formula | 0.62 | 0.52 | 0.43 | |
| New Range extension | 0.78 | 0.74 | 0.52 | 0.60 |

Table 34: Correlations between national and local supplier concentrations (long data set)

| Supplier | National C5 full market | National HHI full market | National C5 brand only | National HHI brand only | Local C5 |
|--------------------------|-------------------------|--------------------------|------------------------|-------------------------|----------|
| National HHI full market | 0.87 | | | | |
| National C5 brand only | 0.75 | 0.68 | | | |
| National HHI brand only | 0.63 | 0.83 | 0.81 | | |
| Local C5 | 0.21 | 0.29 | 0.4 | 0.41 | |
| Local HHI | 0.04 | 0.12 | 0.24 | 0.26 | 0.73 |

Table 35: Correlations between national and local retail concentrations (long data set)

| Retail Concentration | Local C5 Floorspace (Banner) | Local HHI Floorspace (Banner) | Local C5 Floorspace | Local HHI Floorspace | Local C5 Shop Share (Banner) | Local HHI Shop share (Banner) | Local C5 Shop share | Local HHI Shop share |
|------------------------------------|-------------------------------------|--------------------------------------|----------------------------|-----------------------------|-------------------------------------|--------------------------------------|----------------------------|-----------------------------|
| National group C5 Edible Grocery | 0.16 | 0.07 | 0.21 | 0.03 | 0.17 | 0.1 | 0.21 | 0.13 |
| National group HHI Edible Grocery | 0.15 | 0.06 | 0.19 | 0.02 | 0.17 | 0.1 | 0.2 | 0.12 |
| National group C5 Modern Retail | 0.2 | 0.1 | 0.29 | 0.09 | 0.18 | 0.11 | 0.27 | 0.14 |
| National group HHI Modern Retail | 0.12 | 0.01 | 0.02 | -0.08 | 0.23 | 0.14 | 0.14 | 0.06 |
| National banner C5 Edible Grocery | 0.16 | 0.06 | 0.19 | 0.02 | 0.18 | 0.11 | 0.2 | 0.12 |
| National banner HHI Edible Grocery | 0.13 | 0.03 | 0.1 | -0.04 | 0.18 | 0.11 | 0.16 | 0.09 |
| National banner C5 Modern Retail | 0.17 | 0.06 | 0.17 | 0.02 | 0.21 | 0.13 | 0.21 | 0.1 |
| National banner HHI Modern Retail | 0.03 | -0.05 | -0.17 | -0.18 | 0.2 | 0.12 | 0.01 | -0.02 |

Table 36: Correlations between selected measures of national and local retail concentrations (long data set)

| Retail Concentration | National group HHI Edible Grocery | National HHI Modern Retail | National banner HHI Edible Grocery | National banner HHI Modern Retail | Local HHI Floorspace (Banner) | Local HHI Floorspace | Local HHI Shop share (Banner) |
|------------------------------------|--|-----------------------------------|---|--|--------------------------------------|-----------------------------|--------------------------------------|
| National group HHI Modern Retail | 0.67 | | | | | | |
| National banner HHI Edible Grocery | 0.97 | 0.77 | | | | | |
| National banner HHI Modern Retail | 0.44 | 0.89 | 0.63 | | | | |
| Local HHI Floorspace (Banner) | 0.06 | 0.01 | 0.03 | -0.05 | | | |
| Local HHI Floorspace | 0.02 | -0.08 | -0.04 | -0.18 | 0.87 | | |
| Local HHI Shop share (Banner) | 0.1 | 0.14 | 0.11 | 0.12 | 0.84 | 0.69 | |
| Local HHI Shop share | 0.12 | 0.06 | 0.09 | -0.02 | 0.68 | 0.81 | 0.75 |

Table 37: Variables and alternative indicators

| Conceptual variable | | Empirical indicator | Units |
|--------------------------|---|---|-------|
| Choice | | | |
| | a | Product variety (no. of unique products in given shop) | # |
| | b | Product size variety (no. of unique product sizes in a given product category in a given shop) | # |
| | c | Product supplier variety (No. of unique brand owners) | # |
| Innovation | d | Product price variety (Average of coefficient of prices across a category, shop over time) | # |
| | a | Innovation (new EAN codes) observed in shop sample using Nielson Opus data | # |
| | b | New products (see Mintel GNDP definition) | % |
| | c | New packaging (see Mintel GNDP definition) | % |
| | d | New formulation/packaging (see Mintel GNDP definition) | % |
| Shop type | e | New range extensions (see Mintel GNDP definition) | % |
| | | Shop type dummy (base: HM) | # |
| Shop size | | Shop size | m2 |
| Private labels share | a | Private labels SKU share in shops | % |
| | b | Private labels national market sales share | % |
| Retailers' concentration | a | Retail concentration (HHI) at local level - % of shops and % of floorspace | Value |
| | b | Retail concentration (c(k)) at local level - % of shops and % of floorspace | % |
| | c | Retail concentration (HHI) at national level - % market share at banner level and retail group level | Value |
| | d | Retail concentration (c(k)) at national level - % market share at banner level and retail group level | % |
| Suppliers' concentration | a | Supplier concentration (HHI) at local level - % of SKUs | Value |

| Conceptual variable | Empirical indicator | Units |
|--|--|-----------|
| | b Supplier concentration (c(k)) at local level - % of SKUs | % |
| | c Supplier concentration (HHI) at national level - % market share | Value |
| | d Supplier concentration (c(k)) at national level - % market share | % |
| Measure of imbalance (ratio of concentration) (included as an alternative to showing retailers' and suppliers' concentration separately) | Ratio of retail concentration HHI to supplier concentration HHI | Value |
| Socio-demographic indicator | a Population size | # |
| | b GDP per capita | # |
| Rural/urban type | a Population density | # |
| | b Rural/intermediate/urban dummy (base: PU) | # |
| Product category turnover | Product category turnover at national level | € million |
| Economic prosperity | a Unemployment rate (by region and time period) | % |
| | b Retail business expectations for the next 3 months, converted to an index where 100 corresponds to 'no change' | Index |
| | c Unemployment rate | % |
| Country | Dummy (base: Italy) | # |
| Product category | Dummy (base: first product category – baby food) | # |
| Year | Dummy (base: first year – 2004 or 2008) | # |
| Season | Dummy (base: season 1 – 2 nd quarter) | # |
| New shop opening | Dummy (= 1 if a new shop opened in the catchment area) | Dummy |

For dummy variables, 'base' indicates the category for which a dummy variable will not be included (to avoid multicollinearity), and so the 'base' equation (prior to the addition of dummy effects) will represent this category.

In all cases the variables appear in log linear transformation, except for dummies which are just linear

11.4. Annex D: The data sets

The observations in the data set span three dimensions by shop, product and time period although some drivers do not vary over all of these dimensions (for example, some national drivers vary only between Member States and over time). In addition, the sample was limited by the need for Trade Dimensions data for all time periods for the calculation of local retail concentration.

The final data sets are balanced panel data sets including all indicators and drivers. Due to variation in the availability of data, two data sets were used; a long data set covering the period 2004H1 to 2012H2 and a short data set covering the period 2008H1 to 2012H2 but with more Member States. The econometric analysis was performed on both of these data sets. The Table 38 below illustrates the difference in coverage between the two data sets:

Table 38: Country and shop coverage in short and long data sets

| Long Data set (2004H1 - 2012H2) | No. of shops | Short Data set (2008H1 - 2012H2) | No. of shops |
|--|---------------------|---|---------------------|
| Italy | 80 | Italy | 83 |
| Spain | 42 | Spain | 42 |
| France | 131 | Belgium | 9 |
| Portugal | 19 | France | 131 |
| Poland* | 24 | Portugal | 19 |
| | | Poland | 29 |
| | | Hungary | 24 |
| Total | 296 | Total | 337 |

Single Member State estimates

For countries where there are sufficient observations (at least 10 shops which excludes Belgium), it was possible to estimate an equation for that country alone, which allows the parameter estimates for all drivers to change (whereas when the data are pooled across countries the only country-specific parameter is the country dummy). However, this excludes from the analysis a comparison across Member States and this is important for national drivers that only vary over time and Member States.

11.5. Annex E: Econometric estimation issues

Our choice of econometric estimation methods needs to take account of certain issues that may be present in the process that we are modelling.

Unobserved heterogeneity among shops

This is the standard issue that arises with data where the unit of observation is an individual (a shop, in this case). It considers the possibility that there is some difference between the observed outcome for choice/innovation that is due to

something specific about the shop that is not already captured in the drivers. In a pure cross section there is no way of identifying such effects, but in panel data (where indicators are measured for the same shops over different time periods) it is conventional to seek to use the information available for shops over time to detect such (time-invariant) effects and thereby improve the estimates of the effects of the observed drivers. Since the shops are a sample drawn from a wider population, we prefer to use a random effects specification if the data support this (Hausman test), but we also calculate the fixed-effects (within) estimator.

Spatial dependence

The literature on spatial econometrics identifies different kinds of spatial dependence which call for different methods. By spatial dependence we mean the possibility that outcomes in a shop are affected not just by the characteristics of that shop (including the area/country in which it lies) but by the behaviour of nearby shops and/or the characteristics of nearby areas.

Depending on the nature of the spatial dependence that is present, if we do not apply a method that takes account of such dependence then the result may be that the standard errors for parameter estimates are incorrectly estimated (so that we are misled in our assessment of the statistical significance of our parameter estimates for the drivers) or that the parameter estimates themselves are incorrectly estimated (so that we incorrectly attribute an influence to a given driver).

A spatial weight matrix, W , is given by assumption, which measures any given shop's spatial dependence on every other shop. Conventionally this is constructed as a declining function of distance (often the reciprocal of the square of distance is used), so that nearby shops are assumed to have a large influence and distant shops to have negligible influence. This spatial weight matrix is then used both to test for spatial dependence and in methods that seek to account for that dependence.

We use Moran's I to test for spatial dependence in estimated residuals. This provides a diagnostic suggesting misspecification in an equation that does not adequately account for spatial dependence. Moran's I is calculated for cross sections and is used to for every estimated equation. The spatial econometrics literature developed methods to address various kinds of spatial dependence in cross sections:

- spatial lag of exogenous variables
- spatial correlation of residuals
- spatial lag of endogenous variables

A specification of spatial lag of exogenous variables can then be estimated using ordinary least squares by including additional regressors. If X is the $(N \times k)$ matrix of regressors then WX is the matrix of spatially lagged regressors (where N is the number of shops and k is the number of regressors).

Estimation of models that assume spatial lag of endogenous variables and spatial correlation of residuals (the so-called SARAR specification) requires a more sophisticated estimation technique (maximum likelihood, two-stage least squares or general method of moments).

With the growth in popularity of panel data approaches, the spatial econometrics methods that were originally designed for cross-sections have been extended to panel data applications. The software to implement such methods has been developed and made available by some academics as an extension of existing software (such as

Stata, R or MATLAB), but not all such libraries are sufficiently general to cope with the dimensions that are present in our data set (disaggregation over time, space and also by product type).

In practice, when we undertook the estimation work the Hausman test was rejected in most specifications indicating that the random effects model is inconsistent and may not approach the true value even as sample size increases. However, the fixed-effects estimator proved to be more vulnerable to spatial dependence, and so we have reported and drawn on both types of estimator in summarising conclusions about the impacts of the drivers.

A particular form of spatial dependence arises when it is believed that the residuals (which capture all the reasons for variation in the dependent variable that are not accounted for by the drivers that have been included) could be 'clustered', that is related to one another by geographical area. The shops in this study are located in common consumer shopping areas and the possibility arises that there are unobserved (i.e. not taken into account in the indicators that are included in the analysis) influences at the local level that affect all shops in the same area. In that case the estimated standard errors associated with each parameter estimate, which are used to assess whether it is statistically significantly different from zero, would be underestimated if no allowance were made for clustering. The results reported here use standard errors estimated on the assumption of clustering at the CSA level so as to take a cautious approach to reporting statistical significance of results. In many cases the parameter estimates that are treated as statistically insignificant as a result of taking this approach are those that are in any case so small as to be economically irrelevant.

11.6. Annex F: Results of the econometric analysis

The following discussion on the results of the econometric analysis is organised around key testable hypothesis. The hypotheses are based on expectations that emerged from the descriptive analysis.

11.6.1. Choice

Hypothesis: Retail concentration at procurement level is a driver of the evolution of choice in all its components

Most models with the exception of those exploring the effect on product price variety indicate evidence of a positive effect of national retail concentration: as concentration among retailers at national level has increased, so has choice. On the other hand, the evidence indicates a negative effect for product price variety. Also, the effect for product supplier variety is not statistically significant for the fixed effects model.

Hypothesis: The growing emergence of private labels, in part due to the increased presence of discount stores appears to have played a role in the evolution of choice

A statistically significant positive effect of private labels was estimated for product variety, product size variety (not significant in the short period) and product supplier variety, and a negative effect for product price variety, but in all cases the size was very small.

Hypothesis: The economic crisis has negatively impacted the evolution of choice in all its components

The estimated impact of the unemployment rate on choice was positive, rather than negative, but in any case small. This hypothesis is largely not supported in the results. The exception to this is the price variety measure where a small negative effect was found. However, the equations also include a generally positive impact of GDP per capita as a measure of prosperity, and so the expected negative impact of the economic crisis comes through this measure.

Hypothesis: Shop type has strongly impacted the level and evolution of choice in all its components.

The evidence supports this hypothesis for product variety, product size variety and product supplier variety but the evidence is less clear for product price variety. The 'base' for shop type is hypermarket: the estimated impacts indicate that for all but product price variety, supermarkets and hard discounters broadly offer less choice than hypermarkets, and hard discounters offer less choice than supermarkets for product variety, product size variety and product supplier. In contrast, in the case of product price variety the (negative) hard discounter effect was not generally larger than the (negative) supermarket effect (both compared to hypermarkets).

Hypothesis: National product category turnover appears to have an impact on the evolution of choice in all its components

National product category turnover, which can be conceptualised as market size, is shown to have a large positive effect on product variety, product size variety and product supplier variety although the effect on product price variety is negative, small and in the case of one model insignificant. The effect on the measures other than product price variety is generally smaller in the short period and in the case of product size variety no longer significant in the random effects model. However, the results generally suggest that much more choice is provided in product categories with larger turnover, but the choice of prices available to consumers is somewhat smaller.

Hypothesis: Supplier concentration at procurement level is a driver of the evolution of choice in all its components

The results do not support this hypothesis. The evidence is mixed: the impacts are small, not always statistically significant and vary in sign.

Hypothesis: Measure of imbalance at procurement level is a driver of the evolution of choice in all its components

A very small positive impact from the imbalance between retailer and supplier concentrations on product variety was found. In contrast, evidence is found to indicate a negative effect of imbalance on product size variety and product price variety

suggesting as the concentration of retailers relative to suppliers increases, the variety of product sizes decreases and retailers reduce the variety of product prices. But the size of the effects is small.

Hypothesis: Average population size, average population density, GDP per capita and new shop opening are drivers of the evolution of choice in all its components

The effect of average (over time) population size is found to be have no statistically significant effect on all but the product price variety measure where it is found to have a positive effect. However, average (over time) population density is found to have a negative effect in all models with the exception of the product price variety models. This would suggest less choice in more densely populated CSAs but should be taken in the context of the findings for GDP per capita. The impact of GDP per capita is found to be broadly positive in all but the product price variety model where the evidence is mixed. This suggests two offsetting effects, since the more densely populated areas (cities) tend also to have higher GDP per capita. The more affluent the local economy in the CSA the more choice but more densely populated areas will have less choice.

The opening of a new shop has a positive effect on all choice indicators in the existing shops although the effect is often insignificant in the short period. Generally, the results suggest that existing shops increase the choice available to consumers when faced with the competition provided by the opening of a new shop in the same area.

To face a new competitor, established retailers seek to retain customer loyalty; they modify the product assortment and potentially extend their product offer by including products the competitors are offering that they do not currently stock and/or offering new products to better satisfy existing customers.

Table 39: Results - Product Variety

| Product Variety | | | | | | | | | | | | | | |
|---|--|---|-------------------------------|--|--|--|--|--|---|-------------------------------|--|--|--|--|
| | Long period RE (Separate concentration measures) † | Short Period RE (Separate concentration measures) † | Long period RE (Imbalance) †† | Long period RE (Separate concentration measures) † | Long period RE (Separate concentration measures) † | Long period RE (Separate concentration measures) † | Long period RE (Separate concentration measures) † | Long period RE (Separate concentration measures) † | Short Period FE (Separate concentration measures) † | Long period FE (Imbalance) †† | Long period FE (Separate concentration measures) † | Long period FE (Separate concentration measures) † | Long period FE (Separate concentration measures) † | Long period FE (Separate concentration measures) † |
| Local Private labels share | 0.014*** | 0.006*** | 0.015*** | 0.015*** | 0.014*** | | 0.016*** | 0.013*** | 0.005** | 0.013*** | 0.014*** | 0.013*** | | 0.014*** |
| | (0.002) | (0.002) | (0.002) | (0.002) | (0.002) | | (0.003) | (0.003) | (0.002) | (0.003) | (0.003) | (0.003) | | (0.003) |
| National Private labels share | | | | | | | -0.006 | | | | | | | -0.001 |
| | | | | | | | (0.007) | | | | | | | (0.007) |
| National retail concentration HHI (group, edible groceries) | 0.144*** | 0.216*** | | | 0.143*** | 0.161*** | | 0.074*** | 0.186*** | | | 0.078*** | 0.087*** | |
| | (0.02) | (0.041) | | | (0.02) | (0.02) | | (0.021) | (0.048) | | | (0.021) | (0.021) | |
| National retail concentration HHI (group, modern retail) | | | | | 0.143** | | | | | | | 0.013 | | |
| | | | | | (0.058) | | | | | | | (0.058) | | |
| Local retail concentration | | | | | | | | -0.034 | | | | | | -0.051 |

| Product Variety | | | | | | | | | | | | | | |
|---|--|---|-------------------------------|--|--|--|--|--|---|-------------------------------|--|--|--|--|
| | Long period RE (Separate concentration measures) † | Short Period RE (Separate concentration measures) † | Long period RE (Imbalance) †† | Long period RE (Separate concentration measures) † | Long period RE (Separate concentration measures) † | Long period RE (Separate concentration measures) † | Long period RE (Separate concentration measures) † | Long period FE (Separate concentration measures) † | Short Period FE (Separate concentration measures) † | Long period FE (Imbalance) †† | Long period FE (Separate concentration measures) † | Long period FE (Separate concentration measures) † | Long period FE (Separate concentration measures) † | Long period FE (Separate concentration measures) † |
| n HHI (group, floorspace) | | | | | | | | | | | | | | |
| | | | | | | | | (0.03) | | | | | | (0.04) |
| National supplier concentration n HHI (full market) | -0.003 | -0.018 | | -0.002 | | 0.003 | -0.012 | -0.035*** | -0.057** | | -0.044*** | | -0.024** | -0.049*** |
| | (0.009) | (0.014) | | (0.01) | | (0.008) | (0.01) | (0.013) | (0.022) | | (0.012) | | (0.012) | (0.013) |
| National supplier concentration n HHI (brands only) | | | | | 0.013 | | | | | | | -0.004 | | |
| | | | | | (0.013) | | | | | | | (0.019) | | |
| Imbalance | | | 0.004 | | | | | | | 0.005 | | | | |
| | | | (0.017) | | | | | | | (0.023) | | | | |
| Average Population density | -0.086*** | -0.045*** | -0.117*** | -0.108*** | -0.085*** | -0.088*** | -0.092*** | | | | | | | |
| | (0.011) | (0.013) | (0.018) | (0.014) | (0.011) | (0.012) | (0.013) | | | | | | | |
| Shop floor space | 0.253*** | 0.219*** | 0.249*** | 0.252*** | 0.254*** | 0.256*** | 0.253*** | 0.246*** | 0.153*** | 0.231*** | 0.236*** | 0.244*** | 0.242*** | 0.243*** |

| Product Variety | | | | | | | | | | | | | | |
|------------------------------------|--|---|-------------------------------|--|--|--|--|--|---|-------------------------------|--|--|--|--|
| | Long period RE (Separate concentration measures) † | Short Period RE (Separate concentration measures) † | Long period RE (Imbalance) †† | Long period RE (Separate concentration measures) † | Long period RE (Separate concentration measures) † | Long period RE (Separate concentration measures) † | Long period RE (Separate concentration measures) † | Long period FE (Separate concentration measures) † | Short Period FE (Separate concentration measures) † | Long period FE (Imbalance) †† | Long period FE (Separate concentration measures) † | Long period FE (Separate concentration measures) † | Long period FE (Separate concentration measures) † | Long period FE (Separate concentration measures) † |
| | (0.017) | (0.02) | (0.018) | (0.018) | (0.017) | (0.018) | | | | (0.055) | (0.056) | (0.055) | (0.057) | (0.055) |
| Average Population | 0.016 | 0.036 | 0.016 | 0.016 | 0.016 | 0.016 | 0.021 | - | - | - | - | - | - | - |
| | (0.023) | (0.023) | (0.026) | (0.025) | (0.023) | (0.024) | (0.024) | - | - | - | - | - | - | - |
| Unemployment | 0.024 | 0.062*** | 0.056** | 0.056** | 0.024 | 0.032 | 0.07*** | 0.049** | 0.075*** | 0.071*** | 0.066*** | 0.052** | 0.055*** | 0.068** |
| | (0.022) | (0.02) | (0.025) | (0.024) | (0.022) | (0.022) | (0.025) | (0.021) | (0.018) | (0.024) | (0.023) | (0.021) | (0.02) | (0.026) |
| Regional GDP per Capita | 0.389*** | 0.164*** | 0.571*** | 0.519*** | 0.386*** | 0.411*** | 0.477*** | 0.684*** | 0.331** | 0.822*** | 0.819*** | 0.675*** | 0.702*** | 0.771*** |
| | (0.064) | (0.05) | (0.05) | (0.053) | (0.064) | (0.064) | (0.068) | (0.094) | (0.162) | (0.073) | (0.074) | (0.095) | (0.095) | (0.09) |
| National Product Category Turnover | 0.36*** | 0.228*** | 0.42*** | 0.405*** | 0.362*** | 0.368*** | 0.429*** | 0.432*** | 0.268*** | 0.476*** | 0.476*** | 0.43*** | 0.441*** | 0.468*** |
| | (0.022) | (0.024) | (0.024) | (0.024) | (0.023) | (0.021) | (0.023) | (0.043) | (0.044) | (0.046) | (0.047) | (0.043) | (0.043) | (0.049) |
| Supermarket Dummy | -0.179*** | -1.393*** | -0.179*** | -0.182*** | -0.179*** | -0.177*** | -0.179*** | -0.138** | -0.097** | -0.132** | -0.134** | -0.137** | -0.134** | -0.138** |
| | (0.035) | (0.085) | (0.036) | (0.035) | (0.035) | (0.035) | (0.034) | (0.052) | (0.04) | (0.053) | (0.053) | (0.052) | (0.053) | (0.052) |
| Hard Discounter Dummy | -1.277*** | -0.364*** | -1.293*** | -1.286*** | -1.277*** | -1.267*** | -1.256*** | -1.103*** | -1.098*** | -1.122*** | -1.116*** | -1.106*** | -1.104*** | -1.112*** |
| | (0.11) | (0.092) | (0.11) | (0.111) | (0.11) | (0.109) | (0.116) | (0.047) | (0.049) | (0.047) | (0.048) | (0.047) | (0.048) | (0.045) |

| Product Variety | | | | | | | | | | | | | | |
|------------------------|--|---|-------------------------------|--|--|--|--|--|---|-------------------------------|--|--|--|--|
| | Long period RE (Separate concentration measures) † | Short Period RE (Separate concentration measures) † | Long period RE (Imbalance) †† | Long period RE (Separate concentration measures) † | Long period RE (Separate concentration measures) † | Long period RE (Separate concentration measures) † | Long period RE (Separate concentration measures) † | Long period FE (Separate concentration measures) † | Short Period FE (Separate concentration measures) † | Long period FE (Imbalance) †† | Long period FE (Separate concentration measures) † | Long period FE (Separate concentration measures) † | Long period FE (Separate concentration measures) † | Long period FE (Separate concentration measures) † |
| New shop opening | 0.085*** | 0.012 | 0.097*** | 0.099*** | 0.084*** | 0.087*** | 0.091*** | 0.065*** | 0.006 | 0.065*** | 0.065*** | 0.065*** | 0.067*** | 0.062*** |
| | (0.011) | (0.016) | (0.011) | (0.012) | (0.011) | (0.011) | (0.012) | (0.011) | (0.017) | (0.011) | (0.011) | (0.011) | (0.012) | (0.011) |
| Seasonal Dummy | 0.026*** | 0.022*** | 0.026*** | 0.026*** | 0.026*** | 0.026*** | 0.021*** | 0.026*** | 0.022*** | 0.026*** | 0.026*** | 0.026*** | 0.026*** | 0.021*** |
| | (0.003) | (0.003) | (0.003) | (0.003) | (0.003) | (0.003) | (0.003) | (0.003) | (0.003) | (0.003) | (0.003) | (0.003) | (0.003) | (0.003) |
| BIC | - | - | - | - | - | - | - | - | -20502.9 | - | - | - | - | - |
| Within R ² | 0.261 | 0.073 | 0.259 | 0.259 | 0.261 | 0.255 | 0.216 | 0.265 | 0.075 | 0.263 | 0.263 | 0.265 | 0.258 | 0.22 |
| Between R ² | 0.826 | 0.811 | 0.816 | 0.819 | 0.826 | 0.823 | 0.849 | 0.45 | 0.469 | 0.415 | 0.411 | 0.457 | 0.452 | 0.43 |
| Overall R ² | 0.777 | 0.777 | 0.768 | 0.771 | 0.777 | 0.774 | 0.797 | 0.433 | 0.451 | 0.4 | 0.396 | 0.439 | 0.434 | 0.412 |
| Hausman Test | 431.54*** | 252.92*** | 1245.71*** | 1110.99*** | 625.98** | 640.58*** | 772.79*** | - | - | - | - | - | - | - |
| Moran's I (Range) | (0.172 - 0.348) | (0.477 - 0.537) | (0.185 - 0.36) | (0.18 - 0.357) | (0.171 - 0.348) | (0.181 - 0.344) | (0.115 - 0.313) | (0.413 - 0.513) | (0.233 - 0.297) | (0.411 - 0.503) | (0.416 - 0.505) | (0.41 - 0.512) | (0.412 - 0.512) | (0.372 - 0.469) |

Note: All specifications use standard errors derived by clustering on consumer shopping areas and include product and country fixed effects (not reported). Standard errors are presented in parentheses in the row below each coefficient. *** indicates significant at the 1% level of significance, ** at the 5% and * at the 10%. Moran's I is calculated for each time period; the table shows the range of test statistics over the time periods, and the level of significance indicated is the average p-value across the time periods. † Separate concentration measures to refers to models including both retailer and supplier concentration measures rather than just the imbalance between the two. †† Imbalance refers to models which include only the measure of imbalance between retailer and supplier concentration measures rather than both measures

Table 40: Results - Product Size Variety

| Product Size Variety | | | | | | | | | | | | | | |
|---|--|---|-------------------------------|--|--|--|--|--|--|---|-------------------------------|--|--|--|
| | Long period RE (Separate concentration measures) † | Short Period RE (Separate concentration measures) † | Long period RE (Imbalance) †† | Long period RE (Separate concentration measures) † | Long period RE (Separate concentration measures) † | Long period RE (Separate concentration measures) † | Long period RE (Separate concentration measures) † | Long period RE (Separate concentration measures) † | Long period FE (Separate concentration measures) † | Short Period FE (Separate concentration measures) † | Long period FE (Imbalance) †† | Long period FE (Separate concentration measures) † | Long period FE (Separate concentration measures) † | Long period FE (Separate concentration measures) † |
| Local Private labels share | 0.01*** | 0.002 | 0.011*** | 0.011*** | 0.01*** | - | 0.008*** | 0.008** | 0 | 0.008** | 0.008** | 0.008** | - | 0.006** |
| | (0.003) | (0.002) | (0.003) | (0.003) | (0.003) | - | (0.002) | (0.004) | (0.002) | (0.004) | (0.004) | (0.004) | (0.004) | (0.002) |
| National Private labels share | | | - | - | - | -0.015* | - | - | - | - | - | - | 0.005 | - |
| | | | - | - | - | (0.008) | - | - | - | - | - | - | (0.006) | - |
| National retail concentration HHI (group, edible groceries) | 0.138*** | 0.151*** | - | - | 0.128*** | 0.154*** | - | 0.062*** | 0.15*** | - | - | 0.048** | 0.067*** | - |
| | (0.016) | (0.048) | - | - | (0.016) | (0.017) | - | (0.019) | (0.05) | - | - | (0.017) | (0.019) | - |
| National retail concentration HHI (group, modern retail) | | | - | 0.131** | - | - | - | - | - | - | 0.014 | - | - | - |
| | | | - | (0.056) | - | - | - | - | - | - | (0.051) | - | - | - |
| Local retail concentration | | | - | - | - | - | -0.043** | - | - | - | - | - | - | -0.054* |

| Product Size Variety | | | | | | | | | | | | | | |
|---|--|---|-------------------------------|--|--|--|--|--|---|-------------------------------|--|--|--|--|
| | Long period RE (Separate concentration measures) † | Short Period RE (Separate concentration measures) † | Long period RE (Imbalance) †† | Long period RE (Separate concentration measures) † | Long period RE (Separate concentration measures) † | Long period RE (Separate concentration measures) † | Long period RE (Separate concentration measures) † | Long period FE (Separate concentration measures) † | Short Period FE (Separate concentration measures) † | Long period FE (Imbalance) †† | Long period FE (Separate concentration measures) † | Long period FE (Separate concentration measures) † | Long period FE (Separate concentration measures) † | Long period FE (Separate concentration measures) † |
| n HHI (group, floorspace) | | | | | | | | | | | | | | |
| | | | - | - | - | - | (0.021) | | | | - | - | - | (0.031) |
| National supplier concentration n HHI (full market) | 0.085*** | -0.02 | | 0.085*** | | 0.089*** | 0.03*** | 0.09*** | -0.012 | - | 0.082*** | - | 0.097*** | 0.034** |
| | (0.017) | (0.022) | | (0.018) | | (0.017) | (0.008) | (0.023) | (0.033) | - | (0.023) | - | (0.024) | (0.014) |
| National supplier concentration n HHI (brands only) | | | - | | 0.067*** | | | | | | | 0.095** | * | |
| | | | - | | (0.021) | | | | | | - | (0.032) | | |
| Imbalance | - | - | -0.042** | - | - | - | - | - | - | -0.054*** | - | - | - | - |
| | - | - | (0.02) | - | - | - | - | - | - | (0.018) | - | - | - | - |
| Average Population density | -0.064*** | -0.029*** | -0.099*** | -0.088*** | -0.065*** | -0.066*** | -0.053*** | | | | | | | |
| | (0.017) | (0.011) | (0.027) | (0.021) | (0.018) | (0.018) | (0.013) | | | | | | | |
| Shop floor space | 0.181*** | 0.167*** | 0.176*** | 0.179*** | 0.182*** | 0.182*** | 0.167*** | 0.164*** | 0.069** | 0.15*** | 0.147*** | 0.163** | 0.162*** | 0.162*** |
| | | | | | | | | | | | | * | | |

| Product Size Variety | | | | | | | | | | | | | | |
|------------------------------------|--|---|-------------------------------|--|--|--|--|--|---|-------------------------------|--|--|--|--|
| | Long period RE (Separate concentration measures) † | Short Period RE (Separate concentration measures) † | Long period RE (Imbalance) †† | Long period RE (Separate concentration measures) † | Long period RE (Separate concentration measures) † | Long period RE (Separate concentration measures) † | Long period RE (Separate concentration measures) † | Long period FE (Separate concentration measures) † | Short Period FE (Separate concentration measures) † | Long period FE (Imbalance) †† | Long period FE (Separate concentration measures) † | Long period FE (Separate concentration measures) † | Long period FE (Separate concentration measures) † | Long period FE (Separate concentration measures) † |
| | (0.018) | (0.017) | (0.019) | (0.02) | (0.019) | (0.019) | (0.015) | (0.046) | (0.033) | (0.047) | (0.046) | (0.045) | (0.046) | (0.046) |
| Average Population | 0.012 | 0.011 | 0.012 | 0.011 | 0.012 | 0.011 | 0.013 | - | - | - | - | - | - | - |
| | (0.019) | (0.016) | (0.023) | (0.022) | (0.019) | (0.019) | (0.018) | - | - | - | - | - | - | - |
| Unemployment | 0.056*** | 0.092*** | 0.076*** | 0.086*** | 0.046** | 0.063*** | 0.089*** | 0.065*** | 0.084*** | 0.077*** | 0.066** | 0.052** | 0.068*** | 0.074*** |
| | (0.021) | (0.018) | (0.025) | (0.022) | (0.022) | (0.02) | (0.025) | (0.022) | (0.016) | (0.023) | (0.026) | (0.023) | (0.022) | (0.026) |
| Regional GDP per Capita | 0.335*** | 0.151*** | 0.535*** | 0.471*** | 0.336*** | 0.35*** | 0.304*** | 0.39*** | 0.211 | 0.544*** | 0.527*** | 0.383** | 0.4*** | 0.47*** |
| | (0.076) | (0.052) | (0.09) | (0.072) | (0.077) | (0.077) | (0.063) | (0.139) | (0.136) | (0.126) | (0.125) | (0.141) | (0.139) | (0.131) |
| National Product Category Turnover | 0.283*** | 0.051 | 0.343*** | 0.33*** | 0.282*** | 0.289*** | 0.408*** | 0.559*** | 0.381*** | 0.605*** | 0.606*** | 0.565** | 0.565*** | 0.612*** |
| | (0.041) | (0.064) | (0.039) | (0.04) | (0.043) | (0.04) | (0.018) | (0.046) | (0.039) | (0.048) | (0.049) | (0.046) | (0.046) | (0.053) |
| Supermarket Dummy | -0.126*** | -0.795*** | -0.125*** | -0.128*** | -0.126*** | -0.124*** | -0.138*** | -0.101*** | -0.052** | -0.094** | -0.092** | -0.1*** | -0.098** | -0.1*** |
| | (0.026) | (0.072) | (0.027) | (0.027) | (0.026) | (0.026) | (0.023) | (0.037) | (0.026) | (0.037) | (0.037) | (0.036) | (0.036) | (0.036) |
| Hard Discounter Dummy | -0.776*** | -0.289*** | -0.791*** | -0.785*** | -0.773*** | -0.77*** | -0.851*** | -0.641*** | -0.638*** | -0.656*** | -0.652*** | 0.635** | -0.641*** | -0.644*** |
| | (0.113) | (0.091) | (0.113) | (0.114) | (0.113) | (0.112) | (0.13) | (0.035) | (0.04) | (0.036) | (0.036) | (0.035) | (0.036) | (0.034) |

| Product Size Variety | | | | | | | | | | | | | | |
|------------------------|--|---|-------------------------------|--|--|--|--|--|---|-------------------------------|--|--|--|--|
| | Long period RE (Separate concentration measures) † | Short Period RE (Separate concentration measures) † | Long period RE (Imbalance) †† | Long period RE (Separate concentration measures) † | Long period RE (Separate concentration measures) † | Long period RE (Separate concentration measures) † | Long period RE (Separate concentration measures) † | Long period FE (Separate concentration measures) † | Short Period FE (Separate concentration measures) † | Long period FE (Imbalance) †† | Long period FE (Separate concentration measures) † | Long period FE (Separate concentration measures) † | Long period FE (Separate concentration measures) † | Long period FE (Separate concentration measures) † |
| New shop opening | 0.089*** | -0.003 | 0.097*** | 0.101*** | 0.088*** | 0.091*** | 0.106*** | 0.075*** | -0.002 | 0.073*** | 0.07*** | 0.073** | 0.076*** | 0.074*** |
| | (0.021) | (0.017) | (0.02) | (0.021) | (0.021) | (0.022) | (0.02) | (0.025) | (0.018) | (0.024) | (0.024) | (0.024) | (0.025) | (0.025) |
| Seasonal Dummy | 0.026*** | 0.025*** | 0.026*** | 0.026*** | 0.026*** | 0.027*** | 0.022*** | 0.026*** | 0.025*** | 0.026*** | 0.026*** | 0.026** | 0.027*** | 0.022*** |
| | (0.003) | (0.003) | (0.003) | (0.003) | (0.003) | (0.003) | (0.002) | (0.003) | (0.003) | (0.003) | (0.003) | (0.003) | (0.003) | (0.002) |
| BIC | - | - | - | - | - | - | - | - | 28679.7 | 56165.7 | - | - | - | - |
| Within R ² | 0.097 | 0.016 | 0.096 | 0.259 | 0.097 | 0.096 | 0.143 | 0.1 | 0.019 | 0.099 | 0.099 | 0.1 | 0.099 | 0.148 |
| Between R ² | 0.547 | 0.572 | 0.534 | 0.819 | 0.545 | 0.544 | 0.858 | 0.154 | 0.141 | 0.14 | 0.139 | 0.15 | 0.151 | 0.198 |
| Overall R ² | 0.484 | 0.511 | 0.474 | 0.771 | 0.483 | 0.482 | 0.772 | 0.144 | 0.127 | 0.131 | 0.13 | 0.141 | 0.141 | 0.187 |
| Hausman Test | 628.07*** | 196.80*** | 1137.77*** | 705.59*** | 610.02** | 549.36*** | 483.5*** | - | - | - | - | - | - | - |
| Moran's I (Range) | (0.313 - 0.491) | (0.416 - 0.472) | (0.318 - 0.495) | (0.316 - 0.493) | (0.314 - 0.492) | (0.313 - 0.493) | (0.105 - 0.363) | (0.413 - 0.513) | (0.294 - 0.354) | (0.426 - 0.509) | (0.424 - 0.51) | (0.424 - 0.511) | (0.422 - 0.512) | (0.348 - 0.482) |

Note: All specifications use standard errors derived by clustering on consumer shopping areas and include product and country fixed effects (not reported). Standard errors are presented in parentheses in the row below each coefficient. *** indicates significant at the 1% level of significance, ** at the 5% and * at the 10%. Moran's I is calculated for each time period; the table shows the range of test statistics over the time periods, and the level of significance indicated is the average p-value across the time periods. † Separate concentration measures to refers to models including both retailer and supplier concentration measures rather than just the imbalance between the two. †† Imbalance refers to models which include only the measure of imbalance between retailer and supplier concentration measures rather than both measures

Table 41: Results - Product Supplier Variety

| Product Supplier Variety | | | | | | | | | | | | | | |
|--|--|---|-------------------------------|--|--|--|--|--|---|-------------------------------|--|--|--|--|
| | Long period RE (Separate concentration measures) † | Short Period RE (Separate concentration measures) † | Long period RE (Imbalance) †† | Long period RE (Separate concentration measures) † | Long period RE (Separate concentration measures) † | Long period RE (Separate concentration measures) † | Long period RE (Separate concentration measures) † | Long period FE (Separate concentration measures) † | Short Period FE (Separate concentration measures) † | Long period FE (Imbalance) †† | Long period FE (Separate concentration measures) † | Long period FE (Separate concentration measures) † | Long period FE (Separate concentration measures) † | Long period FE (Separate concentration measures) † |
| Local Private labels share | 0.013*** | 0.006*** | 0.014*** | 0.014*** | 0.013*** | - | 0.016*** | 0.014*** | 0.007*** | 0.014*** | 0.014*** | 0.014*** | - | 0.016*** |
| | (0.002) | (0.002) | (0.002) | (0.002) | (0.002) | - | (0.002) | (0.002) | (0.002) | (0.002) | (0.002) | (0.002) | - | (0.003) |
| National Private labels share | | | - | - | - | 0.015*** | - | - | - | - | - | - | 0.025*** | - |
| | | | - | - | - | (0.005) | - | - | - | - | - | - | (0.006) | - |
| National retail concentration HHI (group, edible groceries) | 0.079*** | 0.062** | - | - | 0.078*** | 0.086*** | - | 0.028 | 0.032 | - | - | 0.027 | 0.03* | - |
| | (0.018) | (0.032) | - | - | (0.017) | (0.017) | - | (0.018) | (0.035) | - | - | (0.018) | (0.018) | - |
| National retail concentration HHI (group, modern retail) | | | - | 0.071 | - | - | - | - | - | - | -0.022 | - | - | - |

| Product Supplier Variety | | | | | | | | | | | | | | |
|---|--|---|-------------------------------|--|--|--|--|--|---|-------------------------------|--|--|--|--|
| | Long period RE (Separate concentration measures) † | Short Period RE (Separate concentration measures) † | Long period RE (Imbalance) †† | Long period RE (Separate concentration measures) † | Long period RE (Separate concentration measures) † | Long period RE (Separate concentration measures) † | Long period RE (Separate concentration measures) † | Long period FE (Separate concentration measures) † | Short Period FE (Separate concentration measures) † | Long period FE (Imbalance) †† | Long period FE (Separate concentration measures) † | Long period FE (Separate concentration measures) † | Long period FE (Separate concentration measures) † | Long period FE (Separate concentration measures) † |
| | | | - | (0.047) | - | - | - | - | | - | (0.049) | - | - | - |
| Local retail concentration on HHI (group, floorspace) | | | - | - | - | - | 0.012 | - | | - | - | - | - | 0.011 |
| | | | - | - | - | - | (0.027) | | | - | - | - | - | (0.035) |
| National supplier concentration on HHI (full market) | -0.006 | -0.009 | | -0.006 | | 0.002 | -0.021** | -0.004 | -0.012 | | -0.01 | | 0.011 | -0.029* |
| | (0.01) | (0.011) | | (0.011) | | (0.01) | (0.01) | (0.016) | (0.027) | | (0.017) | | (0.017) | (0.016) |
| National supplier concentration on HHI (brands only) | | | - | | 0.006 | | | | | - | | 0.025 | | |
| | | | - | | (0.011) | | | | | - | | (0.018) | | |
| Imbalance | - | - | 0.002 | - | - | - | - | - | - | -0.025 | - | - | - | - |
| | - | - | (0.011) | - | - | - | - | - | - | (0.017) | - | - | - | - |
| Average Population density | -0.059*** | -0.039** | -0.076*** | -0.072*** | -0.059*** | -0.061*** | -0.066*** | - | - | - | - | - | - | - |

| Product Supplier Variety | | | | | | | | | | | | | | |
|------------------------------------|--|---|-------------------------------|--|--|--|--|--|---|-------------------------------|--|--|--|--|
| | Long period RE (Separate concentration measures) † | Short Period RE (Separate concentration measures) † | Long period RE (Imbalance) †† | Long period RE (Separate concentration measures) † | Long period RE (Separate concentration measures) † | Long period RE (Separate concentration measures) † | Long period RE (Separate concentration measures) † | Long period FE (Separate concentration measures) † | Short Period FE (Separate concentration measures) † | Long period FE (Imbalance) †† | Long period FE (Separate concentration measures) † | Long period FE (Separate concentration measures) † | Long period FE (Separate concentration measures) † | Long period FE (Separate concentration measures) † |
| | (0.013) | (0.015) | (0.019) | (0.017) | (0.012) | (0.013) | (0.015) | - | - | - | - | - | - | - |
| Shop floor space | 0.18*** | 0.123*** | 0.177*** | 0.179*** | 0.18*** | 0.183*** | 0.185*** | 0.133*** | 0.017 | 0.123*** | 0.126*** | 0.131*** | 0.129*** | 0.129*** |
| | (0.016) | (0.024) | (0.016) | (0.016) | (0.016) | (0.016) | (0.016) | (0.038) | (0.039) | (0.037) | (0.037) | (0.037) | (0.04) | (0.036) |
| Average Population | 0.016 | 0.04 | 0.016 | 0.016 | 0.017 | 0.016 | 0.018 | - | - | - | - | - | - | - |
| | (0.023) | (0.025) | (0.025) | (0.025) | (0.023) | (0.024) | (0.025) | - | - | - | - | - | - | - |
| Unemployment | 0.012 | 0.052** | 0.03 | 0.029 | 0.012 | 0.014 | 0.039** | 0.039** | 0.063*** | 0.045** | 0.046** | 0.038** | 0.041** | 0.044** |
| | (0.017) | (0.021) | (0.019) | (0.018) | (0.017) | (0.016) | (0.019) | (0.016) | (0.019) | (0.018) | (0.018) | (0.017) | (0.016) | (0.02) |
| Regional GDP per Capita | 0.27*** | 0.184*** | 0.371*** | 0.346*** | 0.268*** | 0.286*** | 0.36*** | 0.567*** | 0.436*** | 0.626*** | 0.636*** | 0.559*** | 0.581*** | 0.601*** |
| | (0.045) | (0.057) | (0.037) | (0.039) | (0.045) | (0.045) | (0.048) | (0.061) | (0.136) | (0.052) | (0.054) | (0.061) | (0.062) | (0.066) |
| National Product Category Turnover | 0.178*** | 0.161*** | 0.213*** | 0.204*** | 0.18*** | 0.188*** | 0.214*** | 0.165*** | 0.198*** | 0.185*** | 0.185*** | 0.165*** | 0.18*** | 0.213*** |
| | (0.018) | (0.02) | (0.02) | (0.019) | (0.019) | (0.017) | (0.016) | (0.032) | (0.037) | (0.032) | (0.033) | (0.031) | (0.031) | (0.029) |
| Supermarket Dummy | -0.117*** | -0.227*** | -0.117*** | -0.118*** | -0.117*** | -0.115*** | -0.113*** | -0.052* | -0.048*** | -0.047* | -0.048* | -0.051* | -0.047* | -0.05* |
| | (0.02) | (0.041) | (0.021) | (0.021) | (0.02) | (0.02) | (0.02) | (0.026) | (0.011) | (0.026) | (0.026) | (0.026) | (0.027) | (0.026) |
| Hard Discounter | -0.943*** | -1.167*** | -0.952*** | -0.949*** | -0.943*** | -0.933*** | -0.913*** | -0.601*** | -0.617*** | -0.61*** | -0.609*** | -0.602*** | -0.599*** | -0.606*** |

| Product Supplier Variety | | | | | | | | | | | | | | |
|--------------------------|--|---|-------------------------------|--|--|--|--|--|---|-------------------------------|--|--|--|--|
| | Long period RE (Separate concentration measures) † | Short Period RE (Separate concentration measures) † | Long period RE (Imbalance) †† | Long period RE (Separate concentration measures) † | Long period RE (Separate concentration measures) † | Long period RE (Separate concentration measures) † | Long period RE (Separate concentration measures) † | Long period FE (Separate concentration measures) † | Short Period FE (Separate concentration measures) † | Long period FE (Imbalance) †† | Long period FE (Separate concentration measures) † | Long period FE (Separate concentration measures) † | Long period FE (Separate concentration measures) † | Long period FE (Separate concentration measures) † |
| Dummy | | | | | | | | | | | | | | |
| | (0.135) | (0.119) | (0.135) | (0.135) | (0.135) | (0.132) | (0.135) | (0.029) | (0.032) | (0.028) | (0.029) | (0.028) | (0.029) | (0.028) |
| New shop opening | 0.034*** | 0.011 | 0.04*** | 0.041*** | 0.034*** | 0.035*** | 0.034*** | 0.017** | -0.003 | 0.016** | 0.017** | 0.017** | 0.018** | 0.015* |
| | (0.007) | (0.015) | (0.008) | (0.008) | (0.007) | (0.007) | (0.009) | (0.007) | (0.015) | (0.007) | (0.007) | (0.007) | (0.007) | (0.007) |
| Seasonal Dummy | 0.016*** | 0.021*** | 0.016*** | 0.016*** | 0.016*** | 0.017*** | 0.014*** | 0.016*** | 0.02*** | 0.016*** | 0.016*** | 0.016*** | 0.017*** | 0.014*** |
| | (0.002) | (0.003) | (0.002) | (0.002) | (0.002) | (0.002) | (0.002) | (0.002) | (0.003) | (0.002) | (0.002) | (0.002) | (0.002) | (0.002) |
| BIC | - | - | - | - | - | - | - | - | -29445.7 | - | - | - | - | - |
| Within R ² | 0.127 | 0.029 | 0.126 | 0.259 | 0.127 | 0.115 | 0.104 | 0.132 | 0.036 | 0.132 | 0.263 | 0.132 | 0.121 | 0.109 |
| Between R ² | 0.77 | 0.758 | 0.764 | 0.819 | 0.77 | 0.77 | 0.787 | 0.293 | 0.178 | 0.285 | 0.411 | 0.283 | 0.287 | 0.364 |
| Overall R ² | 0.712 | 0.72 | 0.706 | 0.771 | 0.711 | 0.71 | 0.727 | 0.279 | 0.17 | 0.27 | 0.396 | 0.27 | 0.272 | 0.342 |
| Hausman Test | 557.61** * | 634.08** * | 1365.23** ** | 1065.95** ** | 821.51** * | 847.26** * | 773.75** * | - | - | - | - | - | - | - |
| Moran's I (Range) | (0.124 - 0.186) | (0.438 - 0.501) | (0.128 - 0.196) | (0.127 - 0.193) | (0.123 - 0.186) | (0.131 - 0.192) | (0.098 - 0.179) | (0.388 - 0.448) | (0.122 - 0.17) | (0.388 - 0.45) | (0.384 - 0.447) | (0.391 - 0.45) | (0.396 - 0.458) | (0.353 - 0.417) |

Note: All specifications use standard errors derived by clustering on consumer shopping areas and include product and country fixed effects (not reported). Standard errors are presented in parentheses in the row below each coefficient. *** indicates significant at the 1% level of significance, ** at the 5% and * at the 10%. Moran's I is calculated for each time period; the table shows the range of test statistics over the time periods, and the level of significance indicated is the average p-value across the time periods. † Separate concentration measures to refers to models including both retailer and supplier concentration measures rather than just the imbalance between the two. †† Imbalance refers to models which include only the measure of imbalance between retailer and supplier concentration measures rather than both measures

Table 42: Results - Product Price Variety

| Product Price Variety | | | | | | | | | | | | | | |
|---|--|---|-------------------------------|--|--|--|--|--|--|---|-------------------------------|--|--|--|
| | Long period RE (Separate concentration measures) † | Short Period RE (Separate concentration measures) † | Long period RE (Imbalance) †† | Long period RE (Separate concentration measures) † | Long period RE (Separate concentration measures) † | Long period RE (Separate concentration measures) † | Long period RE (Separate concentration measures) † | Long period RE (Separate concentration measures) † | Long period FE (Separate concentration measures) † | Short Period FE (Separate concentration measures) † | Long period FE (Imbalance) †† | Long period FE (Separate concentration measures) † | Long period FE (Separate concentration measures) † | Long period FE (Separate concentration measures) † |
| Local Private labels share | -0.002*** | -0.004*** | -0.003*** | -0.002*** | -0.002*** | - | -0.003*** | -0.001 | -0.002** | -0.002*** | -0.002** | -0.001 | - | -0.001* |
| | (0.001) | (0.001) | (0.001) | (0.001) | (0.001) | - | (0.001) | (0.001) | (0.001) | (0.001) | (0.001) | (0.001) | - | (0.001) |
| National Private labels share | | | - | - | - | 0.021*** | - | | | | | | 0.034*** | - |
| | | | - | - | - | (0.003) | - | | | | | | - | (0.003) |
| National retail concentration HHI (group, edible groceries) | -0.141*** | -0.099*** | - | - | -0.145*** | -0.153*** | - | -0.172*** | -0.075*** | - | - | -0.174*** | -0.189*** | - |
| | (0.009) | (0.02) | - | - | (0.009) | (0.009) | - | (0.008) | (0.024) | - | - | (0.009) | (0.009) | - |
| National retail concentration HHI (group, modern retail) | | | - | -0.31*** | - | - | - | | | | | -0.326*** | - | - |
| | | | - | (0.02) | - | - | - | | | | | (0.022) | - | - |
| Local retail concentration | | | - | - | - | - | 0.001 | | | | | - | - | 0.01 |

| Product Price Variety | | | | | | | | | | | | | | |
|---|--|---|-------------------------------|--|--|--|--|--|---|-------------------------------|--|--|--|--|
| | Long period RE (Separate concentration measures) † | Short Period RE (Separate concentration measures) † | Long period RE (Imbalance) †† | Long period RE (Separate concentration measures) † | Long period RE (Separate concentration measures) † | Long period RE (Separate concentration measures) † | Long period RE (Separate concentration measures) † | Long period FE (Separate concentration measures) † | Short Period FE (Separate concentration measures) † | Long period FE (Imbalance) †† | Long period FE (Separate concentration measures) † | Long period FE (Separate concentration measures) † | Long period FE (Separate concentration measures) † | Long period FE (Separate concentration measures) † |
| n HHI (group, floorspace) | | | | | | | | | | | | | | |
| | | | - | - | - | - | (0.013) | | | - | - | - | - | (0.02) |
| National supplier concentration n HHI (full market) | 0.024*** | 0.016*** | | 0.017*** | | 0.025*** | 0.038*** | 0.019* | -0.004 | | 0.016* | | 0.022** | 0.054*** |
| | (0.004) | (0.003) | | (0.003) | | (0.004) | (0.004) | (0.009) | (0.012) | | (0.008) | | (0.009) | (0.01) |
| National supplier concentration n HHI (brands only) | | | - | | 0.024*** | | | | | - | | 0.005 | | |
| | | | - | | (0.004) | | | | | - | | (0.006) | | |
| Imbalance | - | - | -0.065*** | - | - | - | - | - | - | -0.092*** | - | - | - | - |
| | - | - | (0.006) | - | - | - | - | - | - | (0.009) | - | - | - | - |
| Average Population density | -0.023*** | -0.004 | 0.003 | -0.013** | -0.023*** | -0.023*** | -0.016** | | | | | | | |
| | (0.005) | (0.006) | (0.01) | (0.005) | (0.005) | (0.005) | (0.006) | | | | | | | |
| Shop floor space | 0.007 | -0.015 | 0.01 | 0.006 | 0.007 | 0.006 | 0.013* | 0.047** | -0.05** | 0.061*** | 0.036* | 0.048** | 0.048** | 0.056*** |

| Product Price Variety | | | | | | | | | | | | | | |
|------------------------------------|--|---|-------------------------------|--|--|--|--|--|---|-------------------------------|--|--|--|--|
| | Long period RE (Separate concentration measures) † | Short Period RE (Separate concentration measures) † | Long period RE (Imbalance) †† | Long period RE (Separate concentration measures) † | Long period RE (Separate concentration measures) † | Long period RE (Separate concentration measures) † | Long period RE (Separate concentration measures) † | Long period FE (Separate concentration measures) † | Short Period FE (Separate concentration measures) † | Long period FE (Imbalance) †† | Long period FE (Separate concentration measures) † | Long period FE (Separate concentration measures) † | Long period FE (Separate concentration measures) † | Long period FE (Separate concentration measures) † |
| | (0.007) | (0.009) | (0.007) | (0.007) | (0.007) | (0.007) | (0.007) | (0.019) | (0.025) | (0.019) | (0.02) | (0.019) | (0.019) | (0.019) |
| Average Population | 0.025*** | 0.037*** | 0.025** | 0.025*** | 0.025*** | 0.025*** | 0.025*** | - | - | - | - | - | - | - |
| | (0.009) | (0.011) | (0.01) | (0.009) | (0.009) | (0.009) | (0.01) | - | - | - | - | - | - | - |
| Unemployment | -0.096*** | -0.105*** | -0.133*** | -0.127*** | -0.1*** | -0.101*** | -0.15*** | -0.09*** | -0.121*** | -0.14*** | -0.129*** | -0.092*** | -0.098*** | -0.158*** |
| | (0.006) | (0.008) | (0.009) | (0.006) | (0.006) | (0.006) | (0.008) | (0.006) | (0.01) | (0.008) | (0.006) | (0.006) | (0.006) | (0.008) |
| Regional GDP per Capita | 0.057** | -0.042** | -0.094** | 0 | 0.056** | 0.054** | 0.017 | 0.202*** | -0.139** | -0.113 | 0.064 | 0.205*** | 0.194*** | 0.101* |
| | (0.026) | (0.02) | (0.043) | (0.024) | (0.026) | (0.027) | (0.037) | (0.041) | (0.069) | (0.087) | (0.045) | (0.041) | (0.041) | (0.059) |
| National Product Category Turnover | -0.016** | -0.049*** | -0.056*** | -0.039*** | -0.016** | -0.016** | -0.044*** | 0.007 | -0.081*** | -0.085*** | -0.047** | 0.009 | 0.014 | -0.03 |
| | (0.007) | (0.007) | (0.008) | (0.007) | (0.006) | (0.006) | (0.007) | (0.018) | (0.026) | (0.029) | (0.019) | (0.018) | (0.018) | (0.022) |
| Supermarket Dummy | -0.031*** | -0.033** | -0.027*** | -0.025*** | -0.03*** | -0.031*** | -0.028*** | -0.043*** | -0.007 | -0.046*** | -0.034** | -0.043*** | -0.043*** | -0.044*** |
| | (0.009) | (0.013) | (0.008) | (0.009) | (0.009) | (0.009) | (0.009) | (0.014) | (0.01) | (0.013) | (0.014) | (0.014) | (0.014) | (0.014) |
| Hard Discounter Dummy | -0.031 | -0.133*** | -0.02 | -0.028 | -0.031 | -0.032 | -0.005 | 0.032** | -0.024 | 0.061*** | 0.037** | 0.034** | 0.036** | 0.071*** |
| | (0.043) | (0.038) | (0.043) | (0.043) | (0.043) | (0.044) | (0.046) | (0.014) | (0.021) | (0.014) | (0.015) | (0.014) | (0.014) | (0.015) |

| Product Price Variety | | | | | | | | | | | | | | |
|------------------------|--|---|-------------------------------|--|--|--|--|--|---|-------------------------------|--|--|--|--|
| | Long period RE (Separate concentration measures) † | Short Period RE (Separate concentration measures) † | Long period RE (Imbalance) †† | Long period RE (Separate concentration measures) † | Long period RE (Separate concentration measures) † | Long period RE (Separate concentration measures) † | Long period RE (Separate concentration measures) † | Long period FE (Separate concentration measures) † | Short Period FE (Separate concentration measures) † | Long period FE (Imbalance) †† | Long period FE (Separate concentration measures) † | Long period FE (Separate concentration measures) † | Long period FE (Separate concentration measures) † | Long period FE (Separate concentration measures) † |
| New shop opening | 0.064*** | 0.033*** | 0.045*** | 0.048*** | 0.064*** | 0.063*** | 0.052*** | 0.052*** | 0.033*** | 0.047*** | 0.04*** | 0.052*** | 0.049*** | 0.041*** |
| | (0.006) | (0.006) | (0.006) | (0.006) | (0.006) | (0.006) | (0.007) | (0.006) | (0.006) | (0.007) | (0.006) | (0.006) | (0.006) | (0.007) |
| Seasonal Dummy | -0.001 | -0.01*** | -0.001 | -0.001 | -0.001 | -0.001 | -0.001* | -0.001 | -0.01*** | -0.001 | -0.001 | -0.001 | -0.001 | -0.001* |
| | (0.001) | (0.002) | (0.001) | (0.001) | (0.001) | (0.001) | (0.001) | (0.001) | (0.002) | (0.001) | (0.001) | (0.001) | (0.001) | (0.001) |
| BIC | - | - | - | - | - | - | - | - | -37656.9 | - | - | - | - | - |
| Within R ² | 0.103 | 0.044 | 0.078 | 0.259 | 0.102 | 0.105 | 0.099 | 0.106 | 0.046 | 0.081 | 0.263 | 0.106 | 0.109 | 0.101 |
| Between R ² | 0.598 | 0.479 | 0.599 | 0.819 | 0.598 | 0.592 | 0.618 | 0.341 | 0.099 | 0.011 | 0.411 | 0.347 | 0.354 | 0.044 |
| Overall R ² | 0.491 | 0.375 | 0.487 | 0.771 | 0.492 | 0.486 | 0.507 | 0.29 | 0.084 | 0.016 | 0.396 | 0.295 | 0.3 | 0.053 |
| Hausman Test | 274.54*** | 153.41*** | 305.56*** | 259.25*** | 619.47** | 1607.44*** | 1977.38*** | - | - | - | - | - | - | - |
| Moran's I (Range) | (0.11 - 0.252) | (0.163 - 0.311) | (0.128 - 0.255) | (0.11 - 0.248) | (0.109 - 0.249) | (0.108 - 0.249) | (0.107 - 0.248) | (0.213 - 0.364) | (0.059 - 0.15) | (0.306 - 0.431) | (0.263 - 0.393) | (0.207 - 0.357) | (0.199 - 0.353) | (0.285 - 0.428) |

Note: All specifications use standard errors derived by clustering on consumer shopping areas and include product and country fixed effects (not reported). Standard errors are presented in parentheses in the row below each coefficient. *** indicates significant at the 1% level of significance, ** at the 5% and * at the 10%. Moran's I is calculated for each time period; the table shows the range of test statistics over the time periods, and the level of significance indicated is the average p-value across the time periods. † Separate concentration measures to refers to models including both retailer and supplier concentration measures rather than just the imbalance between the two. †† Imbalance refers to models which include only the measure of imbalance between retailer and supplier concentration measures rather than both measures

11.6.2. Innovation

Hypothesis: Innovation has increased due to consolidation of suppliers and producer organisations

The relationship between supplier concentration and innovation is more often negative than positive for many of the measures of innovation, which contradicts this hypothesis, although evidence of large positive effects is found for new packaging.

Hypothesis: Retail concentration at procurement level does not appear to have had a noticeable effect on the innovation evolution (number and type)

The results for this hypothesis are mixed and vary by model and measure of innovation and no consistent result emerges to indicate that retail concentration influences innovation evolution in any conclusive way.

Hypothesis: Shop type has strongly impacted the level and evolution of innovation.

The evidence supports this hypothesis for all measures of innovation. As found for the choice indicators above, supermarkets and hard discounters are found to have fewer innovative products in comparison to the base category hypermarkets and hard discounters have fewer than supermarkets. The negative hard discounter impact is much larger for innovation than for choice.

Hypothesis: The economic crisis has negatively impacted the evolution of innovation in terms of new EANs (Opus innovations)

Some evidence in support of our hypothesis is found for most of the measures of innovation using unemployment as a proxy for the economic crisis. Nevertheless, the effect on new formulation is only significant in the short period and new packaging finds a positive effect. The exception to this is new packaging which reports a positive effect for all specifications (except the short period) suggesting that retailers may favour incremental innovations in packaging as opposed to introducing entirely new products during periods of economic crisis.

Another measure of the economic crisis is the measure of Retailer expectations which reflects the forward-looking business sentiment among retailers. For Opus innovations, new formulation, new packaging and new range extensions, this is found to be broadly positive, so that stronger expectations are associated with more innovation, although for some measures it is insignificant.

Hypothesis: National product category turnover appears to have an impact on the evolution of choice in all its components

There is evidence to support this hypothesis although the results for fixed effects models varies in statistical significance and sign. In contrast, the random effects models provide evidence of statistically significant positive effect on all measures of innovation. This suggests that national product category turnover, which can be conceptualised as market size, allows greater opportunities for innovation although when unobservable fixed effects are controlled for, robust evidence is only found for new packaging, new products and new formulation. This relationship turns negative for new products and new formulation in the short period.

Hypothesis: Measure of imbalance at procurement level is a driver of the evolution of the number and type of innovations

The imbalance between retailer and supplier concentrations is found to increase innovation for Opus innovations and new products. In contrast the imbalance is found to decrease innovation for new packaging, new formulation and new range extensions.

Hypothesis: Average population size, average population density, average GDP per capita and new shop opening are drivers of the evolution of the number and type of innovations

The evidence for the effect of average (over time) population is weak and mostly insignificant for the measures of innovation. Average (over time) population density is also mostly insignificant except for some evidence of a negative effect for new formulations and new packaging. Average GDP per capita is also mostly insignificant but is positive for the models where average population density is negative in new packaging.

The evidence for an effect of new shop opening is weak and mostly insignificant but is positive where it is statistically significant and the strongest evidence of an effect is found for new products or new range extensions.

Hypothesis: The growing emergence of private labels, in part due to the increased presence of discount stores appears to have played a role in the evolution of innovation

Some evidence is found in the random effects models to suggest a small positive relationship between measures of innovation and the local share of private labels, but the evidence is less strong in the fixed effects models.

Table 43: Results - Opus Innovations

| Opus Innovations | | | | | | | | | | | | | | |
|---|--|---|-------------------------------|--|--|--|--|--|---|-------------------------------|--|--|--|--|
| | Long period RE (Separate concentration measures) † | Short Period RE (Separate concentration measures) † | Long period RE (Imbalance) †† | Long period RE (Separate concentration measures) † | Long period RE (Separate concentration measures) † | Long period RE (Separate concentration measures) † | Long period RE (Separate concentration measures) † | Long period FE (Separate concentration measures) † | Short Period FE (Separate concentration measures) † | Long period FE (Imbalance) †† | Long period FE (Separate concentration measures) † | Long period FE (Separate concentration measures) † | Long period FE (Separate concentration measures) † | Long period FE (Separate concentration measures) † |
| Local Private labels share | 0.061*** | 0.054*** | 0.06*** | 0.057*** | 0.06*** | - | 0.072*** | 0.055** | 0.007 | 0.059** | 0.051** | 0.055** | - | 0.066** |
| | (0.018) | (0.021) | (0.018) | (0.018) | (0.018) | - | (0.025) | (0.024) | (0.019) | (0.023) | (0.024) | (0.024) | - | (0.03) |
| National Private labels share | | | - | - | - | -0.07 | - | | | | | | 0.632*** | - |
| | | | - | - | - | (0.054) | - | | | | | | (0.224) | - |
| National retail concentration HHI (group, edible groceries) | -0.009 | 1.005** | - | - | 0.019 | 0.087 | - | 0.3* | 1.673*** | - | - | 0.382** | 0.073 | - |
| | (0.152) | (0.416) | - | - | (0.152) | (0.148) | - | (0.169) | (0.4) | - | - | (0.177) | (0.17) | - |
| National retail concentration HHI (group, modern retail) | | | - | 2.136*** | - | - | - | | | | 2.602*** | - | - | - |
| | | | - | (0.627) | - | - | - | | | | (0.618) | - | - | - |

| Opus Innovations | | | | | | | | | | | | | | |
|--|--|---|-------------------------------|--|--|--|--|--|---|-------------------------------|--|--|--|--|
| | Long period RE (Separate concentration measures) † | Short Period RE (Separate concentration measures) † | Long period RE (Imbalance) †† | Long period RE (Separate concentration measures) † | Long period RE (Separate concentration measures) † | Long period RE (Separate concentration measures) † | Long period RE (Separate concentration measures) † | Long period FE (Separate concentration measures) † | Short Period FE (Separate concentration measures) † | Long period FE (Imbalance) †† | Long period FE (Separate concentration measures) † | Long period FE (Separate concentration measures) † | Long period FE (Separate concentration measures) † | Long period FE (Separate concentration measures) † |
| Local retail concentration HHI (group, floorspace) | | | | - | - | - | - | -0.197 | | | - | - | - | - |
| | | | | - | - | - | - | (0.149) | | | - | - | - | (0.551) |
| National supplier concentration HHI (full market) | -0.096** | -0.039 | | - | -0.088* | | -0.109** | 0.007 | -0.484** | -0.074 | | - | -0.3 | -0.303 |
| | (0.044) | (0.058) | | - | (0.048) | | (0.046) | (0.045) | (0.23) | (0.436) | | - | (0.222) | (0.207) |
| National supplier concentration HHI (brands only) | | | | - | | | | | | | | | | |
| | | | | - | | | | | | | | | | |
| Average Population density | -0.029 | -0.034 | -0.029 | -0.02 | -0.03 | -0.04 | -0.012 | | | | | | | |
| | (0.047) | (0.075) | (0.047) | (0.048) | (0.047) | (0.045) | (0.047) | | | | | | | |
| Imbalance | | | 0.245*** | | | | | | | | 1.213*** | | | |
| | | | (0.047) | | | | | | | | (0.278) | | | |

| Opus Innovations | | | | | | | | | | | | | | |
|------------------------------------|--|---|-------------------------------|--|--|--|--|--|---|-------------------------------|--|--|--|--|
| | Long period RE (Separate concentration measures) † | Short Period RE (Separate concentration measures) † | Long period RE (Imbalance) †† | Long period RE (Separate concentration measures) † | Long period RE (Separate concentration measures) † | Long period RE (Separate concentration measures) † | Long period RE (Separate concentration measures) † | Long period FE (Separate concentration measures) † | Short Period FE (Separate concentration measures) † | Long period FE (Imbalance) †† | Long period FE (Separate concentration measures) † | Long period FE (Separate concentration measures) † | Long period FE (Separate concentration measures) † | Long period FE (Separate concentration measures) † |
| Shop floor space | 0.853*** | 0.744*** | 0.853*** | 0.863*** | 0.853*** | 0.865*** | 0.893*** | 0.247 | 0.857* | 0.325 | 0.384 | 0.245 | 0.203 | 0.268 |
| | (0.102) | (0.096) | (0.101) | (0.102) | (0.102) | (0.103) | (0.107) | (0.423) | (0.49) | (0.416) | (0.405) | (0.423) | (0.433) | (0.443) |
| Average Population | -0.044 | 0.156 | -0.043 | -0.038 | -0.044 | -0.042 | -0.039 | - | - | - | - | - | - | - |
| | (0.093) | (0.123) | (0.093) | (0.094) | (0.092) | (0.092) | (0.093) | - | - | - | - | - | - | - |
| Unemployment | -0.619*** | -0.39 | -0.599*** | -0.637*** | -0.606*** | -0.607*** | -0.719*** | -0.755*** | -1.903*** | -0.578** | -0.693*** | -0.693*** | -0.847*** | -0.874*** |
| | (0.195) | (0.343) | (0.206) | (0.193) | (0.195) | (0.195) | (0.225) | (0.23) | (0.578) | (0.258) | (0.224) | (0.249) | (0.202) | (0.289) |
| Average regional GDP per capita | 0.007 | -0.063 | 0.014 | -0.014 | 0.012 | 0.088 | -0.031 | - | - | - | - | - | - | - |
| | (0.156) | (0.273) | (0.155) | (0.156) | (0.155) | (0.144) | (0.221) | - | - | - | - | - | - | - |
| National Product Category Turnover | 0.666*** | 0.705*** | 0.613*** | 0.649*** | 0.642*** | 0.682*** | 0.921*** | -0.614* | 0.927 | -0.451 | -0.822** | -0.674* | -0.391 | 0.06 |
| | (0.062) | (0.075) | (0.065) | (0.066) | (0.064) | (0.062) | (0.047) | (0.339) | (0.744) | (0.3) | (0.345) | (0.345) | (0.351) | (0.336) |
| Supermarket Dummy | -0.613*** | -0.734*** | -0.616*** | -0.612*** | -0.615*** | -0.617*** | -0.575*** | -0.2 | -0.819* | -0.273 | -0.305 | -0.205 | -0.192 | -0.19 |
| | (0.134) | (0.153) | (0.132) | (0.132) | (0.134) | (0.136) | (0.135) | (0.401) | (0.431) | (0.41) | (0.404) | (0.403) | (0.394) | (0.388) |
| Hard Discounter Dummy | -2.193*** | -2.261*** | -2.191*** | -2.163*** | -2.192*** | -2.153*** | -2.27*** | -1.502*** | -0.786 | -1.509*** | -1.302*** | -1.533*** | -1.476*** | -1.412*** |

| Opus Innovations | | | | | | | | | | | | | | |
|------------------------|--|---|-------------------------------|--|--|--|--|--|---|-------------------------------|--|--|--|--|
| | Long period RE (Separate concentration measures) † | Short Period RE (Separate concentration measures) † | Long period RE (Imbalance) †† | Long period RE (Separate concentration measures) † | Long period RE (Separate concentration measures) † | Long period RE (Separate concentration measures) † | Long period RE (Separate concentration measures) † | Long period FE (Separate concentration measures) † | Short Period FE (Separate concentration measures) † | Long period FE (Imbalance) †† | Long period FE (Separate concentration measures) † | Long period FE (Separate concentration measures) † | Long period FE (Separate concentration measures) † | Long period FE (Separate concentration measures) † |
| | (0.329) | (0.362) | (0.327) | (0.327) | (0.329) | (0.33) | (0.361) | (0.438) | (0.722) | (0.433) | (0.439) | (0.445) | (0.435) | (0.451) |
| New shop opening | 0.191 | 0.213 | 0.174 | -0.003 | 0.188 | 0.182 | 0.14 | 0.064 | -0.245 | 0.059 | -0.127 | 0.051 | 0.067 | 0.007 |
| | (0.13) | (0.162) | (0.118) | (0.123) | (0.129) | (0.129) | (0.123) | (0.173) | (0.313) | (0.162) | (0.174) | (0.172) | (0.176) | (0.191) |
| Retailer Expectations | 1.335*** | -1.141*** | 1.321*** | 1.385*** | 1.328*** | 1.306*** | 1.43*** | 1.138*** | 2.544*** | 1.063*** | 1.097*** | 1.12*** | 1.169*** | 1.222*** |
| | (0.272) | (0.326) | (0.284) | (0.279) | (0.272) | (0.272) | (0.291) | (0.272) | (0.456) | (0.277) | (0.275) | (0.273) | (0.275) | (0.294) |
| Seasonal Dummy | -3.209*** | -3.424*** | -3.21*** | -3.205*** | -3.209*** | -3.208*** | -3.252*** | -3.222*** | -3.431*** | -3.227*** | -3.224*** | -3.223*** | -3.217*** | -3.267*** |
| | (0.084) | (0.098) | (0.084) | (0.084) | (0.084) | (0.084) | (0.095) | (0.083) | (0.098) | (0.083) | (0.083) | (0.083) | (0.083) | (0.096) |
| BIC | - | - | - | - | - | - | - | 257823.3 | 142908.6 | 257757.6 | 16281.7 | 257826.7 | 257828.5 | 237031.2 |
| Within R ² | 0.23 | 0.285 | 0.23 | 0.189 | 0.23 | 0.229 | 0.235 | 0.231 | 0.287 | 0.232 | 0.191 | 0.231 | 0.231 | 0.236 |
| Between R ² | 0.604 | 0.486 | 0.604 | 0.823 | 0.604 | 0.601 | 0.636 | 0.037 | 0.143 | 0.044 | 0.128 | 0.045 | 0.014 | 0.076 |
| Overall R ² | 0.352 | 0.369 | 0.352 | 0.45 | 0.352 | 0.35 | 0.364 | 0.161 | 0.198 | 0.161 | 0.035 | 0.166 | 0.14 | 0.183 |
| Hausman Test | 127.19*** | 121.03*** | 122.1*** | 112.46*** | 87.23*** | 120.3*** | 104.8*** | - | - | - | - | - | - | - |
| Moran's I (Range) | (0.051 - 0.171) | (0.056 - 0.146) | (0.05 - 0.169) | (0.052 - 0.161) | (0.05 - 0.17) | (0.05 - 0.171) | (0.048 - 0.166) | (0.154 - 0.364) | (0.167 - 0.378) | (0.151 - 0.362) | (0.171 - 0.365) | (0.155 - 0.366) | (0.162 - 0.374) | (0.134 - 0.325) |

Note: All specifications use standard errors derived by clustering on consumer shopping areas and include product and country fixed effects (not reported). Standard errors are presented in parentheses in the row below each coefficient. *** indicates significant at the 1% level of significance, ** at the 5% and * at the 10%. Moran's I is calculated for each time period; the table shows the range of test statistics over the time periods, and the level of significance indicated is the average p-value across the time periods. † Separate concentration measures to refers to models including both retailer and supplier concentration measures rather than just the

imbalance between the two. †† Imbalance refers to models which include only the measure of imbalance between retailer and supplier concentration measures rather than both measures

Table 44: Results - New Products

| New Products | | | | | | | | | | | | | | |
|---|--|---|-------------------------------|--|--|--|--|--|--|---|-------------------------------|--|--|--|
| | Long period RE (Separate concentration measures) † | Short Period RE (Separate concentration measures) † | Long period RE (Imbalance) †† | Long period RE (Separate concentration measures) † | Long period RE (Separate concentration measures) † | Long period RE (Separate concentration measures) † | Long period RE (Separate concentration measures) † | Long period RE (Separate concentration measures) † | Long period FE (Separate concentration measures) † | Short Period FE (Separate concentration measures) † | Long period FE (Imbalance) †† | Long period FE (Separate concentration measures) † | Long period FE (Separate concentration measures) † | Long period FE (Separate concentration measures) † |
| Local Private labels share | 0.03* | 0.043*** | 0.03* | 0.028* | 0.031* | - | 0.056*** | 0.006 | 0.03* | 0.006 | 0.003 | 0.004 | - | 0.024 |
| | (0.017) | (0.016) | (0.017) | (0.017) | (0.017) | - | (0.02) | (0.017) | (0.016) | (0.018) | (0.017) | (0.017) | - | (0.018) |
| National Private labels share | | | - | - | - | -0.036 | - | | | | | | - | - |
| | | | - | - | - | (0.048) | - | | | | | | - | (0.29) |
| National retail concentration HHI (group, edible groceries) | -0.002 | 0.329 | - | - | 0.053 | 0.047 | - | 0.08 | 1.286** | - | - | 0.162 | 0.177 | - |
| | (0.205) | (0.565) | - | - | (0.211) | (0.213) | - | (0.232) | (0.585) | - | - | (0.236) | (0.267) | - |
| National retail concentration HHI (group, modern retail) | | | - | 1.658** | - | - | - | | | | 1.693** | - | - | - |
| | | | - | (0.725) | - | - | - | | | | (0.759) | - | - | - |
| Local retail concentration | | | - | - | - | - | -0.301 | | | | - | - | - | -0.531 |

| New Products | | | | | | | | | | | | | | |
|---|--|---|-------------------------------|--|--|--|--|--|---|-------------------------------|--|--|--|--|
| | Long period RE (Separate concentration measures) † | Short Period RE (Separate concentration measures) † | Long period RE (Imbalance) †† | Long period RE (Separate concentration measures) † | Long period RE (Separate concentration measures) † | Long period RE (Separate concentration measures) † | Long period RE (Separate concentration measures) † | Long period FE (Separate concentration measures) † | Short Period FE (Separate concentration measures) † | Long period FE (Imbalance) †† | Long period FE (Separate concentration measures) † | Long period FE (Separate concentration measures) † | Long period FE (Separate concentration measures) † | Long period FE (Separate concentration measures) † |
| n HHI (group, edible groceries) | | | | | | | | | | | | | | |
| | | | - | - | - | - | (0.189) | | | - | - | - | - | (0.574) |
| National supplier concentration n HHI (full market) | -0.38*** | -0.435*** | | -0.374*** | | -0.387*** | -0.259*** | -0.811*** | 0.313 | | -0.677** | | -0.845*** | -0.511** |
| | (0.057) | (0.066) | - | (0.059) | | (0.057) | (0.059) | (0.239) | (0.604) | - | (0.251) | | (0.219) | (0.227) |
| National supplier concentration n HHI (brands only) | | | | | | -0.358*** | | | | | | | -0.346 | |
| | | | | | | (0.054) | | | | | | | (0.348) | |
| Average Population density | -0.054 | -0.069 | -0.054 | -0.047 | -0.054 | -0.059 | -0.027 | | | | | | | |
| | (0.068) | (0.079) | (0.068) | (0.069) | (0.068) | (0.068) | (0.069) | | | | | | | |
| Imbalance | | | 0.405*** | | | | | | | | 0.877*** | | | |
| | | | (0.053) | | | | | | | | (0.303) | | | |
| Shop floor space | 1.339*** | 1.237*** | 1.338*** | 1.346*** | 1.337*** | 1.345*** | 1.422*** | 0.291 | 0.62 | 0.331 | 0.39 | 0.262 | 0.288 | 0.289 |

| New Products | | | | | | | | | | | | | | |
|------------------------------------|--|---|-------------------------------|--|--|--|--|--|---|-------------------------------|--|--|--|--|
| | Long period RE (Separate concentration measures) † | Short Period RE (Separate concentration measures) † | Long period RE (Imbalance) †† | Long period RE (Separate concentration measures) † | Long period RE (Separate concentration measures) † | Long period RE (Separate concentration measures) † | Long period RE (Separate concentration measures) † | Long period FE (Separate concentration measures) † | Short Period FE (Separate concentration measures) † | Long period FE (Imbalance) †† | Long period FE (Separate concentration measures) † | Long period FE (Separate concentration measures) † | Long period FE (Separate concentration measures) † | Long period FE (Separate concentration measures) † |
| | (0.114) | (0.126) | (0.112) | (0.113) | (0.113) | (0.114) | (0.117) | (0.37) | (0.552) | (0.367) | (0.357) | (0.373) | (0.368) | (0.395) |
| Average Population | 0.053 | 0.195 | 0.054 | 0.057 | 0.053 | 0.054 | 0.053 | - | - | - | - | - | - | - |
| | (0.124) | (0.136) | (0.123) | (0.124) | (0.123) | (0.124) | (0.127) | - | - | - | - | - | - | - |
| Unemployment | -1.054*** | -1.049*** | -1.011*** | -1.066*** | -1.02*** | -1.05*** | -1.196*** | -1.385*** | -3.038*** | -1.24*** | -1.363*** | -1.303*** | -1.343*** | -1.794*** |
| | (0.172) | (0.329) | (0.173) | (0.164) | (0.173) | (0.171) | (0.191) | (0.229) | (0.655) | (0.251) | (0.222) | (0.251) | (0.206) | (0.3) |
| Average regional GDP per capita | -0.017 | -0.07 | -0.003 | -0.033 | -0.006 | 0.023 | -0.085 | - | - | - | - | - | - | - |
| | (0.232) | (0.269) | (0.232) | (0.233) | (0.23) | (0.226) | (0.307) | - | - | - | - | - | - | - |
| National Product Category Turnover | 0.676*** | 0.654*** | 0.673*** | 0.665*** | 0.691*** | 0.684*** | 0.852*** | 1.397*** | -1.82** | 1.351** | 1.148** | 1.301** | 1.329*** | 3.001*** |
| | (0.072) | (0.101) | (0.07) | (0.076) | (0.068) | (0.073) | (0.071) | (0.501) | (0.775) | (0.564) | (0.559) | (0.506) | (0.476) | (0.512) |
| Supermarket Dummy | -1.046*** | -0.919*** | -1.051*** | -1.045*** | -1.049*** | -1.047*** | -0.944*** | -0.581 | 0.305 | -0.626 | -0.653 | -0.573 | -0.583 | -0.521 |
| | (0.146) | (0.192) | (0.145) | (0.147) | (0.146) | (0.148) | (0.145) | (0.412) | (0.887) | (0.423) | (0.414) | (0.416) | (0.412) | (0.393) |
| Hard Discounter Dummy | -4.029*** | -4.413*** | -4.028*** | -4.008*** | -4.03*** | -4.009*** | -3.733*** | -5.92*** | -3.969*** | -5.933*** | -5.757*** | -5.984*** | -5.942*** | -5.717*** |
| | (0.332) | (0.33) | (0.328) | (0.332) | (0.332) | (0.334) | (0.339) | (0.425) | (0.956) | (0.41) | (0.43) | (0.431) | (0.422) | (0.411) |

| New Products | | | | | | | | | | | | | | | |
|------------------------|--|---|-------------------------------|--|--|--|--|--|--|---|-------------------------------|--|--|--|----------|
| | Long period RE (Separate concentration measures) † | Short Period RE (Separate concentration measures) † | Long period RE (Imbalance) †† | Long period RE (Separate concentration measures) † | Long period RE (Separate concentration measures) † | Long period RE (Separate concentration measures) † | Long period RE (Separate concentration measures) † | Long period RE (Separate concentration measures) † | Long period FE (Separate concentration measures) † | Short Period FE (Separate concentration measures) † | Long period FE (Imbalance) †† | Long period FE (Separate concentration measures) † | Long period FE (Separate concentration measures) † | Long period FE (Separate concentration measures) † | |
| New shop opening | 0.383*** | 0.298* | 0.353*** | 0.238** | 0.374*** | 0.378*** | 0.28** | 0.265* | -0.147 | 0.216* | 0.105 | 0.245 | 0.261 | 0.143 | |
| | (0.13) | (0.18) | (0.102) | (0.121) | (0.13) | (0.129) | (0.129) | (0.157) | (0.26) | (0.124) | (0.155) | (0.157) | (0.157) | (0.149) | |
| Retailer Expectations | -0.47* | -2.851*** | -0.49* | -0.432 | -0.481* | -0.486* | -0.353 | -0.54* | 0.164 | -0.594** | -0.558** | -0.562** | -0.559** | -0.3 | |
| | (0.277) | (0.315) | (0.289) | (0.283) | (0.278) | (0.277) | (0.288) | (0.271) | (0.54) | (0.277) | (0.272) | (0.276) | (0.267) | (0.28) | |
| Seasonal Dummy | -6.164*** | -5.974*** | -6.165*** | -6.161*** | -6.164*** | -6.163*** | -6.237*** | -6.167*** | -5.989*** | -6.171*** | -6.168*** | -6.169*** | -6.168*** | -6.232*** | |
| | (0.089) | (0.147) | (0.09) | (0.09) | (0.089) | (0.089) | (0.095) | (0.089) | (0.145) | (0.09) | (0.09) | (0.089) | (0.09) | (0.096) | |
| BIC | - | - | - | - | - | - | - | - | 294419.4 | 164024.6 | 294405.8 | 16281.7 | 294434 | 294418.3 | 269778.6 |
| Within R ² | 0.332 | 0.355 | 0.332 | 0.189 | 0.332 | 0.332 | 0.341 | 0.333 | 0.357 | 0.333 | 0.191 | 0.332 | 0.333 | 0.342 | |
| Between R ² | 0.652 | 0.542 | 0.652 | 0.823 | 0.652 | 0.651 | 0.666 | 0.22 | 0.023 | 0.24 | 0.128 | 0.247 | 0.23 | 0.173 | |
| Overall R ² | 0.424 | 0.426 | 0.424 | 0.45 | 0.424 | 0.424 | 0.431 | 0.282 | 0.174 | 0.291 | 0.035 | 0.296 | 0.287 | 0.229 | |
| Hausman Test | 3492.47*** | 188.76*** | 76.62*** | 78.04*** | 72.49*** | 71.07*** | 104.8*** | - | - | - | - | - | - | - | |
| Moran's I (Range) | (0.083 - 0.189) | (0.07 - 0.11) | (0.083 - 0.188) | (0.08 - 0.181) | (0.084 - 0.189) | (0.084 - 0.19) | (0.062 - 0.191) | (0.133 - 0.246) | (0.231 - 0.32) | (0.124 - 0.24) | (0.121 - 0.238) | (0.104 - 0.222) | (0.126 - 0.242) | (0.187 - 0.273) | |

Note: All specifications use standard errors derived by clustering on consumer shopping areas and include product and country fixed effects (not reported). Standard errors are presented in parentheses in the row below each coefficient. *** indicates significant at the 1% level of significance, ** at the 5% and * at the 10%. Moran's I is calculated for each time period; the table shows the range of test statistics over the time periods, and the level of significance indicated is the average p-value across the time periods. † Separate concentration measures to refers to models including both retailer and supplier concentration measures rather than just the imbalance between the two. †† Imbalance refers to models which include only the measure of imbalance between retailer and supplier concentration measures rather than both measures

Table 45: Results - New Packaging

| New Packaging | | | | | | | | | | | | | | |
|--|--|---|-------------------------------|--|--|--|--|--|---|-------------------------------|--|--|--|--|
| | Long period RE (Separate concentration measures) † | Short Period RE (Separate concentration measures) † | Long period RE (Imbalance) †† | Long period RE (Separate concentration measures) † | Long period RE (Separate concentration measures) † | Long period RE (Separate concentration measures) † | Long period RE (Separate concentration measures) † | Long period FE (Separate concentration measures) † | Short Period FE (Separate concentration measures) † | Long period FE (Imbalance) †† | Long period FE (Separate concentration measures) † | Long period FE (Separate concentration measures) † | Long period FE (Separate concentration measures) † | Long period FE (Separate concentration measures) † |
| Local Private labels share | 0.046** | 0.027* | 0.05*** | 0.056*** | 0.045** | - | 0.069*** | 0.001 | -0.011 | -0.003 | 0.011 | 0.004 | - | 0.041 |
| | (0.018) | (0.016) | (0.018) | (0.018) | (0.018) | - | (0.021) | (0.029) | (0.02) | (0.028) | (0.027) | (0.03) | - | (0.039) |
| National Private labels share | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |
| National retail concentration HHI (group, edible groceries) | 0.7** | -0.276 | | | 0.644** | 0.845*** | | -0.506* | -0.407 | | | -1.023*** | -0.49 | |
| | (0.28) | (0.434) | | | (0.27) | (0.28) | | (0.292) | (0.451) | | | (0.273) | (0.33) | |
| National retail concentration HHI (group, modern retail) | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |
| Local retail concentration HHI (group, floorspace) | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |
| National retail concentration | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |

| New Packaging | | | | | | | | | | | | | | |
|---|--|---|-------------------------------|--|--|--|--|--|---|-------------------------------|--|--|--|--|
| | Long period RE (Separate concentration measures) † | Short Period RE (Separate concentration measures) † | Long period RE (Imbalance) †† | Long period RE (Separate concentration measures) † | Long period RE (Separate concentration measures) † | Long period RE (Separate concentration measures) † | Long period RE (Separate concentration measures) † | Long period FE (Separate concentration measures) † | Short Period FE (Separate concentration measures) † | Long period FE (Imbalance) †† | Long period FE (Separate concentration measures) † | Long period FE (Separate concentration measures) † | Long period FE (Separate concentration measures) † | Long period FE (Separate concentration measures) † |
| HHI (group, edible groceries) | | | | | | | | | | | | | | |
| National supplier concentration HHI (full market) | 0.514*** | 0.455*** | - | 0.506*** | | 0.496*** | 0.601*** | 2.866*** | -0.248 | - | 2.44*** | | 2.86*** | 3.161*** |
| | (0.068) | (0.088) | | (0.071) | | (0.069) | (0.082) | (0.255) | (0.73) | | (0.208) | | (0.247) | (0.242) |
| National supplier concentration HHI (brands only) | | | | | 0.382*** | | | | | | | 3.141*** | | |
| | | | | | (0.06) | | | | | | | (0.381) | | |
| Average Population density | -0.178*** | -0.113 | -0.191*** | -0.21*** | -0.177*** | -0.187*** | -0.188*** | - | - | - | - | - | - | - |
| | (0.069) | (0.088) | (0.068) | (0.066) | (0.068) | (0.069) | (0.072) | | | | | | | |
| Imbalance | | | -0.564*** | - | - | - | - | - | - | -4.312*** | - | - | - | - |
| | | | (0.073) | | | | | | | (0.457) | | | | |
| Shop floor space | 1.055*** | 0.822*** | 1.043*** | 1.022*** | 1.058*** | 1.063*** | 1.131*** | 2.978*** | 1.865*** | 2.721*** | 2.66*** | 2.973*** | 2.977*** | 3.03*** |
| | (0.112) | (0.104) | (0.11) | (0.109) | (0.112) | (0.113) | (0.12) | (0.646) | (0.6) | (0.603) | (0.612) | (0.635) | (0.654) | (0.614) |
| Average | 0.063 | 0.24* | 0.057 | 0.047 | 0.063 | 0.065 | 0.061 | - | - | - | - | - | - | - |

| New Packaging | | | | | | | | | | | | | | |
|------------------------------------|--|---|-------------------------------|--|--|--|--|--|---|-------------------------------|--|--|--|--|
| | Long period RE (Separate concentration measures) † | Short Period RE (Separate concentration measures) † | Long period RE (Imbalance) †† | Long period RE (Separate concentration measures) † | Long period RE (Separate concentration measures) † | Long period RE (Separate concentration measures) † | Long period RE (Separate concentration measures) † | Long period FE (Separate concentration measures) † | Short Period FE (Separate concentration measures) † | Long period FE (Imbalance) †† | Long period FE (Separate concentration measures) † | Long period FE (Separate concentration measures) † | Long period FE (Separate concentration measures) † | Long period FE (Separate concentration measures) † |
| Population | | | | | | | | | | | | | | |
| | (0.125) | (0.128) | (0.124) | (0.125) | (0.124) | (0.126) | (0.125) | - | - | - | - | - | - | - |
| Unemployment | 1.803*** | -0.156 | 1.864*** | 1.957*** | 1.763*** | 1.834*** | 1.882*** | 2.609*** | -0.008 | 1.974*** | 2.495*** | 2.223*** | 2.615*** | 2.036*** |
| | (0.25) | (0.295) | (0.23) | (0.238) | (0.249) | (0.258) | (0.243) | (0.225) | (0.735) | (0.227) | (0.199) | (0.242) | (0.223) | (0.225) |
| Average regional GDP per capita | 1.001** | 0.193 | 1.043*** | 1.105*** | 0.988** | 1.07*** | 1.236** | - | - | - | - | - | - | - |
| | (0.396) | (0.259) | (0.399) | (0.407) | (0.392) | (0.406) | (0.616) | - | - | - | - | - | - | - |
| National Product Category Turnover | 1.964*** | 1.61*** | 2.007*** | 2.029*** | 1.908*** | 1.982*** | 2.594*** | 8.231*** | 3.322** | 8.274*** | 8.848*** | 8.587*** | 8.22*** | 9.529*** |
| | (0.131) | (0.148) | (0.14) | (0.125) | (0.136) | (0.129) | (0.14) | (0.686) | (1.367) | (0.632) | (0.665) | (0.72) | (0.705) | (0.769) |
| Supermarket Dummy | -1.325*** | -1.137*** | -1.337*** | -1.347*** | -1.322*** | -1.33*** | -1.36*** | -1.927*** | -0.862* | -1.682*** | -1.691*** | -1.887*** | -1.928*** | -1.854*** |
| | (0.168) | (0.167) | (0.166) | (0.165) | (0.168) | (0.173) | (0.164) | (0.431) | (0.467) | (0.394) | (0.398) | (0.421) | (0.431) | (0.385) |
| Hard Discounter Dummy | -3.326*** | -3.385*** | -3.371*** | -3.429*** | -3.325*** | -3.3*** | -3.466*** | -4.144*** | -2.475*** | -4.165*** | -4.63*** | -3.968*** | -4.148*** | -3.835*** |
| | (0.49) | (0.437) | (0.489) | (0.492) | (0.489) | (0.488) | (0.554) | (0.662) | (0.844) | (0.551) | (0.576) | (0.643) | (0.671) | (0.588) |
| New shop opening | -0.363 | 0.198 | -0.149 | 0.208 | -0.352 | -0.373 | 0.007 | -0.225 | -0.12 | -0.029 | 0.246 | -0.147 | -0.226 | 0.025 |

| New Packaging | | | | | | | | | | | | | | |
|------------------------|--|---|-------------------------------|--|--|--|--|--|---|-------------------------------|--|--|--|--|
| | Long period RE (Separate concentration measures) † | Short Period RE (Separate concentration measures) † | Long period RE (Imbalance) †† | Long period RE (Separate concentration measures) † | Long period RE (Separate concentration measures) † | Long period RE (Separate concentration measures) † | Long period RE (Separate concentration measures) † | Long period FE (Separate concentration measures) † | Short Period FE (Separate concentration measures) † | Long period FE (Imbalance) †† | Long period FE (Separate concentration measures) † | Long period FE (Separate concentration measures) † | Long period FE (Separate concentration measures) † | Long period FE (Separate concentration measures) † |
| | (0.23) | (0.239) | (0.174) | (0.199) | (0.23) | (0.229) | (0.237) | (0.244) | (0.384) | (0.173) | (0.209) | (0.242) | (0.242) | (0.24) |
| Retailer Expectations | -0.081 | 1.197*** | -0.224 | -0.358 | -0.073 | -0.114 | -0.314 | 0.844*** | 1.49*** | 1.089*** | 0.922*** | 0.952*** | 0.841*** | 1.014*** |
| | (0.28) | (0.328) | (0.277) | (0.277) | (0.277) | (0.281) | (0.274) | (0.28) | (0.523) | (0.262) | (0.275) | (0.265) | (0.284) | (0.26) |
| Seasonal Dummy | -4.343*** | -4.333*** | -4.352*** | -4.362*** | -4.342*** | -4.343*** | -4.482*** | -4.277*** | -4.329*** | -4.261*** | -4.273*** | -4.27*** | -4.278*** | -4.384*** |
| | (0.063) | (0.084) | (0.061) | (0.06) | (0.063) | (0.063) | (0.069) | (0.062) | (0.085) | (0.06) | (0.06) | (0.061) | (0.062) | (0.069) |
| BIC | - | - | - | - | - | - | - | 297005.9 | 161126.5 | 296747.9 | 16281.7 | 297029.3 | 297005.8 | 271944.2 |
| Within R ² | 0.21 | 0.242 | 0.211 | 0.189 | 0.21 | 0.211 | 0.225 | 0.222 | 0.243 | 0.225 | 0.191 | 0.221 | 0.222 | 0.239 |
| Between R ² | 0.701 | 0.699 | 0.699 | 0.823 | 0.701 | 0.701 | 0.676 | 0.5 | 0.451 | 0.491 | 0.128 | 0.49 | 0.5 | 0.477 |
| Overall R ² | 0.391 | 0.478 | 0.39 | 0.45 | 0.391 | 0.391 | 0.381 | 0.258 | 0.338 | 0.257 | 0.035 | 0.253 | 0.258 | 0.237 |
| Hausman Test | 6447.77*** | 285.50*** | 1187.67*** | 1050.96*** | 950.04** | 951.66*** | 1101.45*** | - | - | - | - | - | - | - |
| Moran's I (Range) | (0.125 - 0.263) | (0.12 - 0.192) | (0.126 - 0.266) | (0.124 - 0.274) | (0.128 - 0.265) | (0.123 - 0.263) | (0.103 - 0.255) | (0.123 - 0.266) | (0.195 - 0.357) | (0.366 - 0.5) | (0.381 - 0.499) | (0.371 - 0.499) | (0.361 - 0.493) | (0.373 - 0.491) |

Note: All specifications use standard errors derived by clustering on consumer shopping areas and include time, product and country fixed effects (not reported). Standard errors are presented in parentheses in the row below each coefficient. *** indicates significant at the 1% level of significance, ** at the 5% and * at the 10%. Moran's I is calculated for each time period; the table shows the range of test statistics over the time periods, and the level of significance indicated is the average p-value across the time periods. † Separate concentration measures to refers to models including both retailer and supplier concentration measures rather than just the imbalance between the two. †† Imbalance refers to models which include only the measure of imbalance between retailer and supplier concentration measures rather than both measures

Table 46: Results - New Formulation

| New Formulation | | | | | | | | | | | | | | |
|--|--|---|-------------------------------|--|--|--|--|--|---|-------------------------------|--|--|--|---|
| | Long period RE (Separate concentration measures) † | Short Period RE (Separate concentration measures) † | Long period RE (Imbalance) †† | Long period RE (Separate concentration measures) † | Long period RE (Separate concentration measures) † | Long period RE (Separate concentration measures) † | Long period RE (Separate concentration measures) † | Long period FE (Separate concentration measures) † | Short Period FE (Separate concentration measures) † | Long period FE (Imbalance) †† | Long period FE (Separate concentration measures) † | Long period FE (Separate concentration measures) † | Long period FE (Separate concentration measures) † | Long period FFE (Separate concentration measures) † |
| Local Private labels share | 0.037** | 0.051*** | 0.043*** | 0.041*** | 0.036** | - | 0.07*** | -0.021 | -0.028 | -0.012 | -0.016 | -0.02 | - | -0.013 |
| | (0.015) | (0.014) | (0.016) | (0.016) | (0.015) | - | (0.017) | (0.02) | (0.021) | (0.019) | (0.019) | (0.02) | - | (0.027) |
| National Private labels share | | | - | - | - | -0.08 | - | - | - | - | - | - | -0.006 | - |
| | | | - | - | - | (0.052) | - | - | - | - | - | - | (0.289) | - |
| National retail concentration HHI (group, edible groceries) | 1.023*** | -2.023*** | - | - | 1.082*** | 1.098*** | - | 0.746*** | -1.668*** | - | - | 0.856*** | 0.727*** | - |
| | (0.164) | (0.396) | - | - | (0.17) | (0.165) | - | (0.227) | (0.34) | - | - | (0.229) | (0.229) | - |
| National retail concentration HHI (group, modern retail) | | | - | 1.666*** | - | - | - | - | - | - | 1.183* | - | - | - |
| | | | - | (0.473) | - | - | - | - | - | - | (0.615) | - | - | - |
| Local retail concentration HHI (group, floorspace) | | | - | - | - | - | -0.142 | - | - | - | - | - | - | -0.352 |
| | | | - | - | - | - | (0.159) | - | - | - | - | - | - | (0.267) |

| New Formulation | | | | | | | | | | | | | | |
|---|--|---|-------------------------------|--|--|--|--|--|---|-------------------------------|--|--|--|---|
| | Long period RE (Separate concentration measures) † | Short Period RE (Separate concentration measures) † | Long period RE (Imbalance) †† | Long period RE (Separate concentration measures) † | Long period RE (Separate concentration measures) † | Long period RE (Separate concentration measures) † | Long period RE (Separate concentration measures) † | Long period FE (Separate concentration measures) † | Short Period FE (Separate concentration measures) † | Long period FE (Imbalance) †† | Long period FE (Separate concentration measures) † | Long period FE (Separate concentration measures) † | Long period FE (Separate concentration measures) † | Long period FFE (Separate concentration measures) † |
| National supplier concentration HHI (full market) | -0.212*** | -0.349*** | - | -0.201*** | - | -0.222*** | -0.333*** | -0.231 | -0.247 | - | -0.222 | - | -0.254 | -0.465** |
| | (0.063) | (0.07) | - | (0.064) | - | (0.061) | (0.071) | (0.175) | (0.44) | - | (0.186) | - | (0.191) | (0.188) |
| National supplier concentration HHI (brands only) | - | - | - | - | -0.348*** | - | - | - | - | - | -0.836*** | - | - | - |
| | - | - | - | - | (0.053) | - | - | - | - | - | (0.177) | - | - | - |
| Average Population density | -0.148*** | -0.13* | -0.166*** | -0.159*** | -0.148*** | -0.154*** | -0.148*** | - | - | - | - | - | - | - |
| | (0.045) | (0.074) | (0.044) | (0.045) | (0.045) | (0.045) | (0.044) | - | - | - | - | - | - | - |
| Imbalance | - | - | 0.346*** | - | - | - | - | - | - | 0.826*** | - | - | - | - |
| | - | - | (0.061) | - | - | - | - | - | - | (0.221) | - | - | - | - |
| Shop floor space | 0.624*** | 0.62*** | 0.602*** | 0.61*** | 0.623*** | 0.631*** | 0.635*** | 0.836* | 0.159 | 0.846* | 0.847** | 0.868** | 0.851** | 0.79* |
| | (0.073) | (0.081) | (0.073) | (0.073) | (0.073) | (0.074) | (0.078) | (0.414) | (0.396) | (0.42) | (0.417) | (0.415) | (0.411) | (0.425) |
| Average Population | 0.155** | 0.215** | 0.149* | 0.152** | 0.156** | 0.157** | 0.142* | - | - | - | - | - | - | - |
| | (0.077) | (0.098) | (0.077) | (0.076) | (0.077) | (0.077) | (0.076) | - | - | - | - | - | - | - |

| New Formulation | | | | | | | | | | | | | | |
|------------------------------------|--|---|-------------------------------|--|--|--|--|--|---|-------------------------------|--|--|--|---|
| | Long period RE (Separate concentration measures) † | Short Period RE (Separate concentration measures) † | Long period RE (Imbalance) †† | Long period RE (Separate concentration measures) † | Long period RE (Separate concentration measures) † | Long period RE (Separate concentration measures) † | Long period RE (Separate concentration measures) † | Long period FE (Separate concentration measures) † | Short Period FE (Separate concentration measures) † | Long period FE (Imbalance) †† | Long period FE (Separate concentration measures) † | Long period FE (Separate concentration measures) † | Long period FE (Separate concentration measures) † | Long period FFE (Separate concentration measures) † |
| Unemployment | -0.009 | -0.517* | 0.187 | 0.145 | 0.016 | 0 | 0.159 | 0.012 | -1.712*** | 0.216 | 0.138 | 0.072 | 0.002 | 0.09 |
| | (0.125) | (0.264) | (0.117) | (0.109) | (0.127) | (0.127) | (0.123) | (0.16) | (0.501) | (0.15) | (0.144) | (0.161) | (0.139) | (0.19) |
| Average regional GDP per capita | 0.226 | 0.017 | 0.318** | 0.293* | 0.235 | 0.276* | 0.262 | - | - | - | - | - | - | - |
| | (0.147) | (0.201) | (0.156) | (0.153) | (0.148) | (0.153) | (0.183) | - | - | - | - | - | - | - |
| National Product Category Turnover | 1.431*** | 1.553*** | 1.423*** | 1.462*** | 1.385*** | 1.442*** | 1.635*** | 3.491*** | -16.998*** | 4.137*** | 3.996*** | 3.457*** | 3.485*** | 4.125*** |
| | (0.066) | (0.125) | (0.064) | (0.069) | (0.061) | (0.067) | (0.089) | (0.444) | (1.071) | (0.363) | (0.439) | (0.435) | (0.384) | (0.546) |
| Supermarket Dummy | -0.672*** | -0.441*** | -0.703*** | -0.697*** | -0.675*** | -0.674*** | -0.72*** | -1.039** | 0.272 | -1.075*** | -1.071*** | -1.064*** | -1.04** | -1.017*** |
| | (0.115) | (0.113) | (0.113) | (0.114) | (0.115) | (0.118) | (0.119) | (0.387) | (0.18) | (0.387) | (0.393) | (0.391) | (0.387) | (0.366) |
| Hard Discounter Dummy | -2.509*** | -2.104*** | -2.567*** | -2.548*** | -2.508*** | -2.485*** | -2.73*** | -6.097*** | -4.633*** | -6.252*** | -6.179*** | -6.096*** | -6.085*** | -6.256*** |
| | (0.437) | (0.375) | (0.44) | (0.44) | (0.437) | (0.433) | (0.483) | (0.434) | (0.443) | (0.431) | (0.427) | (0.435) | (0.427) | (0.428) |
| New shop opening | -0.052 | 0.222** | 0.17 | 0.052 | -0.059 | -0.058 | 0.137 | -0.041 | -0.003 | 0.121 | 0.058 | -0.05 | -0.038 | 0.183 |
| | (0.103) | (0.111) | (0.108) | (0.111) | (0.103) | (0.103) | (0.132) | (0.149) | (0.15) | (0.125) | (0.149) | (0.148) | (0.148) | (0.164) |
| Retailer Expectations | 0.523*** | -3.586*** | 0.24 | 0.302 | 0.507*** | 0.502*** | 0.128 | 0.738*** | -0.378 | 0.643*** | 0.669*** | 0.72*** | 0.745*** | 0.482** |

| New Formulation | | | | | | | | | | | | | | |
|------------------------|--|---|-------------------------------|--|--|--|--|--|---|-------------------------------|--|--|--|---|
| | Long period RE (Separate concentration measures) † | Short Period RE (Separate concentration measures) † | Long period RE (Imbalance) †† | Long period RE (Separate concentration measures) † | Long period RE (Separate concentration measures) † | Long period RE (Separate concentration measures) † | Long period RE (Separate concentration measures) † | Long period FE (Separate concentration measures) † | Short Period FE (Separate concentration measures) † | Long period FE (Imbalance) †† | Long period FE (Separate concentration measures) † | Long period FE (Separate concentration measures) † | Long period FE (Separate concentration measures) † | Long period FFE (Separate concentration measures) † |
| | (0.19) | (0.449) | (0.213) | (0.207) | (0.191) | (0.187) | (0.193) | (0.218) | (0.345) | (0.235) | (0.236) | (0.213) | (0.209) | (0.223) |
| Seasonal Dummy | -3.992*** | -4.038*** | -4.011*** | -4.007*** | -3.993*** | -3.992*** | -4.182*** | -3.975*** | -4.072*** | -3.982*** | -3.98*** | -3.976*** | -3.975*** | -4.152*** |
| | (0.116) | (0.191) | (0.116) | (0.117) | (0.116) | (0.116) | (0.12) | (0.115) | (0.188) | (0.116) | (0.116) | (0.115) | (0.116) | (0.12) |
| BIC | - | - | - | - | - | - | - | 295733.3 | 162010.2 | 295740.8 | 16281.7 | 295721.8 | 295735.6 | 272267.7 |
| Within R ² | 0.175 | 0.212 | 0.174 | 0.189 | 0.175 | 0.175 | 0.183 | 0.176 | 0.233 | 0.176 | 0.191 | 0.176 | 0.176 | 0.185 |
| Between R ² | 0.755 | 0.693 | 0.756 | 0.823 | 0.756 | 0.754 | 0.755 | 0.326 | 0.194 | 0.256 | 0.128 | 0.315 | 0.325 | 0.231 |
| Overall R ² | 0.394 | 0.438 | 0.394 | 0.45 | 0.394 | 0.394 | 0.395 | 0.206 | 0.069 | 0.167 | 0.035 | 0.201 | 0.206 | 0.161 |
| Hausman Test | 1544.97*** | 193.95*** | 134.83*** | 114.27*** | 90.01*** | 62.59*** | 112.37*** | - | - | - | - | - | - | - |
| Moran's I (Range) | (0.19 - 0.336) | (0.186 - 0.266) | (0.189 - 0.337) | (0.189 - 0.336) | (0.19 - 0.335) | (0.191 - 0.336) | (0.186 - 0.315) | (0.251 - 0.406) | (0.613 - 0.62) | (0.287 - 0.426) | (0.274 - 0.417) | (0.256 - 0.412) | (0.251 - 0.407) | (0.275 - 0.411) |

Note: All specifications use standard errors derived by clustering on consumer shopping areas and include product and country fixed effects (not reported). Standard errors are presented in parentheses in the row below each coefficient. *** indicates significant at the 1% level of significance, ** at the 5% and * at the 10%. Moran's I is calculated for each time period; the table shows the range of test statistics over the time periods, and the level of significance indicated is the average p-value across the time periods. † Separate concentration measures to refers to models including both retailer and supplier concentration measures rather than just the imbalance between the two. †† Imbalance refers to models which include only the measure of imbalance between retailer and supplier concentration measures rather than both measures

Table 47: Results - New Range extensions

| | New Range extensions | | | | | | | | | | | | | |
|--|--|---|-------------------------------|--|--|--|--|--|--|---|-------------------------------|--|--|--|
| | Long period RE (Separate concentration measures) † | Short Period RE (Separate concentration measures) † | Long period RE (Imbalance) †† | Long period RE (Separate concentration measures) † | Long period RE (Separate concentration measures) † | Long period RE (Separate concentration measures) † | Long period RE (Separate concentration measures) † | Long period RE (Separate concentration measures) † | Long period FE (Separate concentration measures) † | Short Period FE (Separate concentration measures) † | Long period FE (Imbalance) †† | Long period FE (Separate concentration measures) † | Long period FE (Separate concentration measures) † | Long period FE (Separate concentration measures) † |
| Local Private labels share | -0.008 | 0.007 | -0.008 | -0.011 | -0.007 | - | 0.014 | -0.051** | -0.001 | -0.051** | -0.056** | -0.053** | - | -0.063** |
| | (0.019) | (0.021) | (0.019) | (0.019) | (0.019) | - | (0.026) | (0.023) | (0.019) | (0.023) | (0.024) | (0.023) | - | (0.03) |
| National Private labels share | | | - | - | - | -0.347*** | - | - | - | - | - | - | -0.359 | - |
| | | | - | - | - | (0.056) | - | - | - | - | - | - | (0.272) | - |
| National retail concentration HHI (group, edible groceries) | -0.124 | 5.846*** | - | - | -0.121 | 0.011 | - | 0.083 | 6.444*** | - | - | 0.203 | 0.193 | - |
| | (0.177) | (0.643) | - | - | (0.178) | (0.175) | - | (0.177) | (0.603) | - | - | (0.187) | (0.2) | - |
| National retail concentration HHI (group, modern retail) | | | - | 1.932*** | - | - | - | - | - | - | 2.178*** | - | - | - |
| | | | - | (0.692) | - | - | - | - | - | - | (0.576) | - | - | - |
| Local retail concentration HHI (group, floorspace) | | | - | - | - | - | -0.134 | - | - | - | - | - | - | 0.16 |

| | New Range extensions | | | | | | | | | | | | | | |
|---|--|---|-------------------------------|--|--|--|--|--|---|-------------------------------|--|--|--|--|---------|
| | Long period RE (Separate concentration measures) † | Short Period RE (Separate concentration measures) † | Long period RE (Imbalance) †† | Long period RE (Separate concentration measures) † | Long period RE (Separate concentration measures) † | Long period RE (Separate concentration measures) † | Long period RE (Separate concentration measures) † | Long period FE (Separate concentration measures) † | Short Period FE (Separate concentration measures) † | Long period FE (Imbalance) †† | Long period FE (Separate concentration measures) † | Long period FE (Separate concentration measures) † | Long period FE (Separate concentration measures) † | Long period FE (Separate concentration measures) † | |
| | | | | - | - | - | - | (0.196) | | | - | - | - | - | (0.448) |
| National supplier concentration HHI (full market) | -0.124 | 0.207*** | - | -0.118 | - | -0.138* | 0.054 | -0.846*** | -0.422 | - | -0.672*** | - | -0.969*** | -0.742*** | |
| | (0.081) | (0.066) | - | (0.084) | - | (0.082) | (0.08) | (0.2) | (0.573) | - | (0.207) | - | (0.213) | (0.212) | |
| National supplier concentration HHI (brands only) | | | | | | | | | | | | | -0.652** | | |
| | | | | | | | | | | | | | (0.286) | | |
| Average Population density | -0.066 | -0.08 | -0.064 | -0.056 | -0.067 | -0.067 | -0.062 | - | - | - | - | - | - | - | |
| | (0.063) | (0.079) | (0.063) | (0.064) | (0.063) | (0.063) | (0.065) | - | - | - | - | - | - | - | |
| Imbalance | - | - | 0.114 | - | - | - | - | - | - | 1.266*** | - | - | - | - | |
| | - | - | (0.073) | - | - | - | - | - | - | (0.28) | - | - | - | - | |
| Shop floor space | 1.219*** | 1.037*** | 1.221*** | 1.23*** | 1.218*** | 1.214*** | 1.276*** | 0.491 | 0.69 | 0.572* | 0.62* | 0.477 | 0.531 | 0.382 | |
| | (0.107) | (0.102) | (0.107) | (0.107) | (0.107) | (0.107) | (0.117) | (0.336) | (0.577) | (0.327) | (0.326) | (0.334) | (0.336) | (0.369) | |
| Average Population | 0.043 | 0.186 | 0.044 | 0.049 | 0.043 | 0.043 | 0.047 | - | - | - | - | - | - | - | |

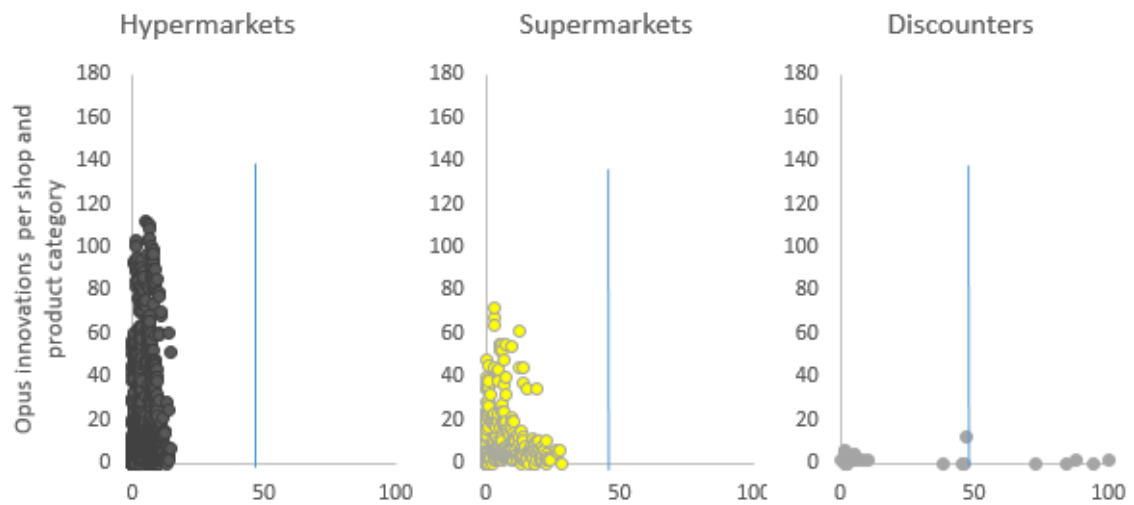
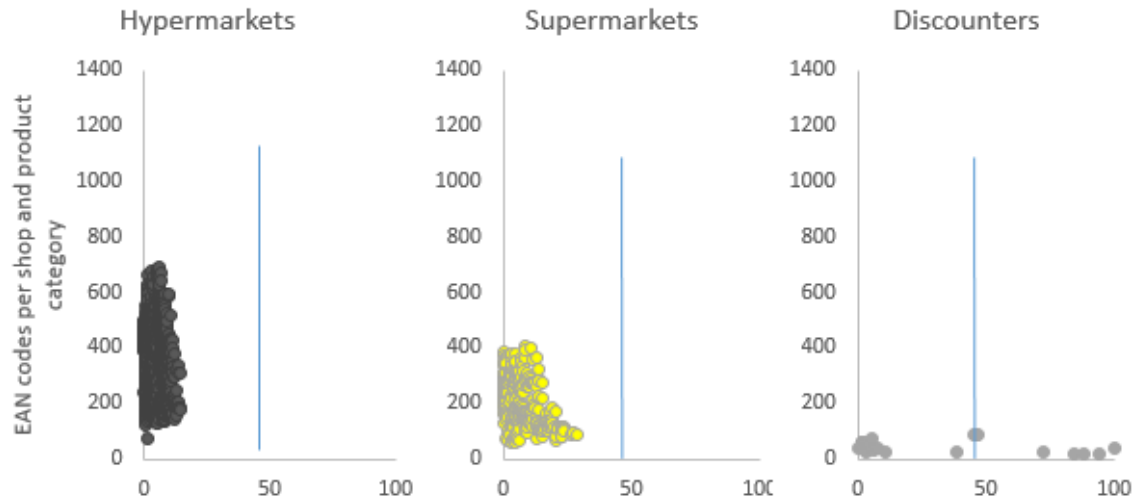
| | New Range extensions | | | | | | | | | | | | | |
|------------------------------------|--|---|-------------------------------|--|--|--|--|--|--|---|-------------------------------|--|--|--|
| | Long period RE (Separate concentration measures) † | Short Period RE (Separate concentration measures) † | Long period RE (Imbalance) †† | Long period RE (Separate concentration measures) † | Long period RE (Separate concentration measures) † | Long period RE (Separate concentration measures) † | Long period RE (Separate concentration measures) † | Long period RE (Separate concentration measures) † | Long period FE (Separate concentration measures) † | Short Period FE (Separate concentration measures) † | Long period FE (Imbalance) †† | Long period FE (Separate concentration measures) † | Long period FE (Separate concentration measures) † | Long period FE (Separate concentration measures) † |
| | (0.103) | (0.121) | (0.103) | (0.104) | (0.103) | (0.102) | (0.107) | - | - | - | - | - | - | - |
| Unemployment | -0.562*** | -0.948*** | -0.571*** | -0.598*** | -0.555*** | -0.513*** | -0.809*** | -0.571*** | -2.537*** | -0.396* | -0.546** | -0.471** | -0.529*** | -0.982*** |
| | (0.169) | (0.342) | (0.176) | (0.171) | (0.169) | (0.173) | (0.195) | (0.2) | (0.618) | (0.215) | (0.203) | (0.21) | (0.192) | (0.249) |
| Average regional GDP per capita | 0.12 | -0.084 | 0.113 | 0.09 | 0.122 | 0.128 | 0.13 | - | - | - | - | - | - | - |
| | (0.246) | (0.278) | (0.245) | (0.245) | (0.246) | (0.241) | (0.301) | - | - | - | - | - | - | - |
| National Product Category Turnover | 1.239*** | 1.416*** | 1.239*** | 1.219*** | 1.273*** | 1.249*** | 1.565*** | 0.256 | 4.025*** | 0.179 | -0.084 | 0.153 | 0.126 | 2.409*** |
| | (0.105) | (0.119) | (0.1) | (0.111) | (0.099) | (0.098) | (0.072) | (0.563) | (0.877) | (0.571) | (0.599) | (0.566) | (0.604) | (0.398) |
| Supermarket Dummy | -0.903*** | -1.012*** | -0.902*** | -0.899*** | -0.904*** | -0.909*** | -0.832*** | -0.049 | -0.703* | -0.123 | -0.141 | -0.051 | -0.054 | 0.038 |
| | (0.152) | (0.16) | (0.153) | (0.152) | (0.152) | (0.153) | (0.15) | (0.359) | (0.359) | (0.368) | (0.36) | (0.364) | (0.365) | (0.356) |
| Hard Discounter Dummy | -4.625*** | -4.825*** | -4.617*** | -4.591*** | -4.625*** | -4.638*** | -4.417*** | -8.923*** | -8.604*** | -8.898*** | -8.708*** | -8.982*** | -8.927*** | -8.888*** |
| | (0.432) | (0.329) | (0.43) | (0.431) | (0.432) | (0.436) | (0.479) | (0.365) | (0.677) | (0.363) | (0.37) | (0.367) | (0.372) | (0.367) |
| New shop opening | 0.195* | 0.308** | 0.155 | -0.008 | 0.194* | 0.191* | 0.215* | 0.144 | 0.148 | 0.067 | -0.067 | 0.122 | 0.145 | 0.211 |
| | (0.105) | (0.139) | (0.101) | (0.094) | (0.105) | (0.107) | (0.121) | (0.132) | (0.28) | (0.124) | (0.126) | (0.131) | (0.134) | (0.159) |

| | New Range extensions | | | | | | | | | | | | | | |
|------------------------|--|---|-------------------------------|--|--|--|--|--|--|---|-------------------------------|--|--|--|--|
| | Long period RE (Separate concentration measures) † | Short Period RE (Separate concentration measures) † | Long period RE (Imbalance) †† | Long period RE (Separate concentration measures) † | Long period RE (Separate concentration measures) † | Long period RE (Separate concentration measures) † | Long period RE (Separate concentration measures) † | Long period RE (Separate concentration measures) † | Long period FE (Separate concentration measures) † | Short Period FE (Separate concentration measures) † | Long period FE (Imbalance) †† | Long period FE (Separate concentration measures) † | Long period FE (Separate concentration measures) † | Long period FE (Separate concentration measures) † | Long period FE (Separate concentration measures) † |
| Retailer Expectations | 2.807*** | 1.382*** | 2.832*** | 2.88*** | 2.808*** | 2.79*** | 2.985*** | 2.635*** | 3.994*** | 2.568*** | 2.614*** | 2.607*** | 2.624*** | 2.93*** | |
| | (0.228) | (0.452) | (0.226) | (0.227) | (0.229) | (0.229) | (0.241) | (0.227) | (0.442) | (0.227) | (0.228) | (0.229) | (0.227) | (0.254) | |
| Seasonal Dummy | -5.052*** | -5.192*** | -5.05*** | -5.047*** | -5.052*** | -5.053*** | -5.062*** | -5.062*** | -5.198*** | -5.066*** | -5.063*** | | -5.065*** | -5.062*** | |
| | (0.08) | (0.113) | (0.08) | (0.08) | (0.08) | (0.08) | (0.085) | (0.08) | (0.112) | (0.081) | (0.081) | | (0.081) | (0.086) | |
| BIC | - | - | - | - | - | - | - | - | 289762.1 | 160817 | 289725.6 | 16281.7 | 289772.2 | 264816.6 | |
| Within R ² | 0.288 | 0.335 | 0.288 | 0.189 | 0.288 | 0.288 | 0.298 | 0.29 | 0.337 | 0.29 | 0.191 | | 0.289 | 0.3 | |
| Between R ² | 0.695 | 0.592 | 0.695 | 0.823 | 0.695 | 0.698 | 0.719 | 0.247 | 0.262 | 0.245 | 0.128 | | 0.251 | 0.27 | |
| Overall R ² | 0.434 | 0.448 | 0.434 | 0.45 | 0.434 | 0.435 | 0.444 | 0.261 | 0.21 | 0.26 | 0.035 | | 0.263 | 0.248 | |
| Hausman Test | 5204.52*** | 171.07*** | 142.2*** | 123.02*** | 111.65*** | 105.98*** | 150.48*** | | | | | | | | |
| Moran's I (Range) | (0.101 - 0.194) | (0.073 - 0.125) | (0.101 - 0.193) | (0.1 - 0.186) | (0.1 - 0.194) | (0.099 - 0.195) | (0.067 - 0.178) | (0.151 - 0.275) | (0.374 - 0.452) | (0.154 - 0.283) | (0.159 - 0.277) | (0.15 - 0.265) | (0.152 - 0.275) | (0.144 - 0.285) | |

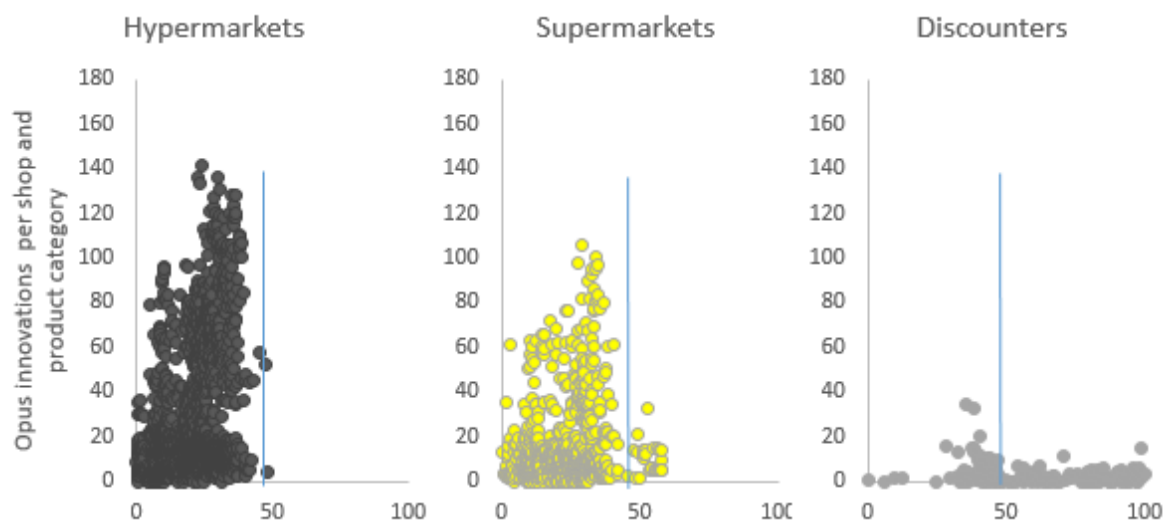
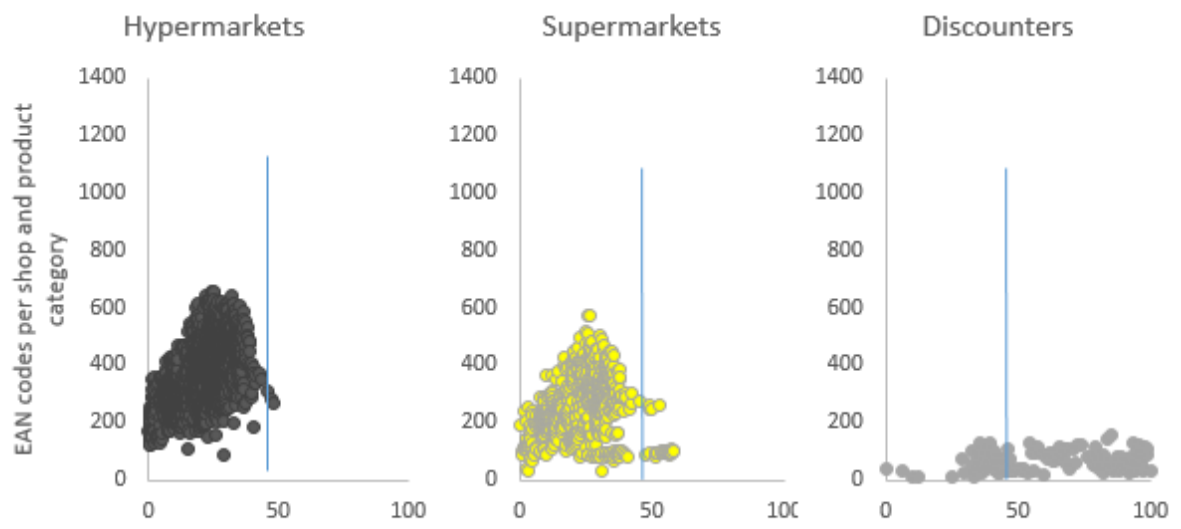
Note: All specifications use standard errors derived by clustering on consumer shopping areas and include product and country fixed effects (not reported). Standard errors are presented in parentheses in the row below each coefficient. *** indicates significant at the 1% level of significance, ** at the 5% and * at the 10%. Moran's I is calculated for each time period; the table shows the range of test statistics over the time periods, and the level of significance indicated is the average p-value across the time periods. † Separate concentration measures to refers to models including both retailer and supplier concentration measures rather than just the imbalance between the two. †† Imbalance refers to models which include only the measure of imbalance between retailer and supplier concentration measures rather than both measures

11.6.3. Focus on private labels results

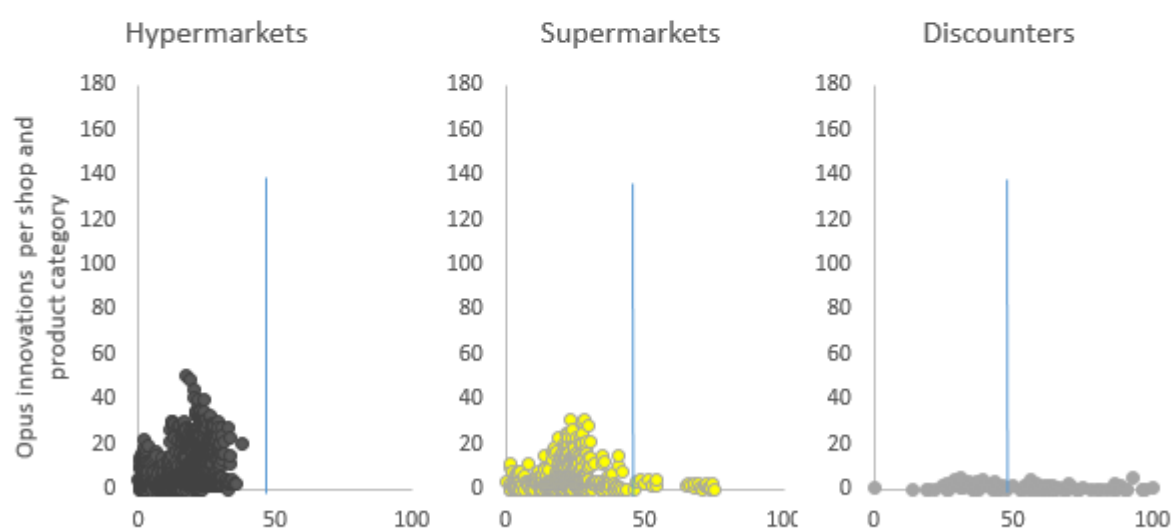
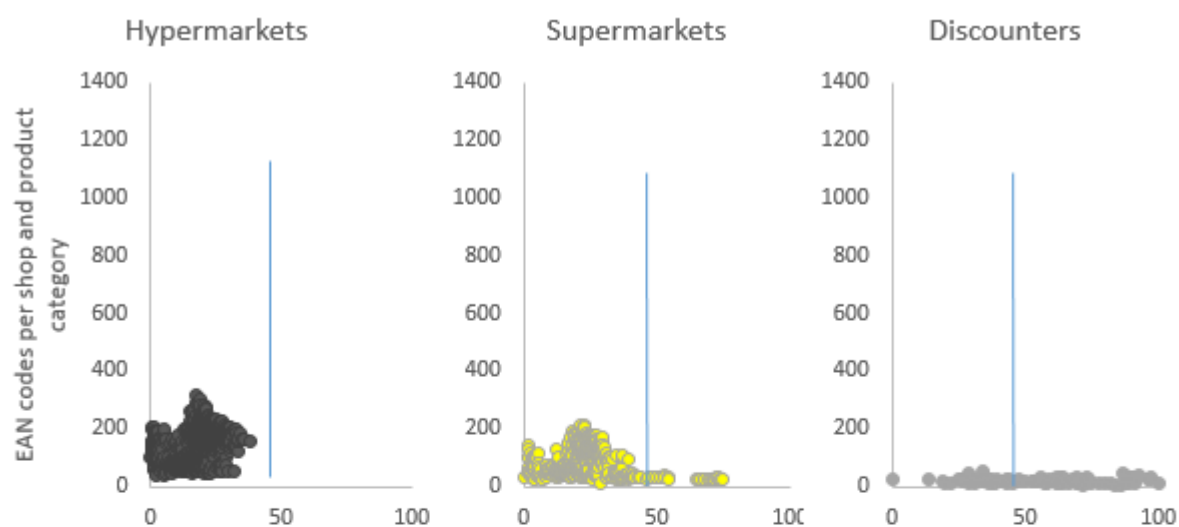
The figures below show the impacts of private label penetration on choice for each product category.



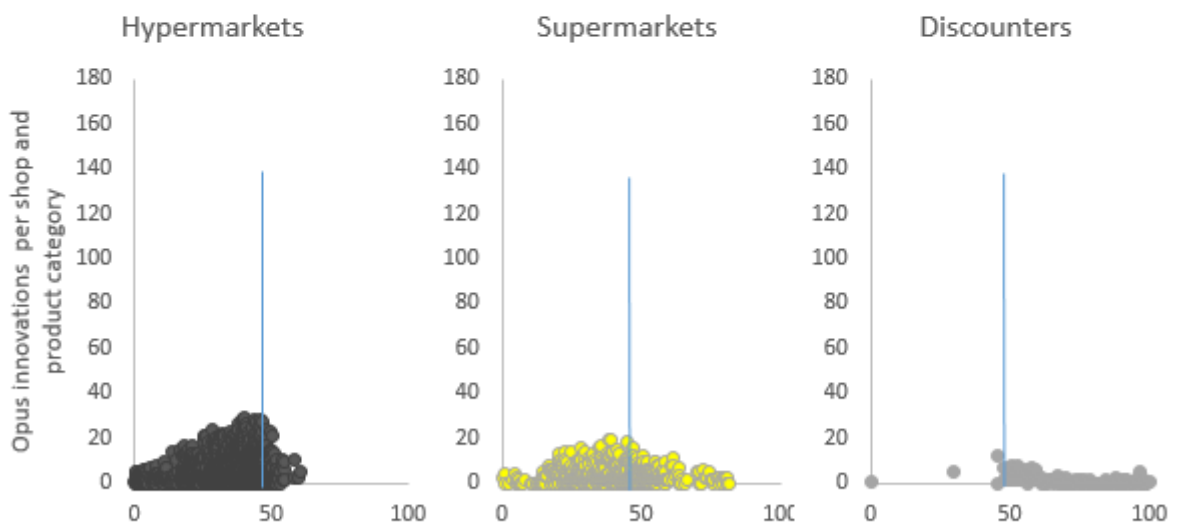
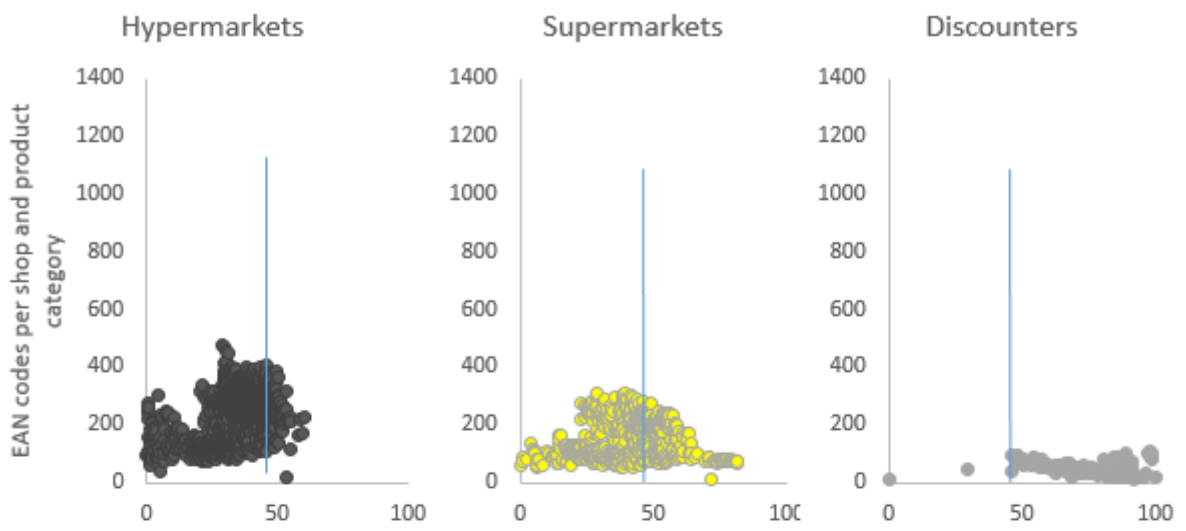
Product category 1 Baby food



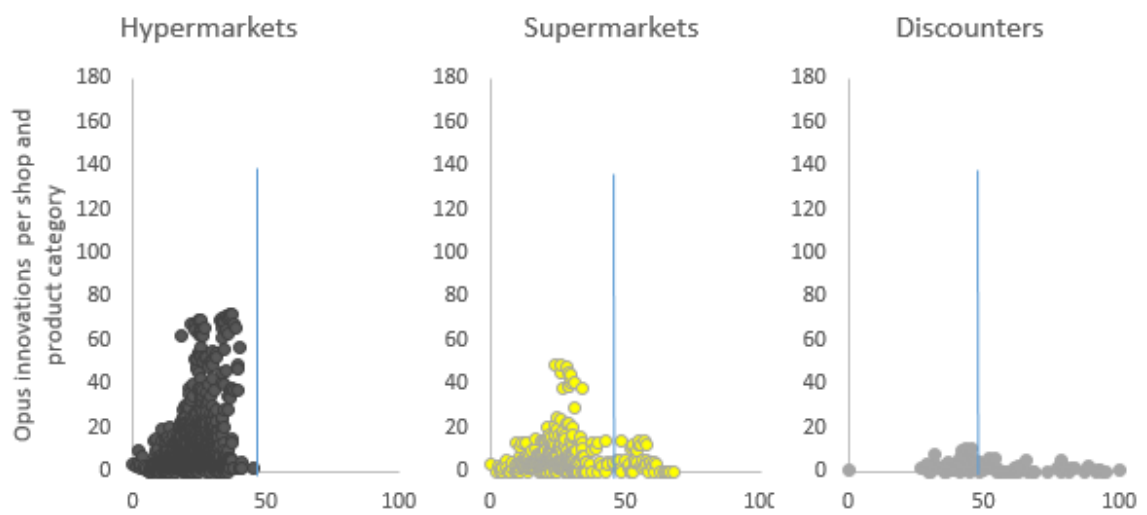
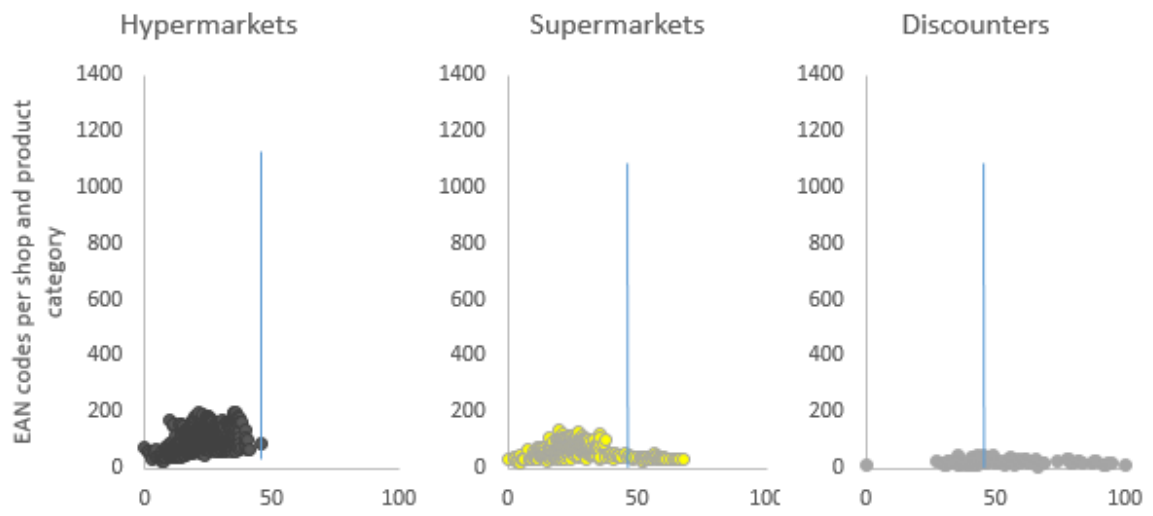
Product category 2 Biscuits



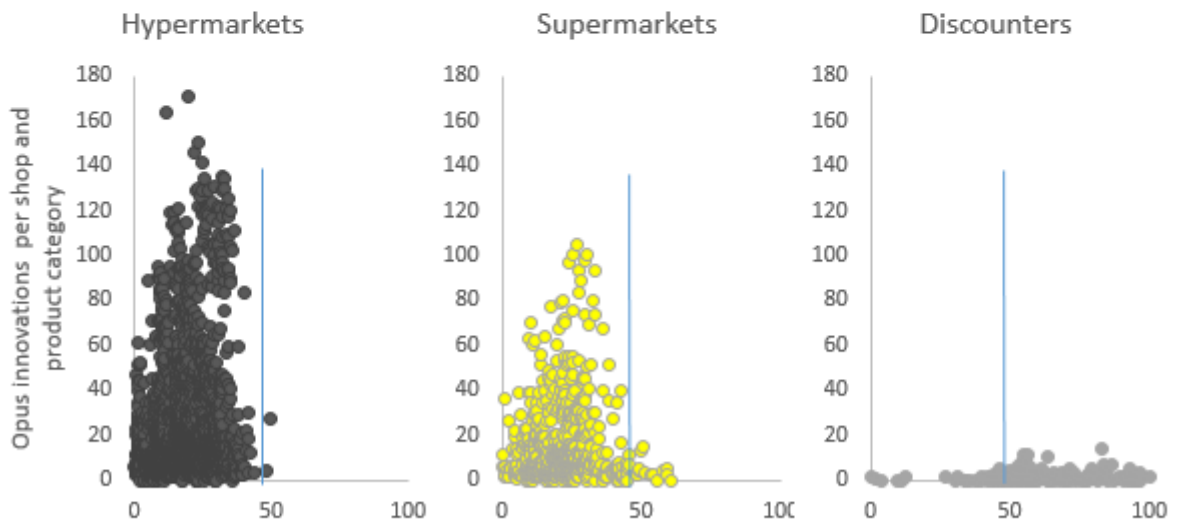
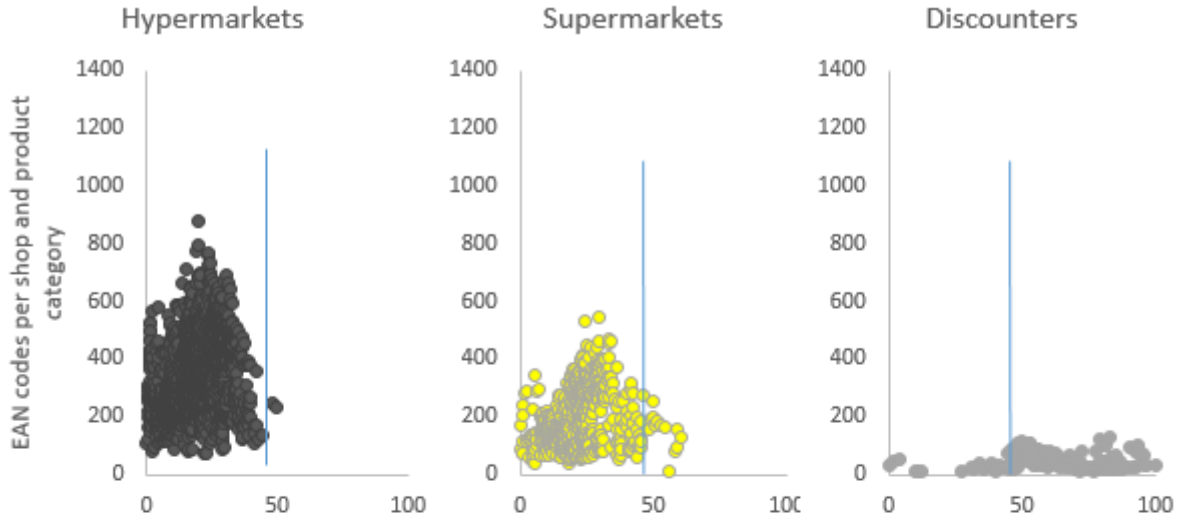
Product category 3 Butter/margarine



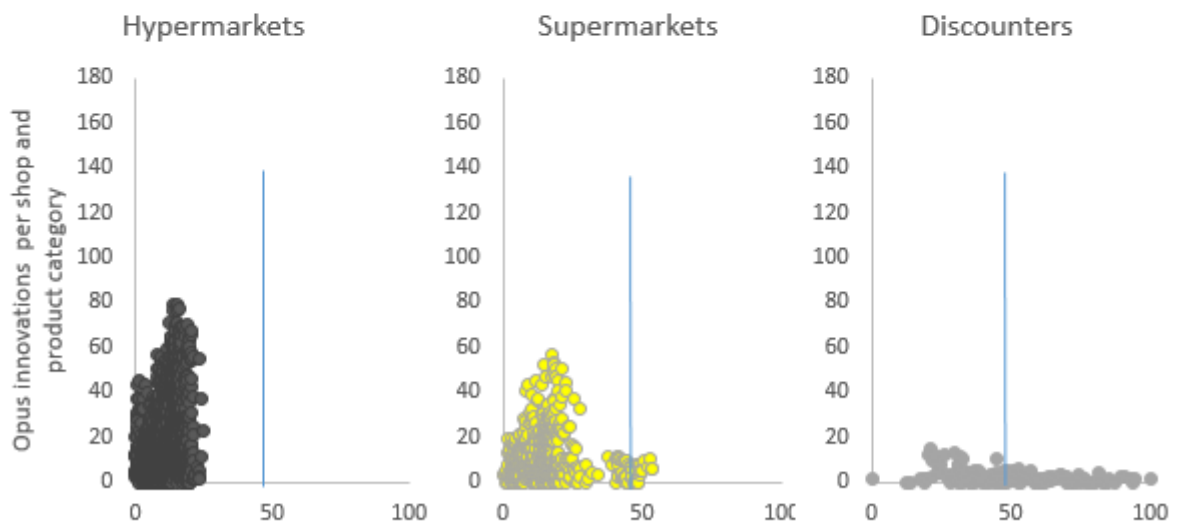
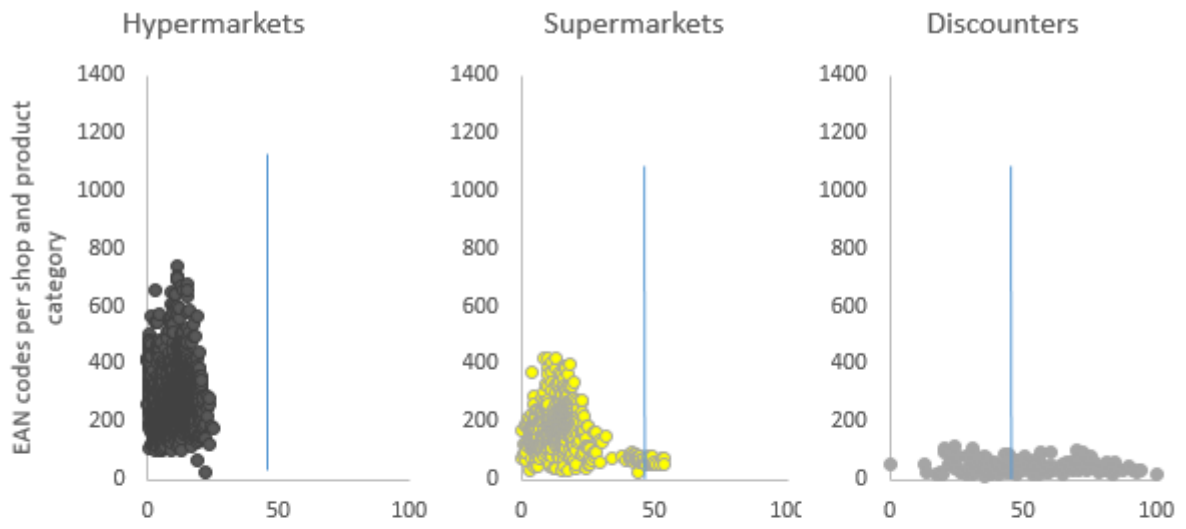
Product category 4 Canned vegetables



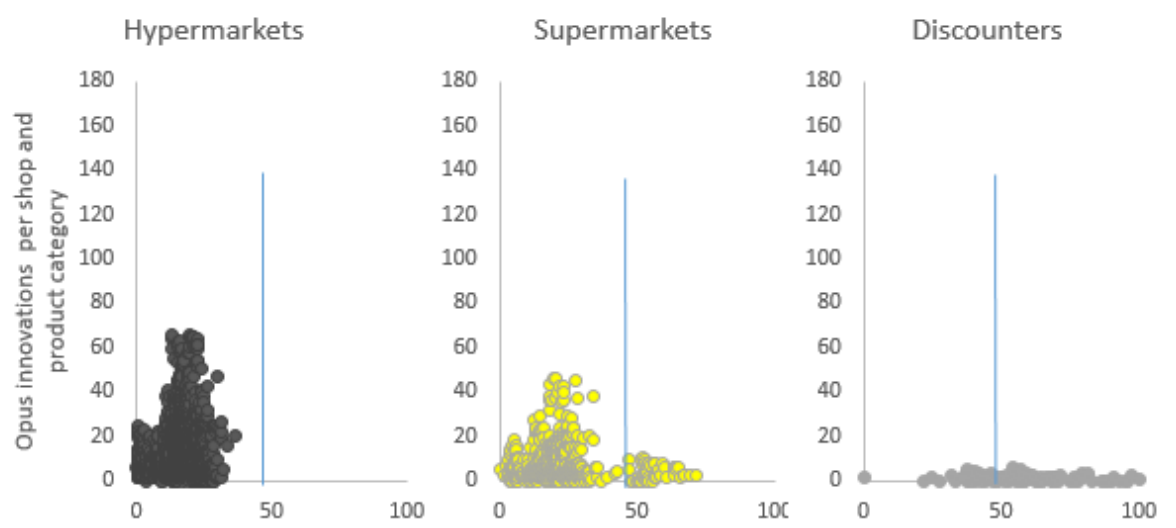
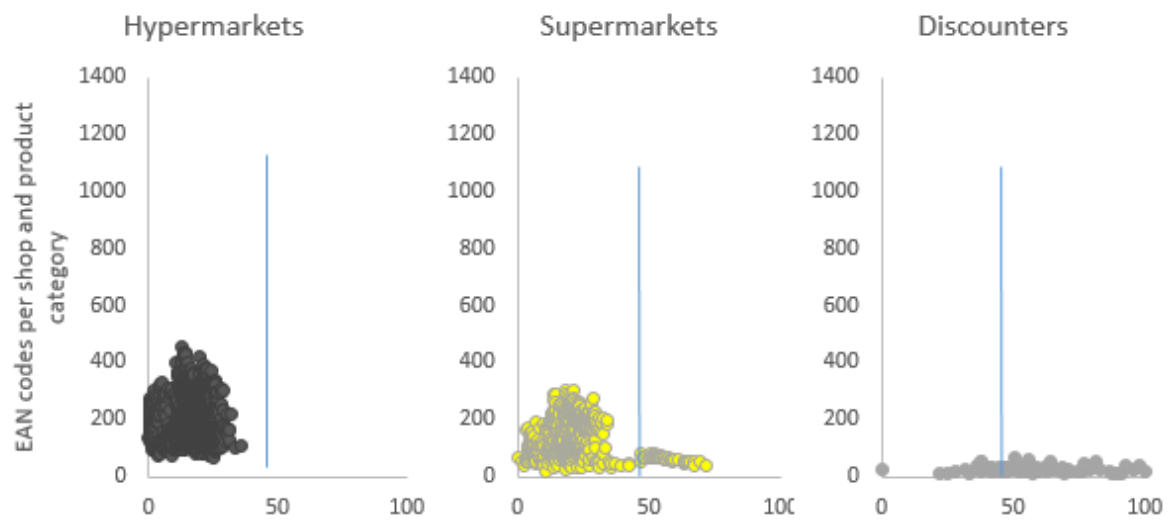
Product category 5 Cereals



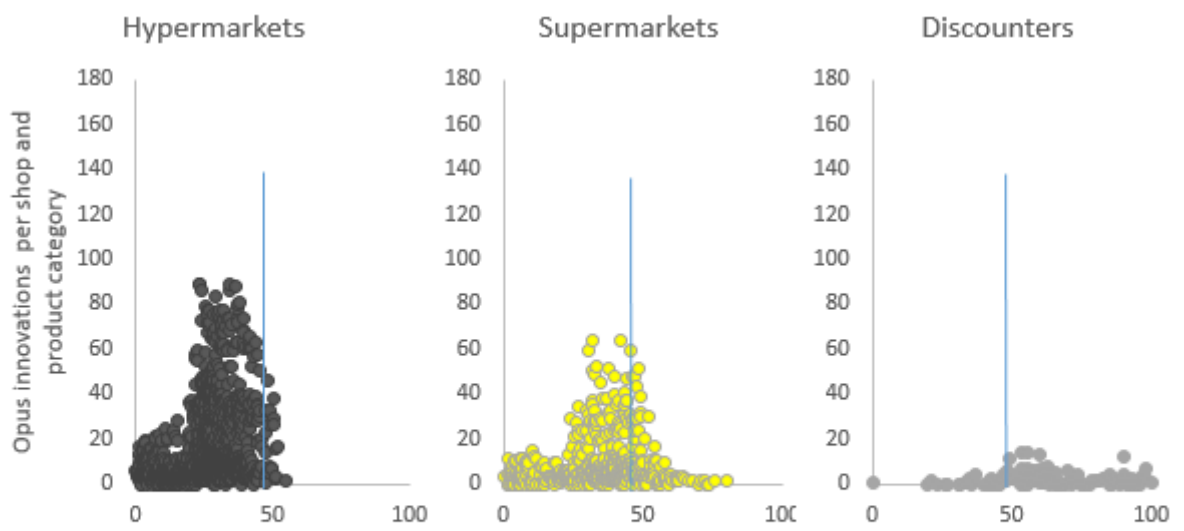
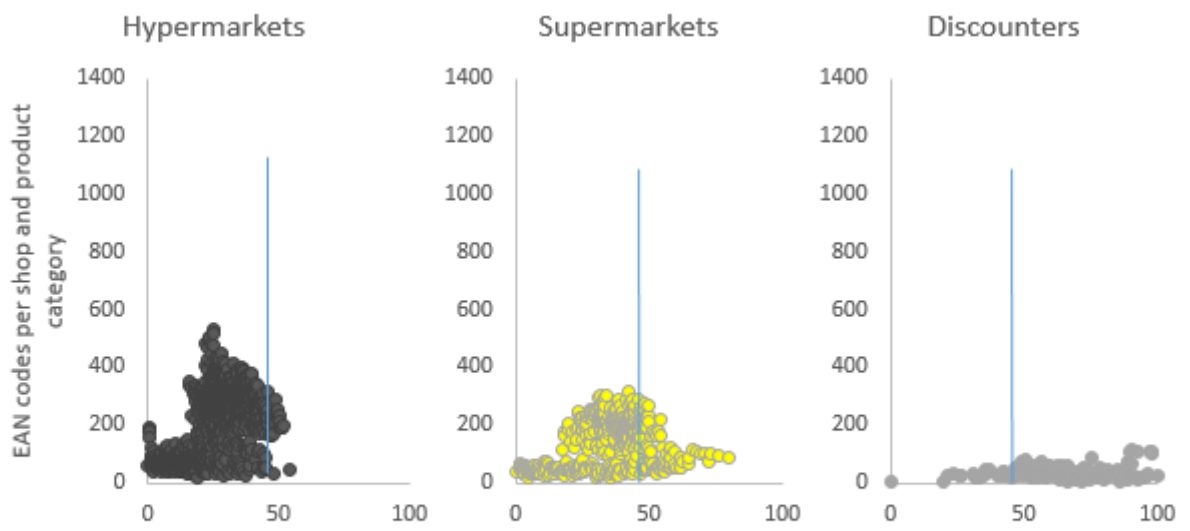
Product category 6 Cheese



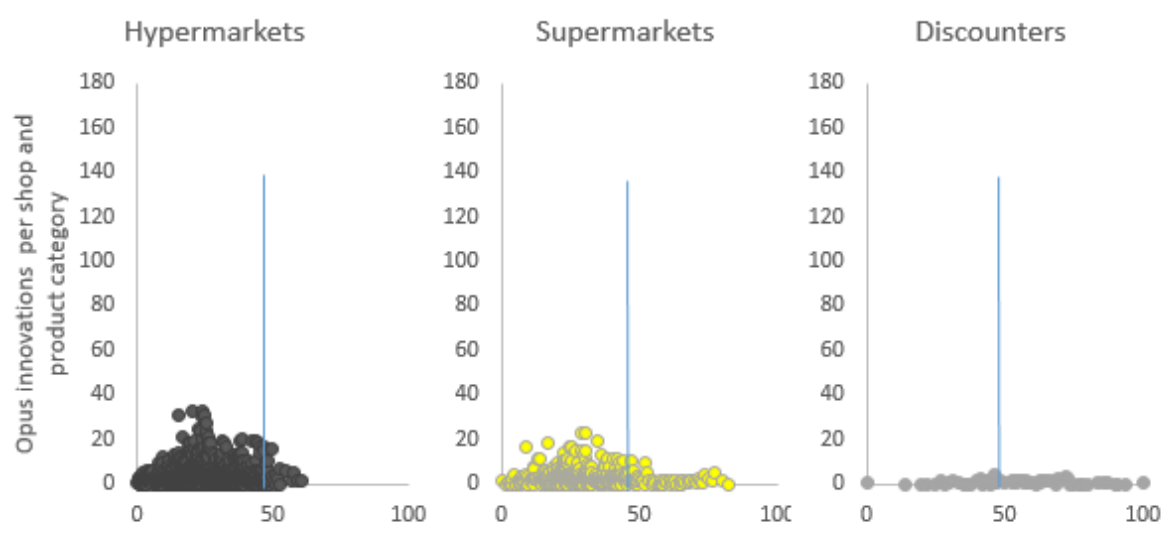
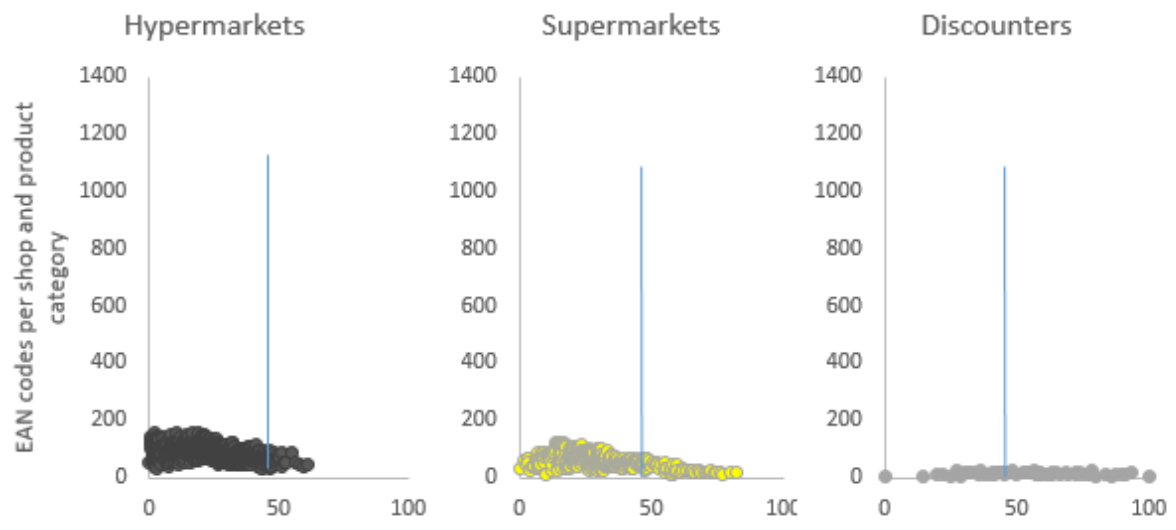
Product category 7 Chocolate (Bar + Candies)



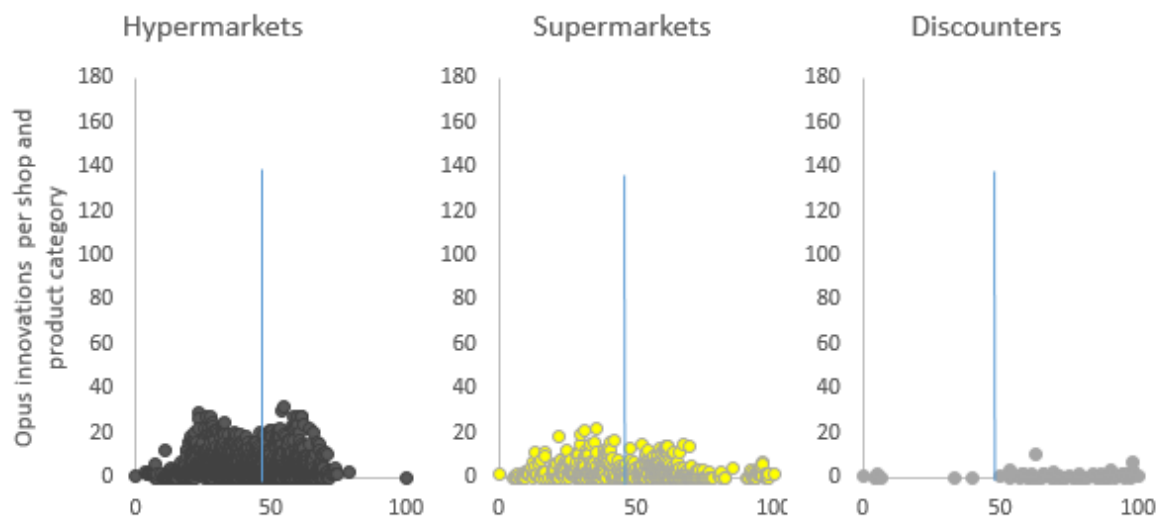
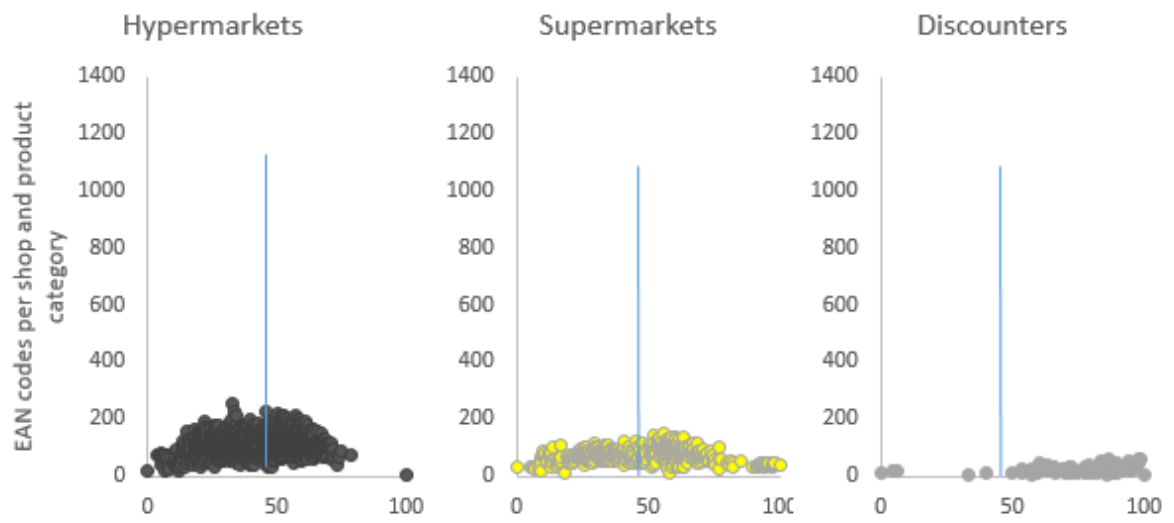
Product category 8 Coffee



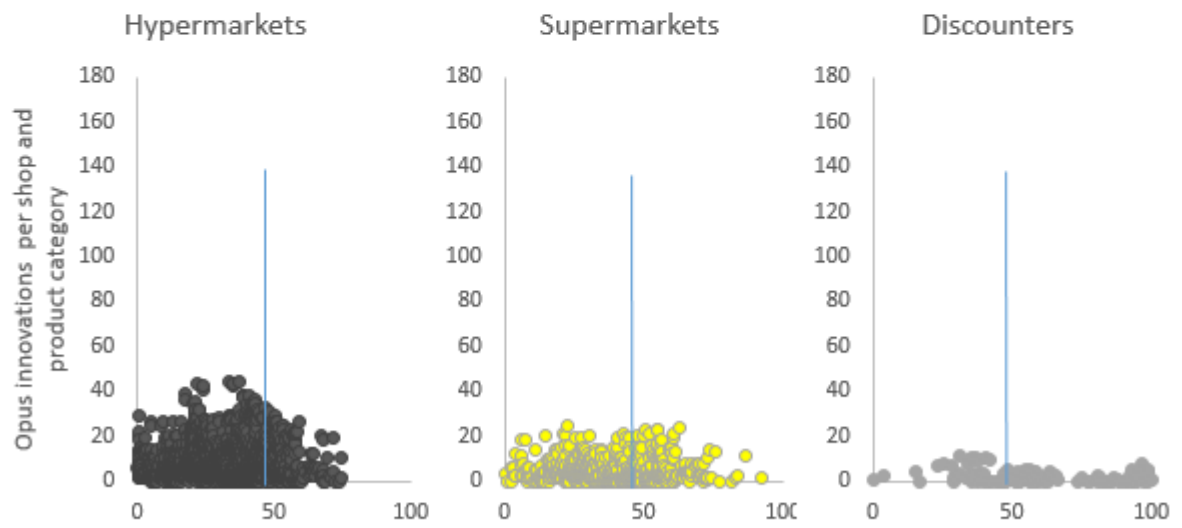
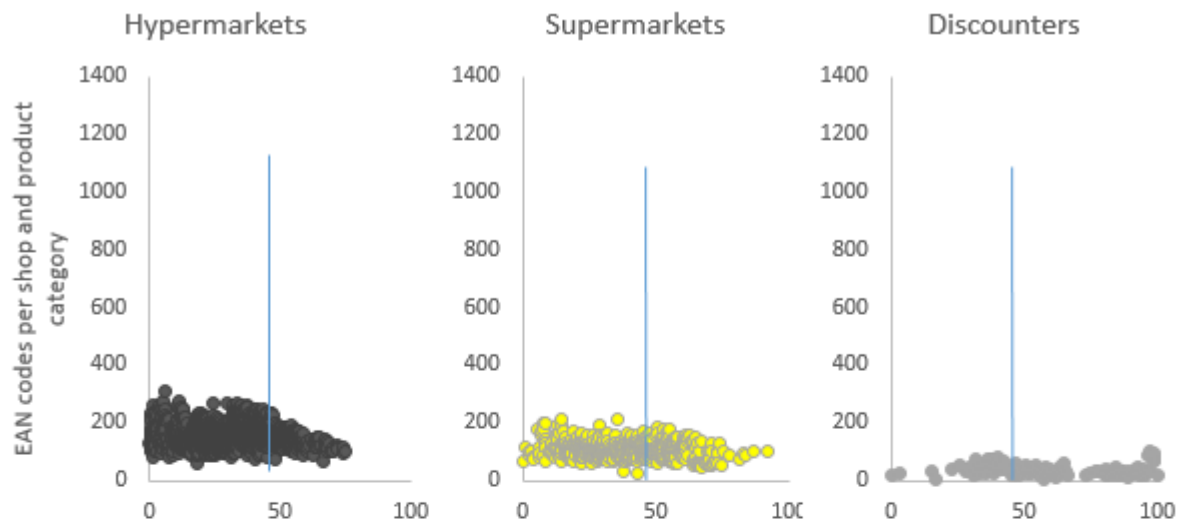
Product category 9 Dessert



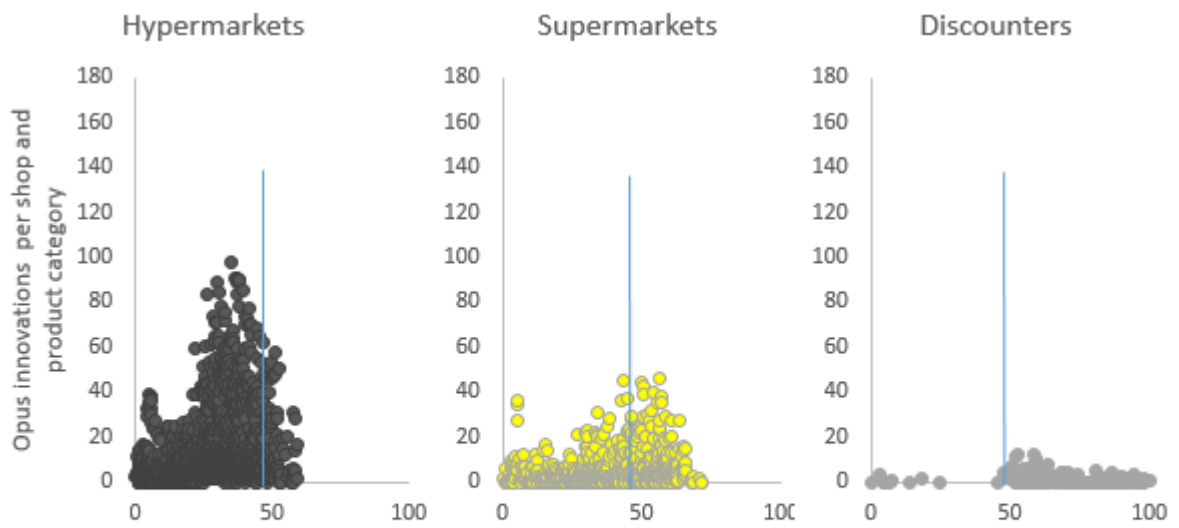
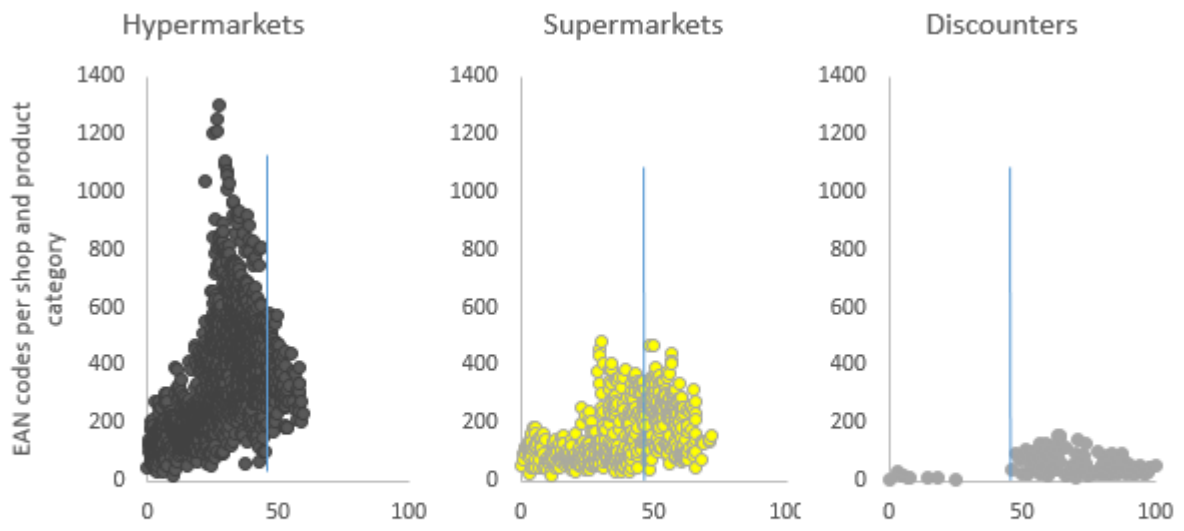
Product category 10 Edible oil



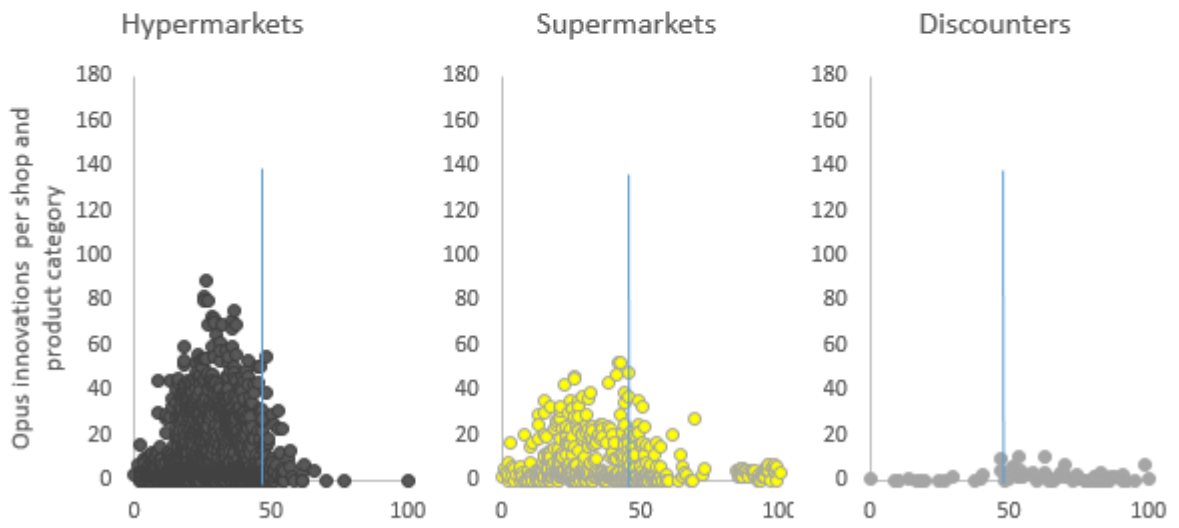
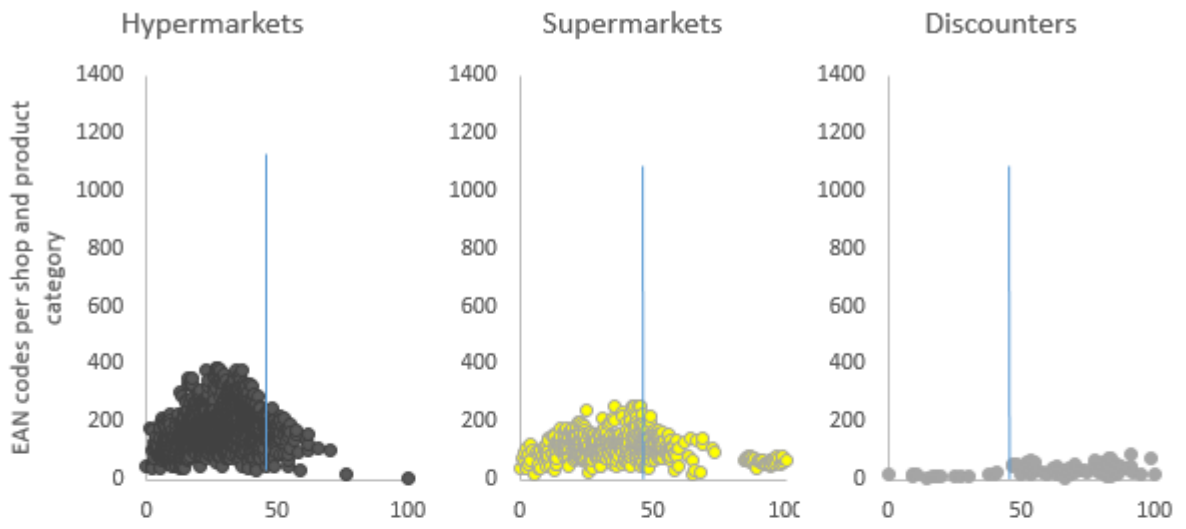
Product category 12 Frozen vegetables



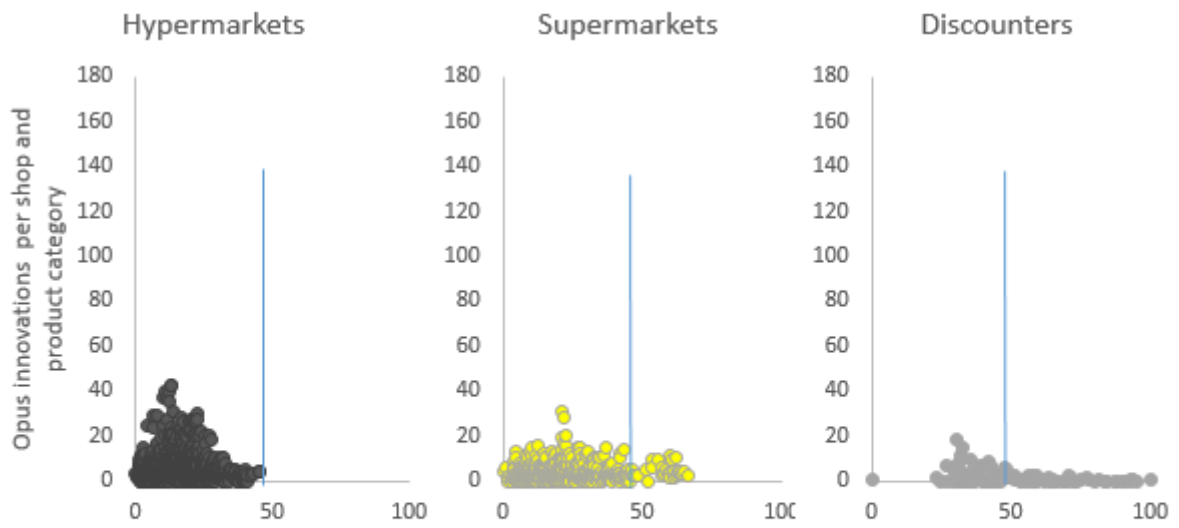
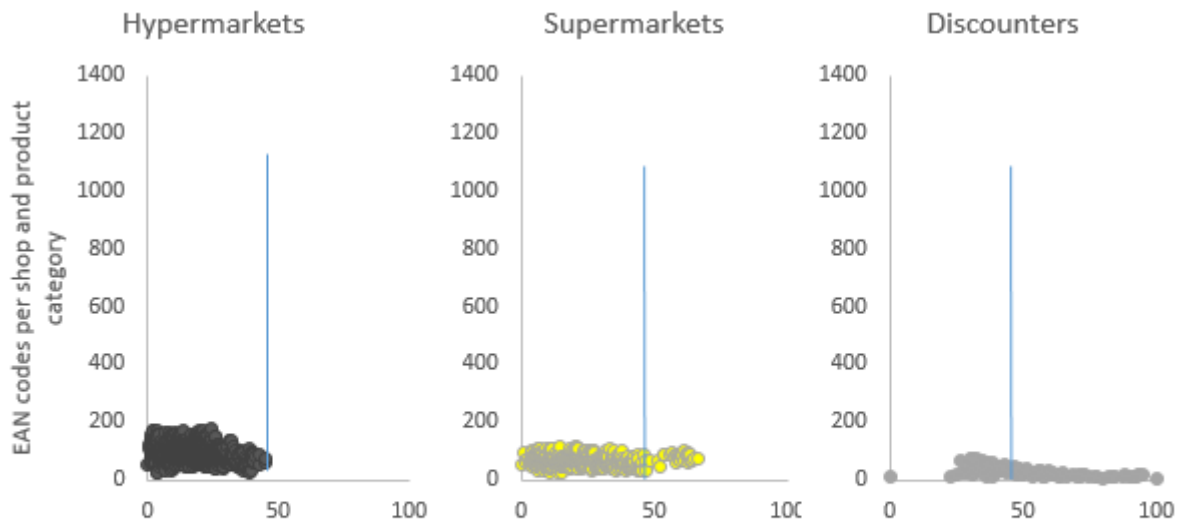
Product category 13 Fruit juices (ambient)



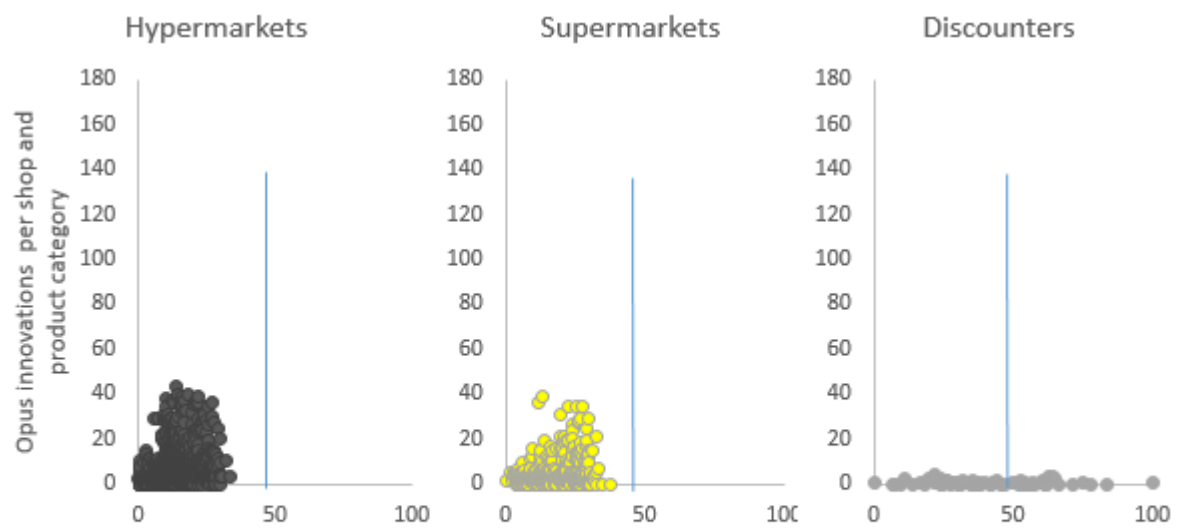
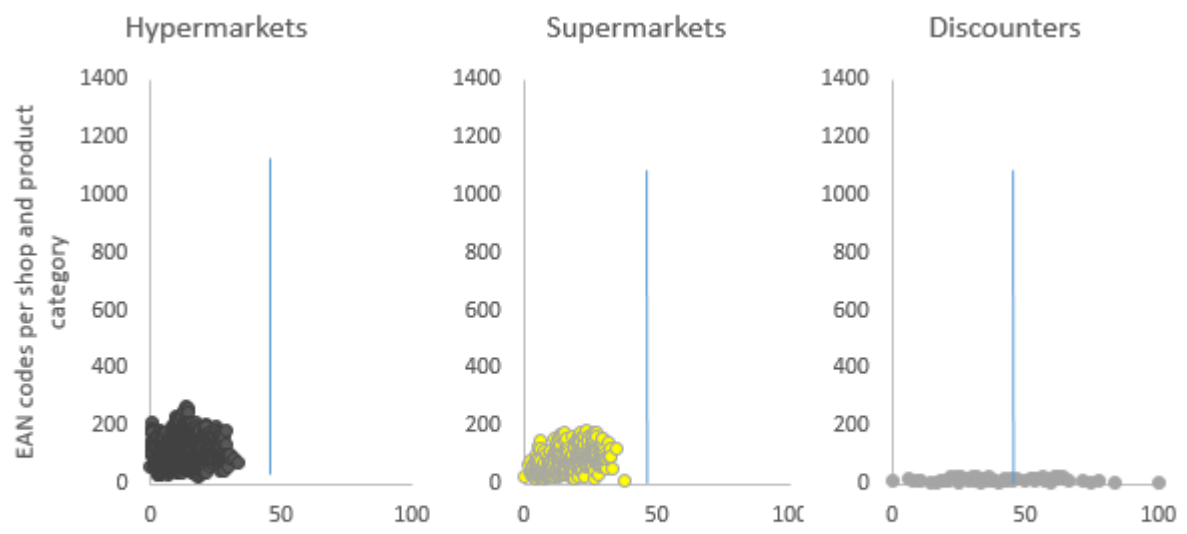
Product category 14 Ham/delicatessen



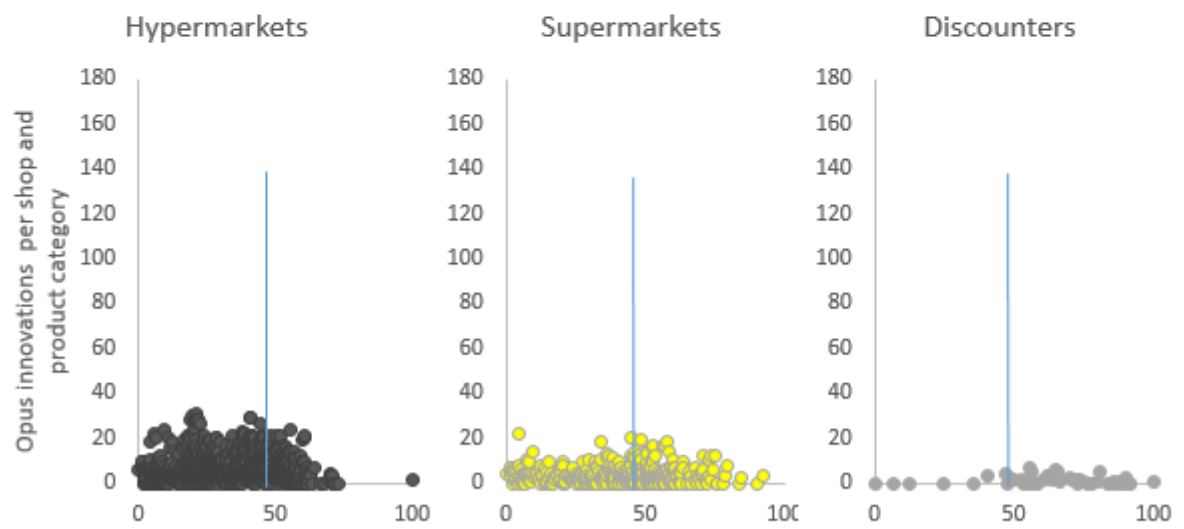
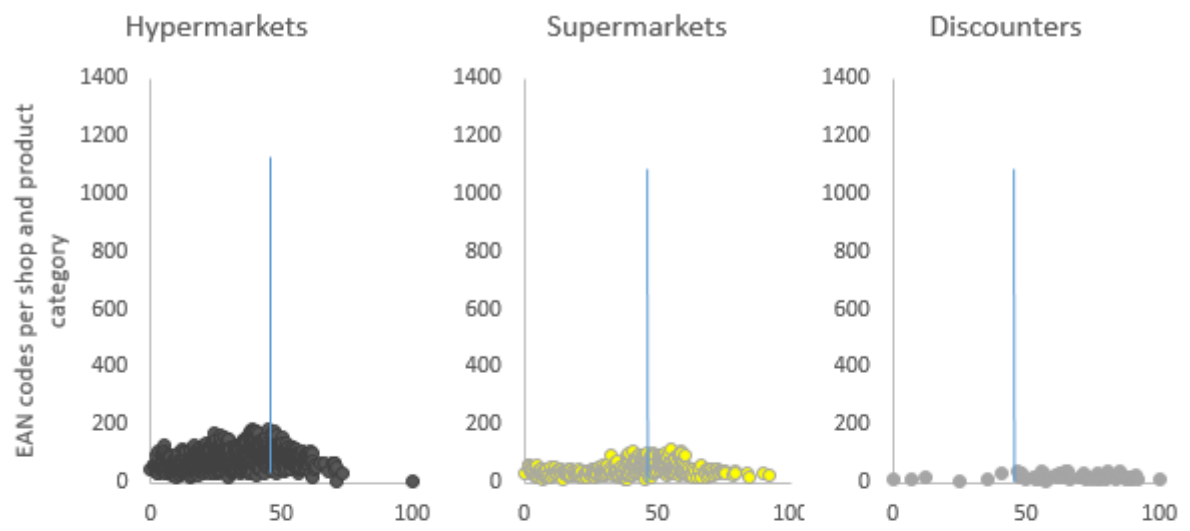
Product category 15 Ice cream



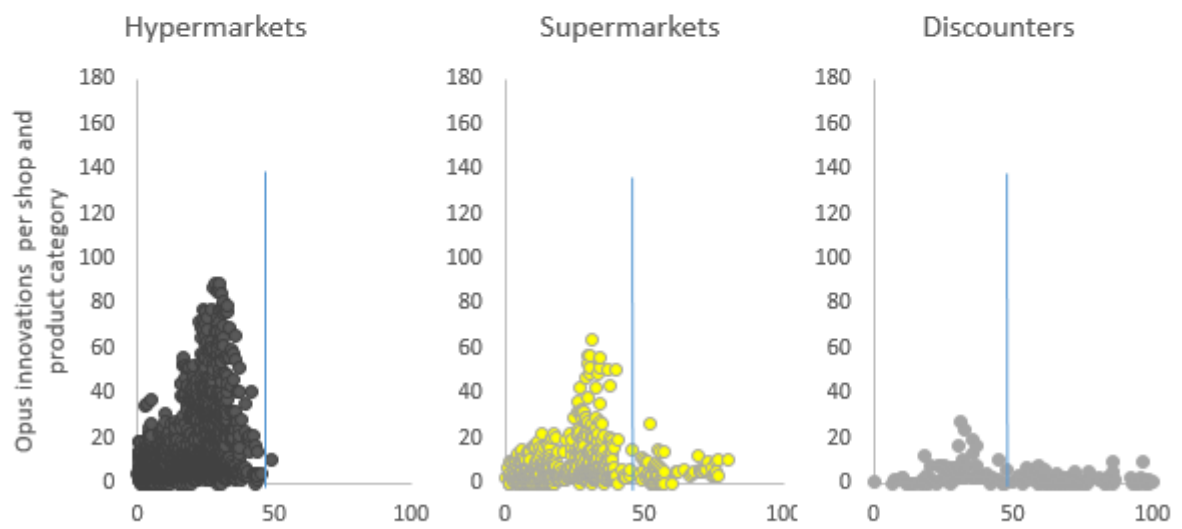
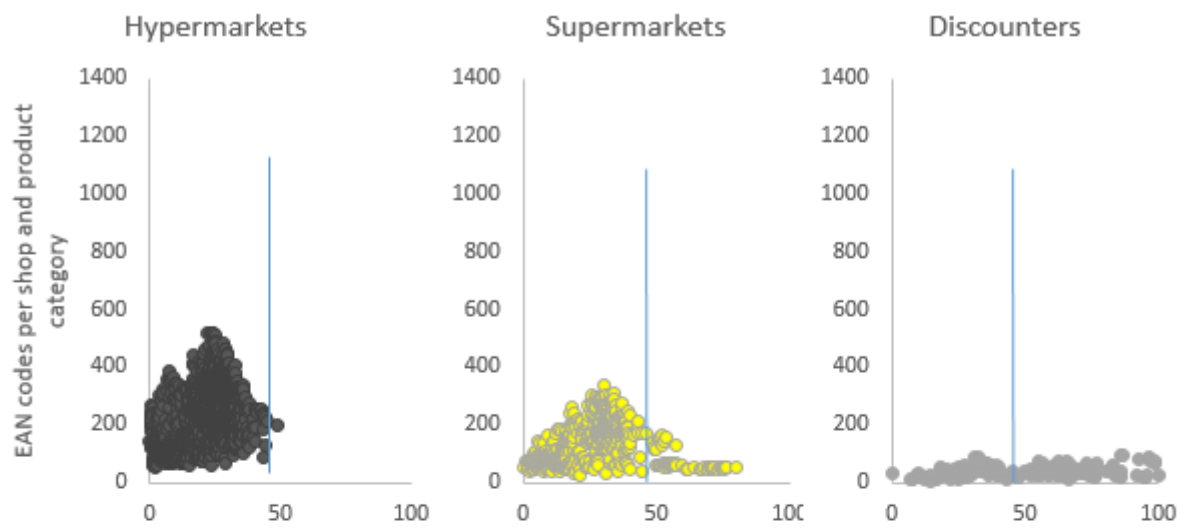
Product category 16 Milk



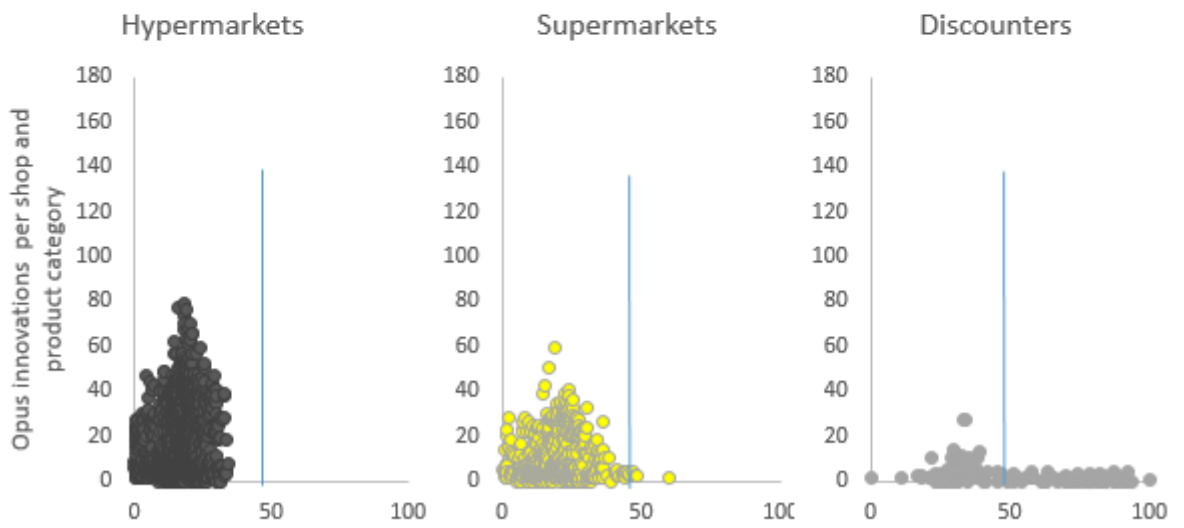
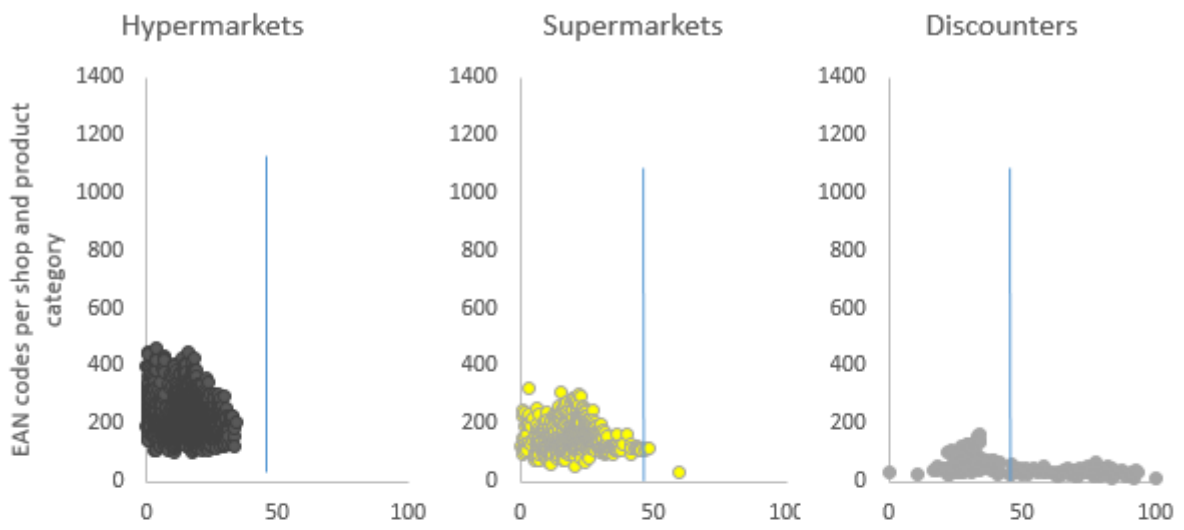
Product category 17 Mineral water



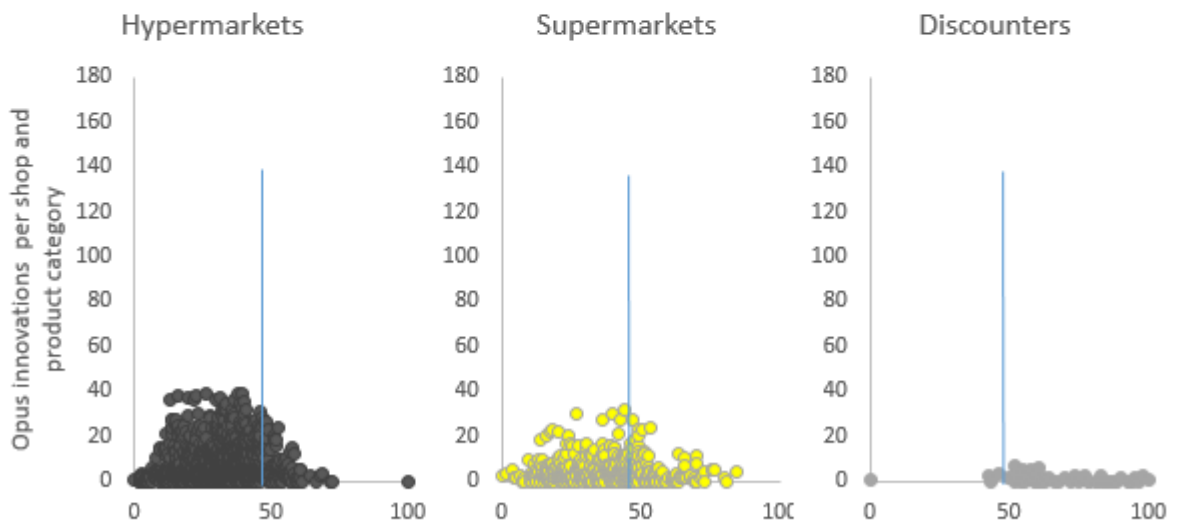
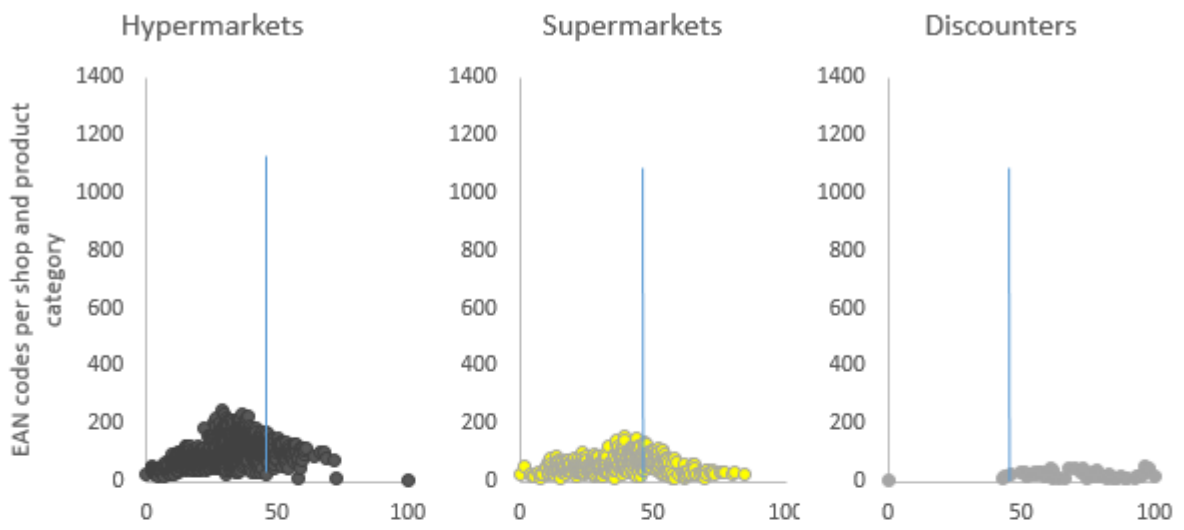
Product category 18 Ready-cooked meals



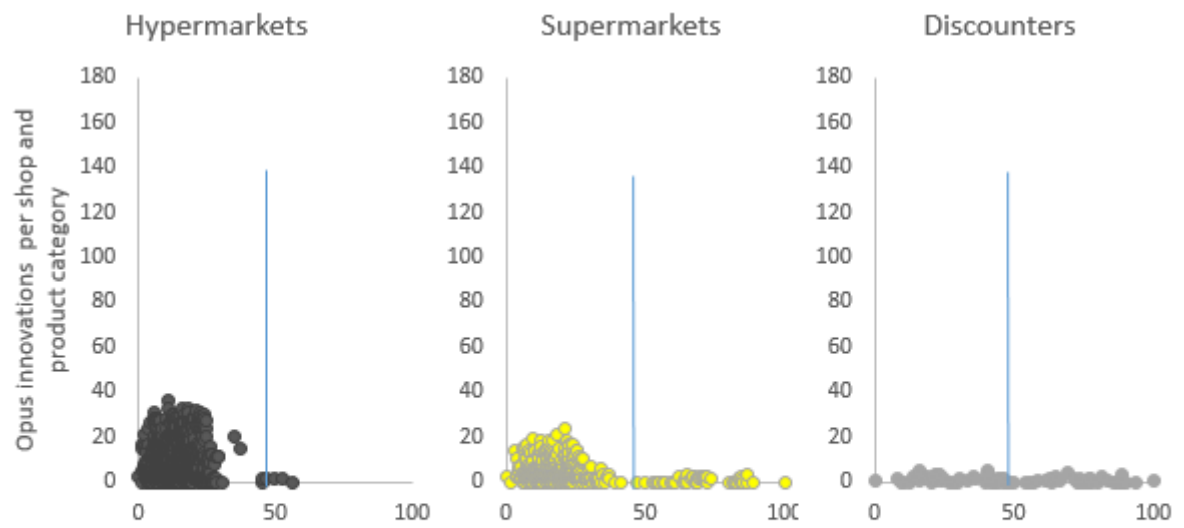
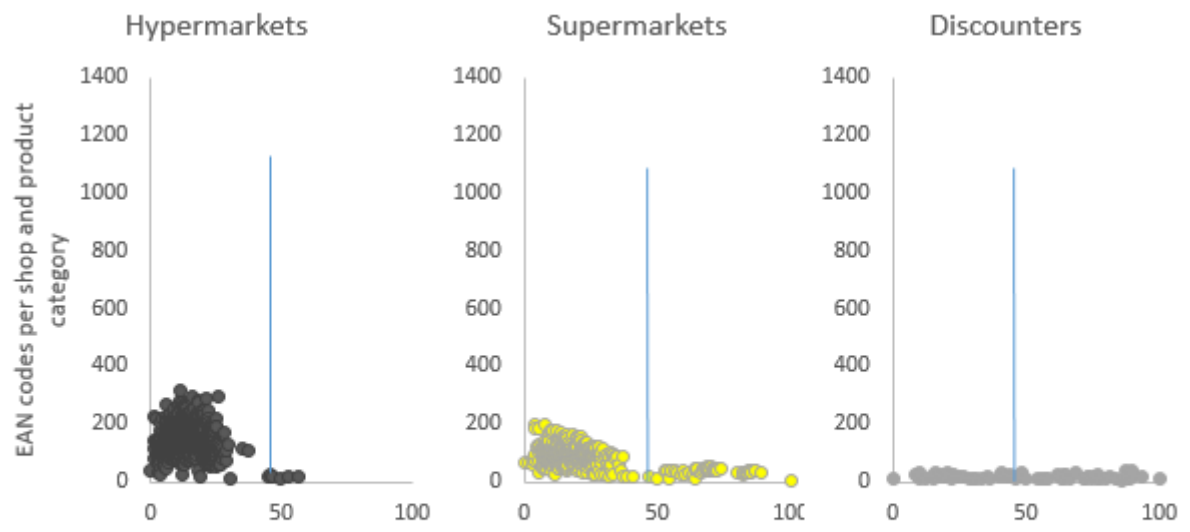
Product category 19 Savoury snacks



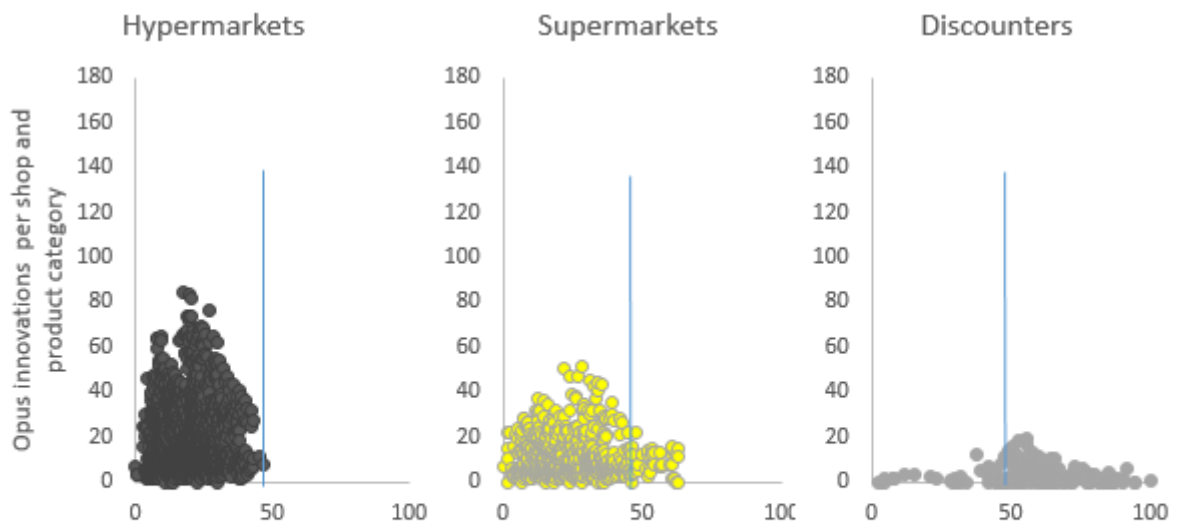
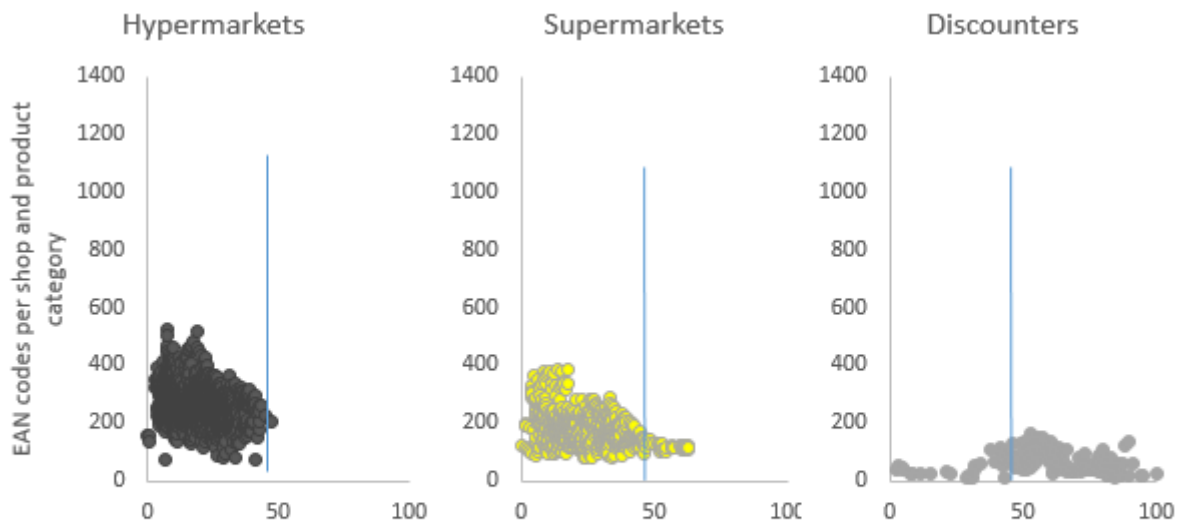
Product category 20 Soft drinks



Product category 21 Starters/pizzas



Product category 22 Tea



Product category 23 Yogurt

European Commission

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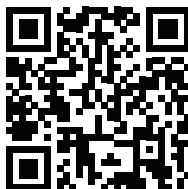
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