

The distributive trade sector and its impact on euro area prices

D. Cornille
J. Langohr

Introduction

The distributive trade sector is the principal link between producers and consumers. The part it plays as an intermediary is reflected in the fact that its value added totals an average of 25% of the consumer price of goods in the euro area. The distributive trade sector is composed of three sub-sectors: wholesale trade, retail trade and automobile trade. The retail trade is particularly important to the economy, because retailers set many consumer prices. As a result, the degree of competition and, more generally, the structural characteristics of the retail segment are critical parts of any analysis of price formation.

Retail trade is constantly evolving, and the forces that have shaped it in recent years have affected its structure, and thus consumer prices and inflation as well. Apart from consolidation and growing internationalisation, we are also seeing, for the euro area as a whole – though to different extents depending on the country – a simultaneous rise in the market shares of discounters, private label brands and online retailers.

This article draws largely on the Eurosystem's 2011 Structural Issues Report (SIR). This October 2011 report, entitled "Structural features of distributive trades and their impact on prices in the euro area", was prepared by a Eurosystem task force in which the NBB took part. Moreover, one source of inspiration for the report was the Bagniet *et al.* article published in the September 2009 Economic Review on the same topic.

The article here aims to pinpoint the current situation in Belgium through a comparison with the past and with the situation in the three main neighbouring countries (Germany, France and the Netherlands), as well as in the euro area overall. It focuses on the retail trade, and more specifically the grocery trade⁽¹⁾, in part because it has the largest market share and in part for practical reasons having to do with the availability of comparable data for all the countries.

The first chapter reviews some of the distributive trade sector's structural characteristics and recent developments. We illustrate the significant weight of distributive trade in the economy, and also note the specific nature of employment in the sector. Following an analysis of market share according to the different categories of grocery points of sale, we look at the three principal recent developments in the retail trade segment (the growing importance of discounters, private labels and online sales). The second chapter focuses on retail industry regulations, relying on two indicators: the OECD's Product Market Regulation indicator, updated for 2010, and a new indicator for point-of-sale opening hours, both calculated using information supplied by the task force. The third chapter is devoted to the competitive landscape, measured by the level of concentration among grocery retailers as well as by profit margin. In addition, the degree of competition at the local level is analysed on the basis of the methodology from the NBB's Bagniet *et al.* article (2009), and the situation in Belgium is compared with that of nine other euro area countries. Lastly, chapter four attempts to describe and illustrate the impact of the sector's degree of competition and structural characteristics on price formation, using several analyses from various angles.

(1) The grocery sector includes not only food products, but also the common household goods sold in supermarkets.

1. Structural characteristics and recent trends

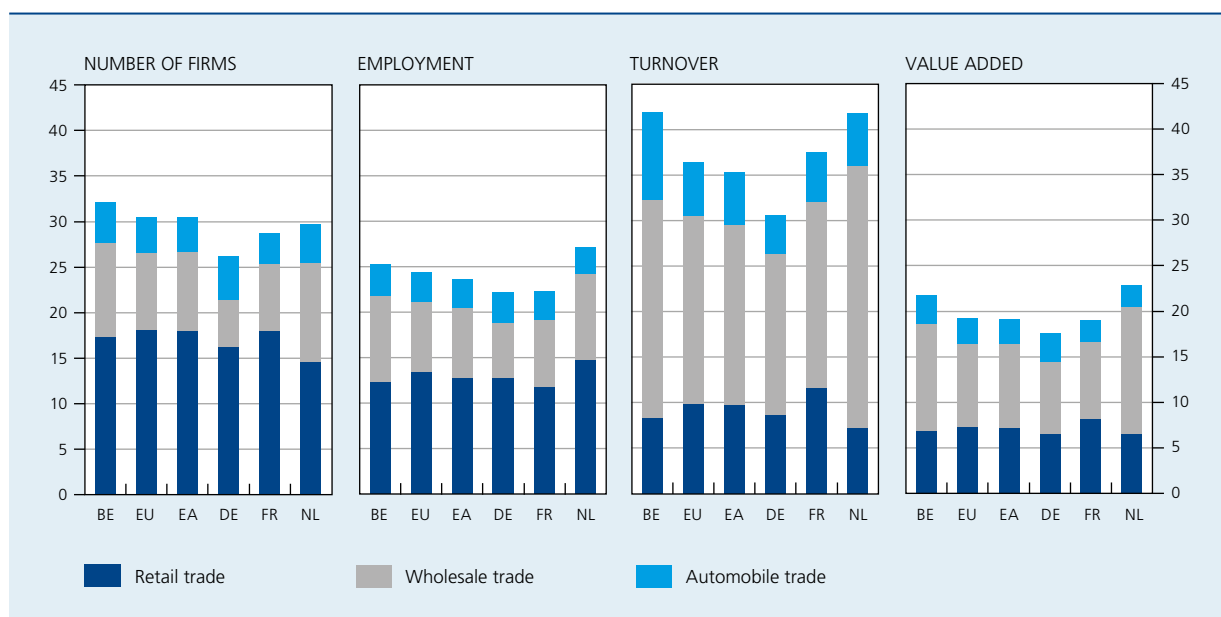
The distributive trade sector comprises a very large number of companies, encompassing all the points of sale within the scope of an economy, regardless of their size (often very small) and the products they sell. For example, in the euro area, three out of ten private sector companies (excluding finance, agriculture and fishing) belong to the distributive trade sector. In Belgium, the proportion is actually one in three, a bit higher than the average in the euro area and in the three neighbouring countries; this difference is attributable primarily to the particularly high number of wholesalers in Belgium (wholesalers alone represent 10.3%), which is a regional logistics centre, as is the Netherlands.

In terms of turnover, the distributive trade sector is an even more important part of the economy. This is essentially due to the wholesale segment, given its role as intermediary between producers and retailers. In Belgium, wholesalers actually generate nearly a quarter (24%) of private sector turnover, excluding the financial, agricultural and fishing sectors. Conversely, they employ relatively few workers and create little added value proportional to their turnover. Furthermore, the wholesale trade is more productive than the retail trade, because it is more capital-intensive. The retail trade,

which is labour-intensive, carries more weight in terms of employment.

This contrasting situation with respect to workers employed within the distributive trade sector must be understood in the context of strong job growth in the sector overall since the launch of Economic and Monetary Union in 1999. Of the 15 million jobs created in the euro area between 1999 and 2009, around one in seven was created in distributive trade. However, the structure of employment in this sector is different from that of the rest of the economy in several respects. For example, distribution, and the retail segment in particular, includes a high proportion of self-employed workers, especially in Belgium, due to the relatively high number of small points of sale, even though this proportion is not as high as in some southern European countries, such as Greece or Italy. Part-time work is also more common in distributive trade (particularly in the Netherlands), and there are more young workers in this sector than in the rest of the economy. This last characteristic is, however, less pronounced in Belgium, although at the euro area level, more than 40% of jobs for the under-25 age group come from this sector. Female workers are also proportionally more prevalent in this sector; at the euro area level, one in eight women is employed in the retail trade. Furthermore, work in the sector is less skilled and less well paid, even by comparison with other sectors with a high percentage of low-skilled workers. The level of

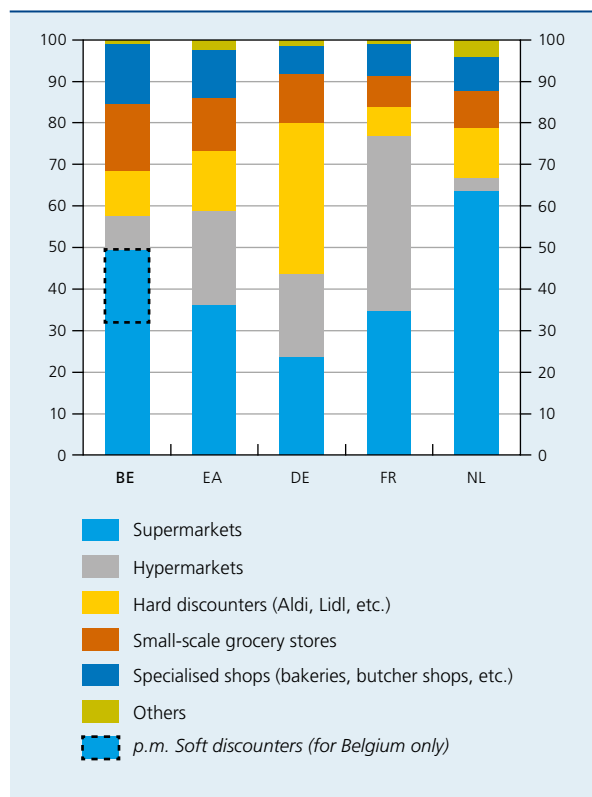
CHART 1 ECONOMIC SIGNIFICANCE OF THE DISTRIBUTIVE TRADE SECTOR
(percentage of the private sector, financial sector excluded, 2007 figures)⁽¹⁾



Sources: Eurostat SBS database and Eurosystem calculations.

(1) Total economy, excluding the financial sector, public sector, agriculture and fishing. 2006 figures for EU value added.

CHART 2 MARKET SHARE OF THE DIFFERENT CATEGORIES OF POINTS OF SALE IN THE GROCERY SECTOR⁽¹⁾
(percentages, 2009 figures)



Sources: Euromonitor and Eurosystem calculations.
(1) The grocery sector includes not only food products, but also the common household goods sold in supermarkets.

union membership is generally low in the sector, but not in Belgium, where it is very high and in fact higher than in the rest of the economy. As a result, distributive trade has a potentially important role to play with respect to growing employment, in particular for specific groups such as low-skilled workers.

This role depends notably on developments in the market shares of the different point-of-sale categories, principally in the grocery sector. It is interesting to note that Belgium and each of its neighbouring countries all have their own specific feature in this field. In Germany, hard discounters have a 36% market share, by far the highest proportion in the euro area. France is dominated by hypermarkets (42% market share), whereas supermarkets are the primary retailers in the Netherlands (64% share) due to the near absence of hypermarkets because of land-use planning rules. Supermarkets are also dominant in Belgium,

(1) Soft discounters have a proportionally higher amount of fresh produce and brand-name goods, whereas hard discounters offer primarily non-perishable goods and private discount-label goods.

with a market share of 50%, although it is important to specify that soft discounters⁽¹⁾ are part of this category and have a market share of 18% all to themselves. This is by far the biggest market share for soft discounters in the euro area (Germany is next with a share of around 10%). Only a couple of Nordic countries (Norway and Denmark) have higher soft discounter market shares.

Another characteristic of Belgium is the greater prevalence of small-scale grocery stores and specialised shops, which have a combined market share of 31%, compared with 24% for the euro area, and even less in each of the three neighbouring countries; this is demonstrated by the abundance – compared with neighbouring countries – of stores in the grocery sector relative to the population. The euro area average is slightly higher than that of Belgium (2.6 stores for 1 000 inhabitants compared with 2.3 in Belgium) due to the influence of southern countries, where small points of sale are still numerous. By contrast, in terms of sales area per 1 000 inhabitants, Belgium is as far ahead of the three neighbouring countries as it is ahead of the euro area average. Figures tracking sales per store confirm the high proportion of small stores in Belgium relative to Germany and especially to France. Figures showing the number of stores relative to surface area, for their part, reflect Belgium and the Netherlands' high population density. The large number of small-sized points of sale in Belgium, and notably of specialised shops, may have an impact on prices, and indicates that in principal Belgium still has room to generate economies of scale. This high proportion may result from the type of regulations that currently govern large outlets, but the high number of specialised shops is undoubtedly also largely attributable to the Belgian consumer's preference for this type of point of sale.

TABLE 1 POINTS OF SALE IN THE GROCERY SECTOR⁽¹⁾
(2009 figures)

	Number of stores per 1 000 inhabitants	Sales per store (in € thousand) ⁽²⁾	Number of stores per 100 km ²	Sales area per 1 000 inhabitants (in m ²)
BE	2.3	1 224	81	546
EA	2.6	890	33	459
DE	1.3	1 480	30	488
FR	1.4	1 866	17	443
NL	2.0	915	81	345

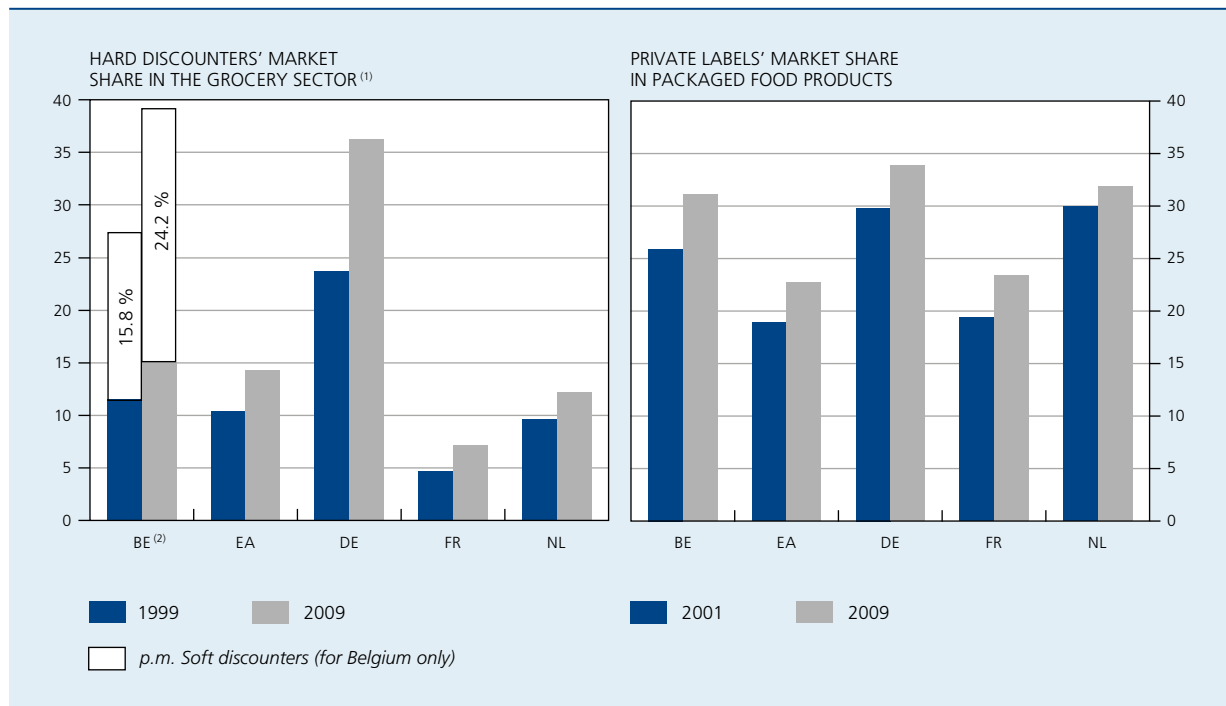
Sources: Eurostat, Euromonitor and Eurosystem calculations.
(1) The grocery sector includes not only food products, but also the common household products sold in supermarkets.
(2) Adjusted for purchasing power parity.

Despite the resilience of small stores and specialised shops in Belgium, the emergence of hard discounters has been one of the most important trends in the grocery sector in recent years. Hard discounters offer relatively little variety in their product range, most of which consists of private-label goods. The sales area is small and the focus is on cutting costs in order to offer the best prices. A distinction is generally made between hard discounters (very low prices, only private labels and a high volume of non-perishable food) and soft discounters (which also offer brand-name goods and more fresh produce). Between 1999 and 2009, the market share of hard discounters rose from 10 % to 14 % in the euro area, but this rise obscures very different trends from one country to the next. Germany and Austria are the two countries where the share of hard discounters is the highest (respectively 36 % and 23 % in 2009), whereas Belgium and the Netherlands fall into a second group in which the market share of hard discounters is over 10 % (respectively 15 % and 12 % in 2009). The high and growing market share of soft discounters is another characteristic of the Belgian market. The development of soft discounters, and especially that of hard discounters, is likely to have an impact on consumer price trends, given that these retailers offer lower-price products. Because hard discounters are

generally smaller in size, they are easier to open than are super- or hypermarkets, and can thus help boost competition despite planning rules. However, it is important to take into account the fact that hard discounters do not target exactly the same consumers and so are not exactly in the same market as super- and hypermarkets, because those retailers' customers make decisions not only based on the price.

Similarly, whereas private labels do not necessarily compete for the same customers as well-established brands, they also disrupt the structure of the retail trade. Private labels are developed by retailers and belong to them, although the retailers do not always produce the goods themselves. These products generally have a high degree of penetration among fairly basic products; packaged food items are one good example. In Belgium, private-label goods' market share in this sub-segment rose from 26 % in 2001 to 31 % in 2009. This market share is among the highest in the euro area. Only in Germany and the Netherlands is the percentage higher. This growth of private labels has been facilitated by the consolidation of the grocery sector, in which a certain number of retailers are present in several countries and have grown big enough to enjoy economies of scale and launch their own brands. Just like the rise of

CHART 3 MARKET SHARE OF HARD DISCOUNTERS AND PRIVATE LABELS
(percentages)

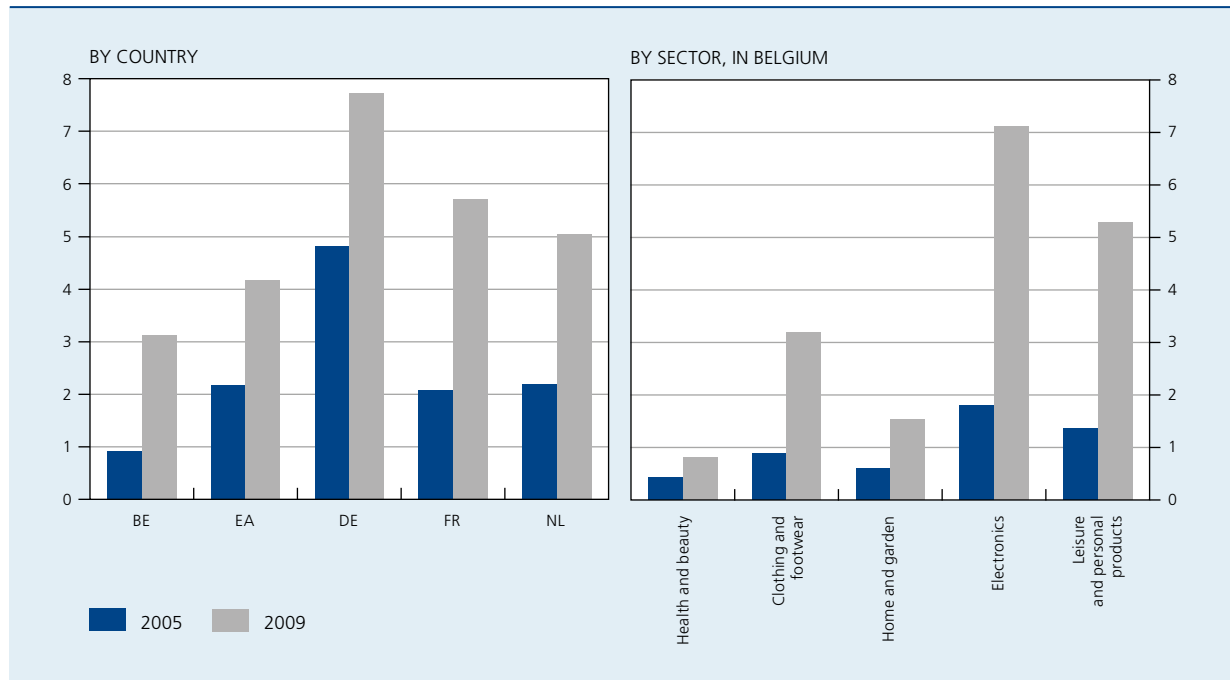


Sources: ACNielsen, Euromonitor and Eurosystem calculations.

(1) The grocery sector includes not only food products, but also the common household products sold in supermarkets.

(2) Only stores larger than 100 m².

CHART 4 SIZE OF THE ONLINE RETAIL SEGMENT
(ratio of online to store-based retail sales, percentages)



Sources: Euromonitor and Eurosystem calculations.

hard discounters, that of private labels can be expected to exert downward pressure on prices.

A downward effect on prices is also likely to result from the surge in online retailing, which is sometimes considered the closest thing to the “perfect market”, where consumers can easily compare prices and geographic location is not very important. Those factors are expected to lead to lower prices and less divergence as a result of better competition and bigger economies of scale. Online retail trade mainly involves particular categories of goods and services which do not include food products, for instance. In Belgium, online retailing is still limited, accounting for just over 3% of store-based sales, compared with a little over 4% for the euro area and 5-8% in the three

neighbouring countries, which have the most developed online commerce in the euro area along with Finland. The growth in online retailing in Europe, and more specifically in smaller countries like Belgium, has been primarily slowed by the barriers that remain between countries, and this explains why barely 2-4% of online transactions cross borders. These barriers are numerous, and include technical, payment, delivery, language and consumer protection problems, or even VAT differences. A recent study by the Federal Public Service Economy⁽¹⁾ also cites weak entrepreneurship in Belgium and the conservative nature

(1) FPS Economy, *La facilitation de l'offre d'e-commerce en Belgique* (Study on facilitating the supply of e-commerce in Belgium). http://economie.fgov.be/fr/binaries/Etude_e_commerce_Belgique_2011_tcm326-133937.pdf

Box 1 – Effects of changes in the structure of distributive trade on inflation measurements

The structural changes identified earlier – the growing share of discounters, private labels and online retailers – have implications for measuring inflation. Two types of problem can arise. On the one hand, if the sample used to create the price index is not adapted to reflect these structural changes, there is a risk that the sample will

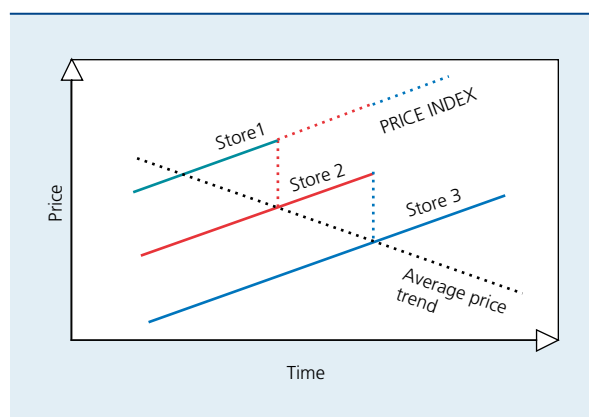


grow progressively less representative. This could lead to errors in measuring inflation, especially if price trends are systematically different depending on the type of store or type of product, and if the relative shares of the different types of stores and products change. This argues in favour of frequently updating the sample of products and points of sale included in the calculation of the consumer price index.

In addition, when the sample is adapted, the methodology used to add new stores and new products is not neutral. In principle, the price level of a new store/product will not be the same as that of the rest of the sample, or that of the store/product that it is replacing. Thus, it makes sense to correct for this price difference and also take into account the difference in quality (the retailer’s quality of service in terms of location, surroundings, presentation, availability of personnel, number of check-out lanes, etc.). In practice, however, national statistical institutes often use a transition method that attributes all of the difference in price to a difference in quality (of the retailer’s service level).

This practice can cause inflation to be overestimated, as illustrated by the following theoretical example. Consider the case of a small store that is replaced by a supermarket whose prices are lower, which is then in turn replaced by a discounter whose prices are even lower. If the price difference is entirely neutralised each time the store is replaced, the lower price levels of the supermarket and discounter will have no impact on the index level. As a result, inflation is overestimated because no price cut is factored in ⁽¹⁾. In the literature, this problem is referred to as “new outlet bias”.

INTEGRATION OF NEW TYPES OF SALES POINTS OR PRODUCTS INTO THE CONSUMER PRICE INDEX



Source : Adapted from Greenlees and McClelland (2008).

It is not easy to quantify this bias exactly, and no estimate is available for Belgium or the euro area. While estimates for countries such as the USA, Portugal, France and Germany for the 1990s indicate that this type of bias was not very significant, in the light of recent, rapid changes in market share among these retail formats, public authorities must nevertheless remain focused on the challenge of correctly measuring inflation. Apart from the importance of frequent sample updating, additional research in the area is desirable, for example in order to correctly estimate differences in quality. In Belgium, the index reform (base 2012 = 100) currently in preparation and which is likely to be applied starting in 2014 (replacing, after eight years, the index 2004 = 100 introduced in 2006) is a chance to guarantee the representativeness of the index by also including an adequate method for sample updating. This will also put the index in a position to incorporate future changes, such as the likely growth of online retailing (in which Belgium currently lags the rest of the euro area).

(1) Unless the price difference does actually only reflect a difference in quality. Nevertheless, the very success of the formats offering lower prices indicates that consumers tend to think that the price difference more than offsets any difference in quality.

of the retail trade sector as further potential obstacles to the development of online retailing in Belgium.

2. Regulation

Distributive trade sector regulations are one of the factors that may explain the material differences observed between the countries of the euro area with respect to the structural characteristics of commerce and employment in this sector, but also recent trends. As a matter of fact, Belgium is not in a very good position when it comes to retail trade regulation. According to the OECD's Product Market Regulation (PMR) indicator, only the Grand Duchy of Luxembourg has more restrictive regulations than Belgium. The PMR

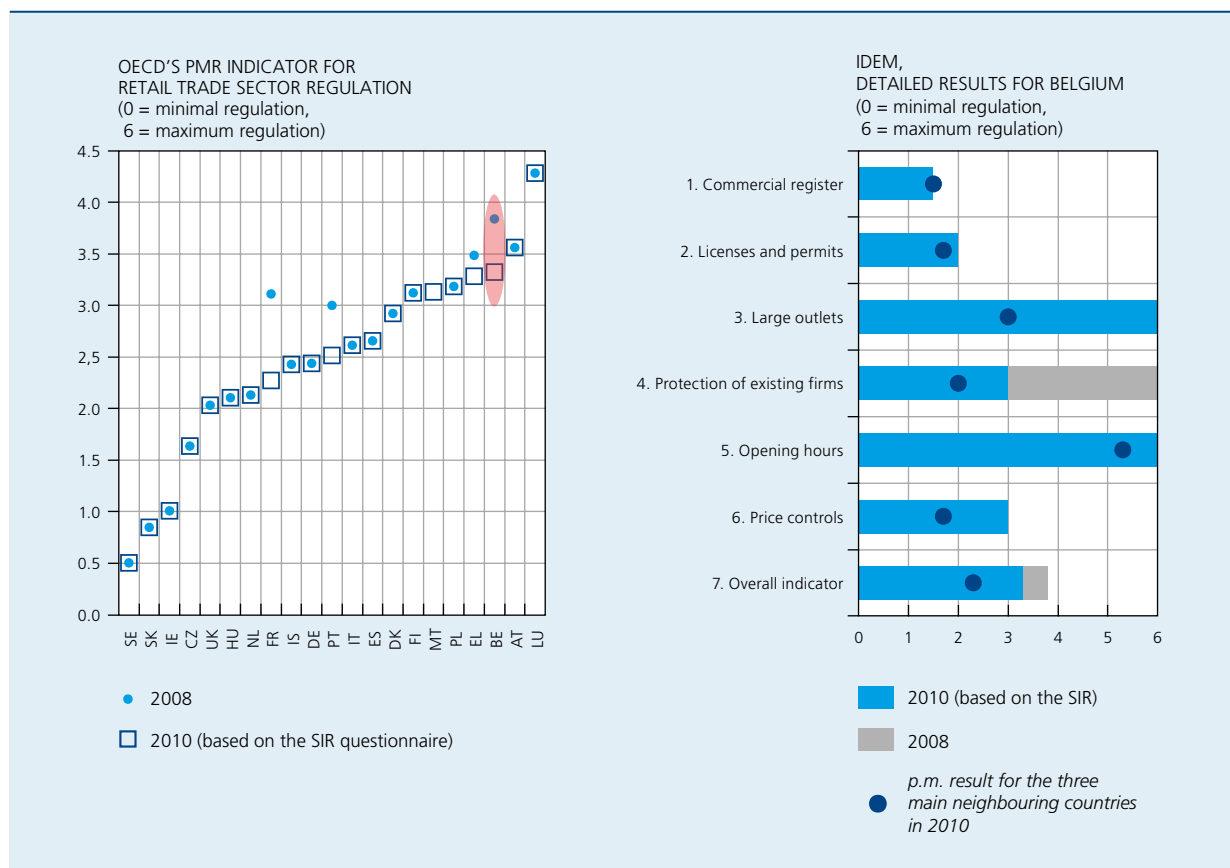
indicator is calculated using six base indicators that draw on qualitative data collected from the various countries concerned and codified on a standardised scale of 0 to 6. A higher score indicates more restrictive regulation⁽¹⁾. While the indicator's simplicity is clearly an advantage, it is also a limitation. The criteria used sometimes offer a rudimentary view of reality, as questions often ask for straightforward binary (yes/no) answers. Furthermore, the PMR is calculated based on the existence of rules rather than their content.

The principal laws and provisions that explain Belgium's poor ranking are the planning rules for large retailers, legally protected monopolies (pharmaceuticals), protections for existing firms, and laws governing opening hours. Furthermore, these are the regulations most often cited as potential obstacles to retail businesses, along with the Law on market practices and the protection of consumers, which covers a wide variety of provisions (seasonal sales, combined sales, etc.)⁽²⁾.

The OECD has published this indicator every five years since 1998. The most recent figures (February 2009)

(1) The six base indicators are: registration with the commercial register (for the sale of food products), licences or permits needed to carry out a commercial activity (for the sale of food products), specific regulations for large outlets (in practice, only the minimum surface area to which regulations apply), protection of existing firms, opening hours (whether or not regulation exists and, secondarily, whether the regulation is national or local), and price controls (questions subdivided by product category). For detailed information on this indicator, see Box 1 in Baugnet *et al.* (2009).
 (2) For detailed information on these regulations, see Baugnet *et al.* (2009).

CHART 5 REGULATION OF THE RETAIL TRADE



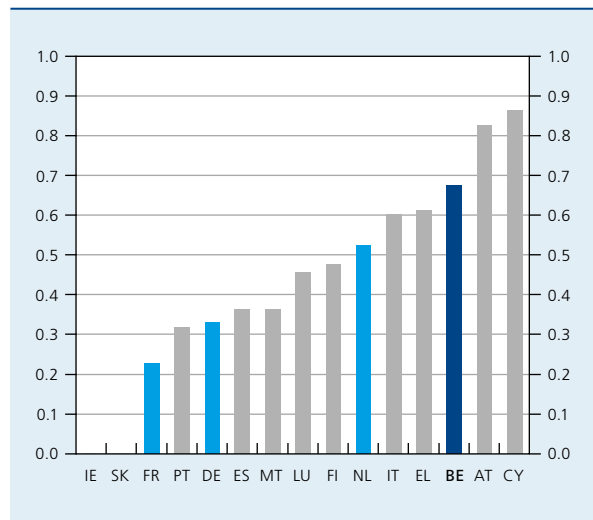
Sources: OECD and Eurosystem calculations.

refer to 2008. In the Structural Issues Report, however, the various national central banks (NCBs) were asked to update the questionnaire that the OECD uses to calculate its indicator using data for the year 2010. The goal was to evaluate any progress made since 2008. In the four countries that have made changes to regulations since 2008 – Belgium among them – all of the changes involved easing regulations, resulting in a (modest) drop in their indicators, according to unofficial Eurosystem estimates. Even so, Belgium remains at the back of the pack, although it has now caught up with Austria.

This drop in the Belgian indicator, according to the SIR, is due to the assessment of the “Ikea” Law’s effect on the protection of existing firms. Whereas economic criteria will no longer be considered in granting licences and permits – stipulated by the Law of 22 December 2009 transposing the Services Directive into national legislation – thus easing these restrictions, it is the assessment of the limited role of the representatives of professional organisations that is influencing the degree of regulation estimated in 2010. The Directive effectively forbids the involvement of professional organisations in permitting decisions, but, when the Directive was transposed, the legislature did not do away with the consulting role of the National Socio-Economic Committee for the Retail Sector (NSECRS), implicitly recognising that its non-binding opinions could not be considered an intervention in the decision. While this aspect of the legislation remains open to criticism, in any event the EU Directive takes precedence over the national legislation. Nevertheless, it is by no means certain that the OECD would make the same interpretation, so the progress actually observed would not necessarily be recorded as such by the official indicators.

One of the criteria taken into consideration for the PMR is the legislation on opening days and hours. This is a sensitive topic, because it deals with cultural and societal norms. In Belgium, opening days and hours in the retail trade are governed by the Law of 10 November 2006⁽¹⁾. The criterion used by the OECD for the PMR indicator is the existence of relevant regulations, and the fact that it is a national regulation is an aggravating factor⁽²⁾. This being the case, Belgium receives a maximum score of 6, like many other countries. To better gauge the flexibility of opening hours, it makes sense to look at the actual extent of the regulation. To this end, the Eurosystem created a new specific indicator focusing solely on regulations governing opening hours. It draws on information supplied by the members of the task force for the 2011 SIR (see Box 2 for more details). According to this indicator, Belgium is still one of the most restrictive countries, coming in ahead of only Cyprus and Austria. The explicit obligation to be closed one day of the week is particularly detrimental to

CHART 6 EUROSYSTEM INDICATOR FOR OPENING HOURS REGULATIONS
(0 = minimum regulation, 1 = maximum regulation)



Sources: OECD and Eurosystem calculations.

Belgium’s score⁽³⁾. However, when interpreting this indicator, it must be kept in mind that retailers often, especially in Belgium, decide not to operate the maximum number of hours allowed by law, which means that the average number of hours stores are open is below the legally allowed ceiling. The collective bargaining agreements in place in the retail trade sector probably have something to do with this as well.

Even so, there is substantial correlation between country rankings according to the OECD’s PMR indicator and the opening hours indicator (Spearman rank correlation of 0.73, significant at 99.5%), which indicates that the penchant for regulation tends to affect multiple aspects of a sector, and that Belgium appears to suffer from legislative creep. Progress has been made, admittedly, largely due to the transposition of EU Directives, but a real effort to simplify and streamline existing laws needs to be made. Even though not all regulations are restrictive, the mere

(1) This law consolidated and updated earlier legislation from 1960 and 1973 without altering the main concepts. With respect to opening days, the principle is that businesses must be closed one day a week, or rather an uninterrupted 24-hour period starting on the business’ chosen day – Sunday by default, but not necessarily – at 5:00 am or 1:00 pm. With respect to opening hours, the principle is that businesses may be open between 5:00 am and 8:00 pm from Monday to Saturday, and until 9:00 pm on Friday and the day before legal holidays. Three types of exceptions may be granted: depending upon the type of business (transport hubs, newsstands, petrol stations, etc.), for exceptional circumstances (15 days per year maximum) and in tourist areas.

(2) For example, the UK – a country where opening hours are virtually unlimited but nevertheless governed by specific legislation – receives the maximum score. Conversely, Germany receives a lower score because the *Länder* are responsible for opening hour laws.

(3) In other countries, such as France for example, there are indirect regulations governing opening hours via labour laws (Sunday opening hours). The indicator does not take these into account.

Box 2 – Methodology of the Eurosystem indicator for opening hours regulations

Because of the limitations of the PMR indicator for opening hours, the Eurosystem developed a new, more detailed indicator exclusively designed to accurately reflect the maximum number of store opening hours and days authorised under national law. For countries with a variety of regulations at the regional and local level, the regulations most representative of the national legislation are used.

The indicator is based on six variables, chosen to reflect the period during which stores are not authorised to open:

1. Time of day from which stores are authorised to open (between 0 and 24; average for all days of the week, Sunday included; if opening on Sunday is unauthorised, the variable takes the maximum value of 24);
2. Time of day by which stores must be closed (same as for variable 1, but defined as equal to 24 minus the weekly average so that a high value accurately reflects a restrictive regulation);
3. Maximum number of opening hours per day (defined as equal to 24 minus the maximum number of opening hours);
4. Maximum number of opening hours per week (defined as equal to 168 [7x24] minus the maximum number of opening hours);
5. Minimum number of closing days per year;
6. Minimum number of Sundays and holidays when stores must be closed (defined as equal to 52 minus the maximum number of Sundays and holidays when stores may be open).

Each variable is re-graded on a scale of 0 (minimum regulation) to 1 (maximum regulation). The variables are put into three groups: limits on opening and closing hours (variables 1 and 2), maximum number of daily and weekly opening hours (variables 3 and 4) and minimum number of closing days per year (variables 5 and 6). Each group is assigned a weight of one-third, and within each group, the weight is divided either equally (group 2) or unequally (weights of 0.75 and 0.25) in order to give greater weight to variables thought to best reflect the constraints (variables 2 and 6).

In the euro area (with the exception of Slovenia and Estonia), only Ireland and Slovakia have no opening hours regulations. Among the other countries, only Italy is governed by local regulations rather than national regulations. Certain countries (Germany, Netherlands, Portugal and Spain) have national, regional and local laws. Belgian legislation stands out because of the fact that it requires a minimum of 52 closing days per year (one day a week), an obligation that exists in only two other countries, but which is much more flexible in those countries: 4 days minimum in Greece and 10 days minimum in Cyprus. The new indicator does not, however, take exceptions into account. These are relatively significant in Belgium and fall into three categories: according to the type of business (transport hubs, newsstands, petrol stations, etc.), for exceptional circumstances (15 days per year maximum) and in tourist areas. As for regulations governing opening hours and times, Belgium has more regulations than any other euro area country, but they are not necessarily the most restrictive. For example, with regard to the maximum number of opening hours per day, Austria, Finland, Italy and Cyprus impose a lower limit than Belgium does. The same is true of the maximum number of opening hours per week, where Austria, Portugal, Spain and Cyprus are also more restrictive than Belgium.



EURO AREA OPENING HOURS REGULATIONS⁽¹⁾

	AT	BE	FI	FR	DE	EL	IE	IT
Existence of regulation	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes
Type of regulation	National	National	National	National	Nat./Reg.	National	National	Local
Maximum number of opening hours per day	15	16	14			16		13
Maximum number of opening hours per week	72	91						
Opening time								
Ordinary weekdays	6	5	7			5		7
Saturdays	6	5	7			5		7
Sundays and holidays		5	12		13	5		7
Special weekdays		5						
Closing time								
Ordinary weekdays	21	20	21			21		22
Saturdays	18	20	18		20	20		22
Sundays and holidays		20	18		18	20		22
Special weekdays		21 ⁽²⁾						
Minimum number of closing days per year		52 ⁽³⁾				4		
Maximum number of opening days on Sundays and holidays	0	15		5	4	2		14
Exceptions to the general regulations ...	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes
	LU	NL	PT	SK	ES	CY ⁽⁴⁾	MT	
Existence of regulation	Yes	Yes	Yes	No	Yes	Yes	Yes	
Type of regulation	National	Nat./Loc.	Nat./Loc.	National	Nat./Reg.	National	National	
Maximum number of opening hours per day			18			15		
Maximum number of opening hours per week			61		84	84.5		
Opening time								
Ordinary weekdays	6	6	6			5	4	
Saturdays	6	6	6			5	4	
Sundays and holidays	6	6	8		11		4	
Special weekdays								
Closing time								
Ordinary weekdays	21	22				20	19	
Saturdays	18	22				20	20	
Sundays and holidays	13	22			23		22	
Special weekdays						15 ⁽⁵⁾		
Minimum number of closing days per year						10		
Maximum number of opening days on Sundays and holidays		12			8	0		
Exceptions to the general regulations ...	No	Yes	Yes	No	Yes	Yes	Yes	

Sources: Eurosystem calculations based on information supplied by the OECD and the NCBS.

(1) If there is no specific regulation, the space is left blank.

(2) Friday.

(3) One day per week.

(4) Regulation for summer opening hours. In winter: the maximum number of opening hours is 14.5 per day and 82 per week, and the closing time is 7:30 pm during the week and 7:00 pm on Sundays.

(5) Wednesday.

fact that they exist can influence market participants' perception of obstacles. This is likely to limit competition and be a source of inefficiency.

3. Competition

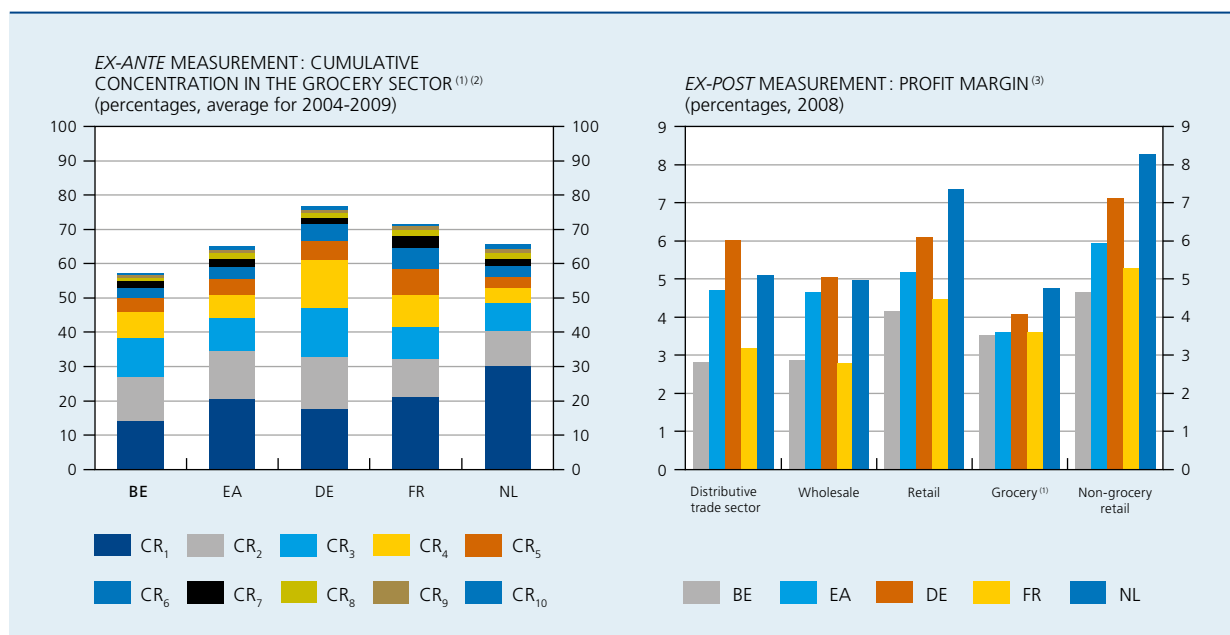
To assess the potential consequences of regulatory constraints, and thus to analyse the effective level of competition in the Belgian distributive trade sector compared with that of the euro area and neighbouring countries, several dimensions must be taken into account. The first is the geographic dimension; we can look at several levels: local, regional, national, international, or a combination of those. The second is the sector dimension, because not all retailers compete in the same market. For example, pharmacies do not compete with clothing stores; on the other hand, a grocer can wind up competing with various forms of retailers (supermarkets, online sellers, petrol stations, etc.). A third dimension is the segment of consumers targeted by the retailer. A supermarket offering a wide variety of products is not in direct competition with a hard discounter offering only a limited number of its private discount-label products, even though both belong to the grocery sector. Lastly, we can also make

a distinction between downstream competition, or competition between retailers vis-à-vis consumers, and upstream competition, or competition between retailers vis-à-vis suppliers. This last dimension, however, is outside the scope of this article.

We initially analyse competition in the grocery sector at the national level. We have used two tools to quantify the level of competition: measures for concentration and for profitability. Measuring a market's concentration is an *ex-ante* measurement in the sense that, even if we expect a negative correlation between concentration and competition, this is not always borne out by the facts given the possibility for explicit or implicit collusion, or even barriers to entry or regulations preventing any sector consolidation. Thus, weak concentration does not guarantee strong competition, just as strong concentration does not automatically prevent competition. Furthermore, the advantages of strong concentration linked to efficiency gains may offset the negative effects of weak competition.

To calculate market concentration, we use the *k*-firm Concentration Ratio – CR_k , i.e. the sum of the market shares of the *k* largest companies present in a market. According to this measurement, we note that the Belgian grocery

CHART 7 COMPETITION IN THE DISTRIBUTIVE TRADE SECTOR



Sources: Euromonitor, Eurostat and Eurosystem calculations.

(1) The grocery sector includes not only food products, but also the common household products sold in supermarkets.

(2) CR_k = Concentration ratio of the *k* largest companies in terms of market share, calculated by adding together their market shares.

(3) Adjusted to account for the income of self-employed workers.

market is less concentrated overall than the average in the euro area and the three neighbouring countries, regardless of the value chosen for k up to the tenth company. The Belgian grocery sector is, after Slovakia, the least concentrated in the euro area excluding the southern countries – Greece, Spain, Italy and Portugal – where concentration is weaker due to the abundance of small shops⁽¹⁾.

Because the concentration measurement does not tell us with certainty what the level of competition is, it is useful to pair it with a profitability measurement, which may be considered an *ex-post* measurement⁽²⁾. In Belgium, the profit margin in the grocery sector is relatively small (Belgium ranks better in the euro area according to profit margin, 4th, than it does according to concentration, 6th, as measured by the CR_5). If we take into account the various distributive trade sub-sectors, we note that the profit margin in Belgium is lower than the average in the euro area and the three neighbouring countries, with the exception of the wholesale segment profit margin, which is slightly weaker in France. If we consider distributive trade as a whole, the profit margin in Belgium is actually the weakest of any euro area country. The combination of weak concentration and a small profit margin suggests a relatively high level of competition in the grocery sector in Belgium.

In Germany and France, the grocery sector is relatively concentrated, but that does not appear to prevent competition. Indeed the profit margins in those countries are relatively narrow. This is even more the case in Austria, where the market is highly concentrated as the margin is very low. In Greece and Spain, the situation is reversed: grocers are the least concentrated in the euro area, but profit margins are the highest (with the exception of Slovenia).

Whereas national competition measurements suggest a relatively high level of competition in the grocery sector in Belgium compared with the average in the euro area

and neighbouring countries, it remains to be seen if the same is true at the local level. In fact, national concentration measurements can overestimate the competition in a market if there is collusion with retail chains splitting up a geographic market, leading to a lack of competition at the local level⁽³⁾. However, the criteria for the local market have yet to be defined, and would not be the same for a densely populated urban area and a sparsely populated rural area. Analysing the distribution of grocery points of sale in Belgium with a sales area of over 100 square metres, as was done in Bagniet *et al.* (2009)⁽⁴⁾, it appears that the location of stores matches expectations, i.e. it is determined by population density, and that it does not appear to be dysfunctional in general.

The study presented in the 2011 SIR covers ten euro area countries, including Belgium, and thus provides a complement to the observations in Bagniet *et al.* (2009). In addition to national concentration, the study measures local concentration at the level of individual stores and parent companies (because two local stores that belong to the same parent company cannot be considered true competitors). Market shares are calculated on the base of sales areas in square metres⁽⁵⁾, and the local market is defined as the sum of the retailers present within a radius of five or ten kilometres⁽⁶⁾. Concentration at the local level was measured using the Herfindahl-Hirschman Index (HHI). Data on the location of points of sale in 2010 were taken from Ac Nielsen, which covers nine countries and 130 000 points of sale, and from FPS Economy for data on Belgium. This list was then converted into a geographic database by using geocoding services, which

(1) An alternative to the CR_k indicator is the Herfindahl-Hirschman Index (HHI). This index takes into account all the firms participating in the market, but gives greater weight to those with larger market shares (using the sum of the squares of the companies' market shares). The index ranges from 0 to 10 000, from perfect competition to a pure monopoly. In general, it is considered that an HHI over 1 800 indicates a highly concentrated market, and that below 1 000 the market is weakly concentrated. The average HHI for 2004-2009 for the grocery sector confirms the results of the CR_5 , as the HHI for Belgium is 590, less than the average for the euro area (979) and the three neighbouring countries (DE: 1 018, FR: 863, NL: 1 162). If we look only at the supermarket segment (non-specialised, self-service food retailers), as was the case in Bagniet *et al.* (2009), the concentration is higher, with an HHI of 1 890 in Belgium (based on the turnover of the seven biggest companies).

(2) Given that there are proportionally more self-employed workers in the retail trade, and especially in the southern countries, we have adjusted profit margins to account for the implied compensation of the self-employed worker, by stripping it out of the margin.

(3) Conversely, concentration at the national level may underestimate competition if a few retail chains present in the country are systematically present in every local market.

(4) See the map on p. 44 of Bagniet *et al.* (2009).

(5) This indicator was used because it was available for all countries. Alternative indicators for measuring market share are the number of cash registers or turnover. For countries where it is possible, the three indicators were calculated, and the correlation between the three indicators is above 0.9.

(6) Using a methodology similar to that used in Bagniet *et al.* (2009), which took its cue from a study published in 2008 by the UK Competition Commission (UKCC).

TABLE 2 CONCENTRATION ON THE BASIS OF POINT-OF-SALE DATA

	National market	Local markets (5 km)	
	by group	by store	by group
Three highest	Finland Austria Netherlands	France Finland Portugal	Finland Portugal France
Middle four	Germany France Belgium Portugal	Greece Germany Belgium Spain	Netherlands Germany Greece Spain
Three lowest	Spain Italy Greece	Italy Austria Netherlands	Italy Austria Belgium

Source: Eurosystem calculations based on the Ac Nielsen database of point-of-sale locations.

makes it possible to turn addresses into geographic coordinates such as those used by GPS systems.

In Finland, the strong concentration at the national level is confirmed at the local level, but such is by no means the case for every country. Whereas at the national level, southern European countries exhibit the weakest concentration for the grocery sector as a whole, reflecting the fact that those countries still have a large number of small businesses, it is far from the case when we analyse the situation at the local level for points of sale over 100 square metres. Whereas Italy and, to a lesser extent, Spain, also have a low level of concentration locally, this is not true of Greece or Portugal.

As for Belgium, its position is average both at the national level by group and at the local level by store. By contrast, if we examine local concentration at the parent company level, which is clearly the most relevant measure, Belgium is characterised by the weakest concentration of any of the countries included in the study⁽¹⁾. Among the neighbouring countries, France exhibits the highest concentration at the local level, followed by the Netherlands and Germany, whose situation is more intermediate⁽²⁾. The research by Baugnet *et al.* (2009) already showed a weak level of concentration at the local level in Belgium, based on a comparison with the results of two studies devoted to concentration at the local level in the UK and France. The SIR study, which covers – using a harmonised methodology – Belgium and nine other euro area countries, confirms this weak level of concentration at the local level in Belgium.

4. Impact on prices

The retail sector, and more specifically the grocery sector, is characterised in Belgium by both a high degree of competition and a significant penetration by discounters and private labels, but not by online retailers. It is useful to study the ties between these characteristics and price formation, in particular in the context of a very invasive regulatory environment. Competition, structural characteristics and regulations can all potentially affect both price levels and price dynamics. The effect of tougher competition

on the price level is theoretically a downward impact because the mark-up is lower in a competitive situation. The market will also tend to adhere more closely to conditions compatible with the law of one price (LOOP), which stipulates that, in an efficient market, each identical good must be sold at the same price at every point of sale in the market. The upshot is a lesser dispersion of price (levels) (for homogeneous products), and a lesser dispersion of price (levels) between countries, given the existence of a common market and the introduction of the euro.

Furthermore, because competition has the effect of reducing mark-ups, companies have less leeway to avoid passing on cost fluctuations, and this influences price dynamics, i.e. inflation. The result is more frequent price adjustments (confirmed by the results of the Inflation Persistence Network, updated at the time of the 2011 SIR⁽³⁾), a more pronounced and swifter transmission of costs, and thus a more volatile inflation rate. In a competitive market, there will also be greater symmetry in the transmission of cost fluctuations between cost increases and decreases.

It remained to be seen if these expected theoretical effects would be confirmed empirically, which was done in the context of the SIR. For example, to analyse and identify the factors that influence the dispersions of price levels among countries, one of the approaches used consisted in building a model dealing with eleven euro area countries (the first twelve Member States, with the exception of the Grand Duchy of Luxembourg) and 146 products, while incorporating both the classic determinants of price level inequalities identified in the literature and a series of variables describing the differences in structure in the distributive trade sector. The results of this panel-type estimate based on product⁽⁴⁾ and country dimensions (with fixed effects for products and countries) partially match theoretical expectations.

With respect to the classic determinants, relative income levels and VAT rates have a significantly positive effect on price differentials. It is assumed that higher standards of living go hand in hand with higher price levels. As for VAT, a certain degree of harmonisation notwithstanding, gaps remain among the Member States that influence differences in price level. In addition, the intensity of spending negatively affects price gaps. This indicator measures consumers' attentiveness to prices: they pay more attention to higher-priced items and/or those that account for a large share of their spending (literature on rational inattention⁽⁵⁾). For example, if Italian households consume more pasta than those in other countries, they will probably spend more time researching and comparing pasta prices, and we can expect those efforts to affect price differences. Population density also negatively influences

(1) For both a 5km and 10km radius. In the case of Belgium, this consolidation between different entities belonging to the same group was applied to the fullest extent to avoid underestimating concentration. For example, Spar stores are considered to belong to the Colruyt group. Even using such an approach, which could overestimate concentration at the local level, the Belgian market emerges as the least concentrated.

(2) If we measure competition at the store level, concentration is weakest in the Netherlands.

(3) The principal findings being that greater competition is associated with more frequent price changes in the retail sector and more particularly in supermarkets and hypermarkets, although their magnitude is not bigger on average.

(4) Based on the 146 series of products available in the Eurostat purchasing power parities (PPP) database.

(5) See, for example, Sims (2003).

TABLE 3 SUMMARY OF THE ECONOMETRIC ANALYSIS OF FACTORS AFFECTING DIFFERENCES IN PRICE LEVELS BETWEEN COUNTRIES⁽¹⁾

Classic determinants

Income level	Positive
VAT	Positive
Spending intensity	Negative
Population density	Negative

Variables that measure the structural characteristics of the distributive trade sector

Concentration (HHI)	Negative
Concentration (CR ₅)	Positive
Profitability	Positive
Regulation (barriers to entry)	Positive
Regulation (price controls)	Negative
Regulation (operational restrictions)	(2)
Regulation of the labour market (EPL) ⁽³⁾ ..	Negative

Source: 2011 SIR.

(1) Analysis covering eleven euro area countries (the first twelve Member States, excluding the Grand Duchy of Luxembourg) and 146 products.

(2) Not statistically significant.

(3) EPL refers to the OECD's Employment Protection Legislation indicator.

price levels because high density is likely to be accompanied by greater efficiency (a densely populated area offers a larger market, permitting economies of scale, for example, or a more optimal point-of-sale size, which would be impossible to achieve in a more sparsely populated area).

With respect to the variables intended to measure the structural characteristics of the distributive trade sector, the picture painted by those dealing with concentration appears to be contradictory at first glance. On the one hand, the CR₅ degree of concentration appears to exert an upward pressure on the price level, suggesting that more competition would effectively reduce prices. On the other hand, the HHI indicator points in the opposite direction, as it is associated with a downward pressure on prices. This apparent contradiction is ultimately not so surprising, given the ambivalence of the theoretical impact of concentration on prices: it drives prices upward by reducing competition but drives them downward by improving efficiency (tied to returns to scale).

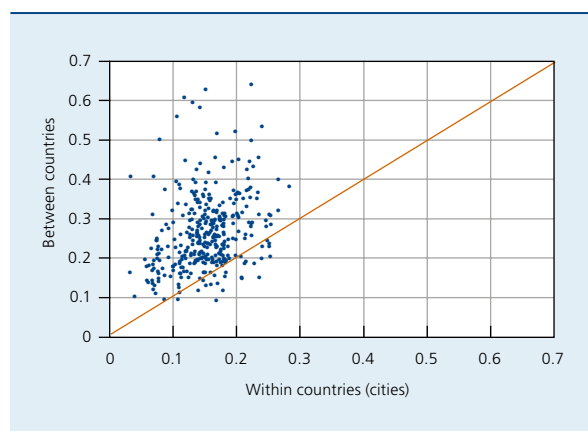
The indicator based on profitability (adjusted to account for the implied incomes of self-employed workers) shows the expected sign: prices are higher when this indicator is high. Lastly, the variables reflecting the degree of

regulation give mixed results: only the indicators related to barriers to entry show the expected positive sign. By contrast, operational restrictions do not have a significant impact, whereas greater price controls and labour market regulation exert downward pressure on prices.

Overall, these results suggest that structural characteristics can have an impact on price levels. They may thus explain the divergences observed within the euro area. The creation of the common market and introduction of the euro notwithstanding, and despite a certain convergence between the mid-1990s and the mid-2000s, there are still significant inequalities in the prices of goods among euro area countries, although they are smaller than the differences in services prices. Belgium is among the most expensive countries, with a price level more than 10% higher than the euro area average. The only countries with higher prices are Ireland, the Grand Duchy of Luxembourg and Finland, and Belgium is just ahead of France, whereas the Netherlands and especially Germany have lower price levels. Belgium's price level gap relative to the euro area average has steadily widened since 2003.

Knowing that there remains a significant dispersion in prices among euro area countries, it makes sense to ask whether the dispersion among countries is greater than what exists within each country. If the dispersion of prices between two cities in the same country is smaller than that between two cities the same distance apart but in two different countries, that means that there is clearly a "border effect". To do this, the SIR uses highly detailed

CHART 8 DISPERSION OF THE PRICES OF 356 FOOD AND NON-ALCOHOLIC DRINK ITEMS BETWEEN COUNTRIES AND WITHIN COUNTRIES (coefficients of variation)⁽¹⁾



Source: Eurosystem.

(1) The dispersion within the countries refers to the median of the coefficients of variation of prices within each country, and the dispersion between the countries refers to the coefficient of variation of the national average prices.

data on the prices of 356 food products in different cities in the euro area. By comparing for each product the median of the coefficients of variation of prices within each country with the coefficient of variation of the national average prices, we can see that the dispersion in prices among the countries is generally higher than the dispersion within the countries (most points fall above the 45-degree line).

To verify that the border effect shown by this analysis does not simply hide a distance effect, due to the fact that cities in different countries are often farther away from each other than are cities within a country, an additional study was performed looking at four German cities (Berlin, Bonn, Karlsruhe and Munich) and four cities in four countries bordering Germany (Amsterdam, Brussels, Luxembourg and Paris). This analysis shows that, whereas the four cities in these four neighbouring countries are closer to each other (330 km on average) than are the four German cities (500 km on average), they exhibit a greater price dispersion than that of the four German cities, suggesting that the border effect is more important than the distance effect.

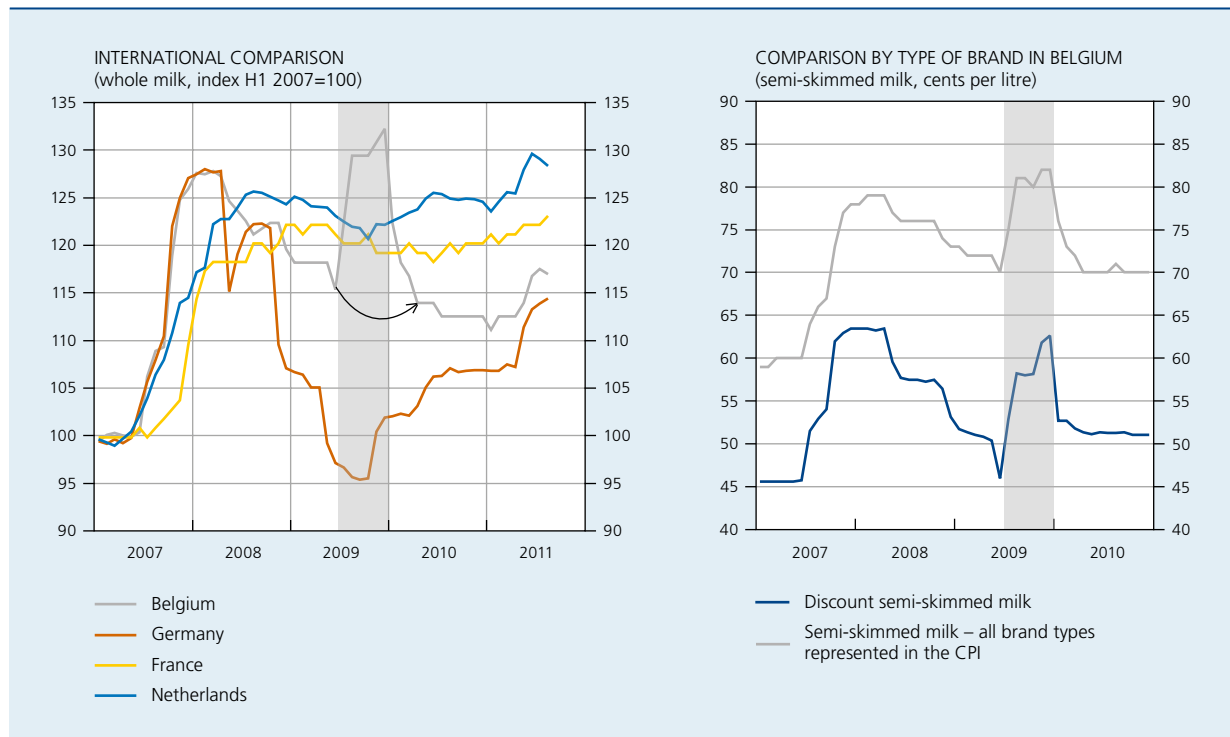
Apart from their impact on price levels, structural characteristics also affect the transmission of shocks to consumer prices. In the case of food products, an analysis

using Vector Auto Regression (VAR) models performed as part of the SIR indicates that consumer prices tend to react less briskly than producer prices to a commodity shock. Furthermore, it appears that responses vary considerably from one country and from one sector (type of food product) to another, and there seems to be a material link with structural characteristics. For example, greater penetration by discounters appears to be more likely to be associated with a strong transmission and, conversely, markets characterised by a greater number of small shops appear to be less sensitive to shocks coming from commodity prices.

This can be illustrated by looking at milk. The price of milk on the international market, as well as that on the EU internal market, experienced a significant upward shock during the first eight months of 2007, followed by a significant decline from end-2007, which lasted until mid-2009. An upward trend then took hold until early 2011. In 2007, consumer prices reacted fairly strongly and quickly, particularly in Belgium and Germany. In France and the Netherlands, the reaction was slower and more sluggish.

Conversely, the transmission of the drop in international prices, from 2008, was much more differentiated. Apart

CHART 9 CONSUMER MILK PRICE



Sources: CBS, DESTATIS, DGSIE and INSEE.

from Germany, where consumer prices appear to have reacted fairly symmetrically, the decrease was slower and less pronounced in Belgium, and was much less perceptible in France and the Netherlands. The increase seen in Belgium between July 2009 and January 2010 is attributable to a specific factor, which it would make sense to cancel out; it was caused by an agreement between Comeos (formerly Fedis), the Boerenbond, and the Algemeen Boerensyndicaat, an agreement under which Comeos undertook to pay a surcharge over six months – from July to December 2009 – capped at € 0.14 per litre of drinking milk in order to offset farmers' losses stemming from the drop in international prices. In practice, it was the consumer who paid the surcharge, resulting in a (temporary) increase in consumer prices.

Overall, the trend in consumer milk prices appears to show a highly competitive market in Germany: the transmission in that country was brisk both during the upward phase (because it is hard not to pass on higher costs to the consumer in a competitive market, as margins are slim in principle) and during the downward phase. Belgium appears to fall somewhere in the middle; while the drop in consumer prices following the decrease in costs was not as pronounced as in Germany, it was more pronounced than in France or the Netherlands. This seems to corroborate certain difference observed between countries with respect to concentration indicators (lower in Belgium and Germany, higher in France) and to discounters' market share, for example (particularly high in Germany, high in Belgium, and much weaker in France). The case of the Netherlands stands out, however, given its fairly average degree of concentration and large discounter market share. This may be attributable to a desire to restore margins after they were eroded by the impact of the price war that took place in the Netherlands after 2003⁽¹⁾.

In addition, the Price Observatory highlighted, in its second quarter 2011 report, that pricing and marketing policies differ from one brand to the next, and strategies for so-called discount products and private-label products most closely approach a competitive price formation⁽²⁾. These products are distinctive not only for their lower prices, but also for their more pronounced and more symmetric transmission of cost fluctuations. We note that these brands exhibit above-average price volatility and react more strongly and more rapidly to cost increases and decreases. Thus, price trends for this type of milk were less asymmetric than the average.

(1) See Box 4 in Bagniet *et al.* (2009).

(2) Price Observatory, *Analyse des prix: deuxième rapport trimestriel 2011 de l'Institut des comptes nationaux* (Analysis of prices: second quarterly report 2011 of the National Accounts Institute).

Conclusion

At a time of consolidation and increasing internationalisation of the distributive trade sector, three major phenomena have been simultaneously altering the structure of euro area trade for several years now: the success of hard and soft discounters, the emergence of retailers' private discount-label products, and the growth in online shopping. All three tend to exert downward pressure on price levels. Whereas the first two factors are particularly pronounced in Belgium, online shopping is less of a factor. Furthermore, these trends are not neutral with respect to inflation measurement, because the basket of consumer goods used to calculate the price index needs to reflect the extent of the three phenomena.

Belgium has a high number of points of sale, both relative to the surface area of the country – which makes sense given its high population density – and relative to its population. This is partly a reflection of the important role that small-scale grocers and specialised shops continue to play in the grocery sector. However, if we limit our analysis to points of sale larger than 100 square metres, these observations are confirmed by measurements of concentration and profit margins in the grocery sector at the national level, according to which Belgium's position is relatively favourable with respect to the level of competition. These results also hold at the local level; if we consider concentration by parent company, Belgium has the least concentrated market of the ten countries covered by the study. And yet, despite improvements in recent years, Belgian regulation of store locations, prices and business hours remains very intrusive and could discourage the opening of new points of sale.

Given the impact of the distributive trade sector's structural characteristics on price-setting behaviour and on the differences in price levels within each country and between euro area countries, structural reforms are needed to enhance competition and take better advantage of the common market. A good first step would be the complete application of the Services Directive, which would help foster increased market liberalisation and harmonisation. Other regulatory barriers, such as those linked to VAT or consumer protection laws, could be harmonised and simplified in order to unlock economies of scale and the potential for online and cross-border trade. For Belgium, a simplification/clarification of its multitude of regulations would already be significant progress, given that what is restricting the development of trade in Belgium is not so much the constraints imposed by the regulations as their complexity.

While the transition to more competitive markets may result in lower prices, it may also reduce price rigidity and

thereby enhance the transmission of cost fluctuations to prices (making them more volatile). Such a change is also likely to lead to more symmetrical price formation. While the analysis performed as part of the SIR did not show any significant anomalies in Belgian competition, it is still necessary to continue monitoring price trends, a task assigned in particular to the Competition Authority and the Price Observatory.

Even though harmonising regulations and eliminating implicit barriers should help lessen differences within the euro area in terms of both the structure of trade and price formation, some differences are unavoidable

due to consumer preferences and cultural differences from one country to the next, and even regionally. For example, the success in Belgium of soft discounters and private-label products has not been won solely at the expense of specialised shops, which still have a greater market share than their counterparts in neighbouring countries, suggesting that Belgian consumers still value the services provided by small retailers, even though their prices are higher. Similarly, the spread of discount brands has not caused the disappearance of name brands, which still have significant market share, even though price formation appears to be less competitive in this market segment.

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