

An international comparison in the general food trade

Cases of structural change

Bart NOOTEBOOM, Roy THURIK, and
Sjaak VOLLEBREGT *

The paper considers general trends of structural change in terms of averages in the general food trade. It gives an international comparison of trends concerning average shop size, number of shops per 1,000 inhabitants, the share of independents and concentration. On the basis of the evidence, three stages are proposed for the development of retail structure.

1. Introduction

The present paper does not focus on details of store operation, but looks from a somewhat greater distance at retail structure and general trends of structural change in terms of averages per type of trade.

In many countries we see the following phenomena:

- increasing scale in the sense of an increase of average shop size,
- decreasing density of shops in the sense of a declining number of shops per 1,000 inhabitants,
- increasing concentration in the sense of an increasing share of sales of the largest chain store companies, and
- declining share of independents.

* The paper was read at the ESOMAR conference 'Retail Strategies for Profit and Growth' in Brussels, June 4-6, 1986. The proceedings of the conference can be obtained from ESOMAR, J.J. Viottastraat 29, Amsterdam, at a price of SFrs. 80,-.

Correspondence address: Dr. B. Nooteboom, Research Institute for Small and Medium Sized Business, P.O. Box 7001, 2701 AA Zoetermeer, the Netherlands.

These phenomena represent general tendencies that vary between countries and between different types of trade. The tendencies are the most pronounced in the distribution of non-luxury goods that are purchased frequently and/or are highly familiar to consumers, and are sometimes called 'mass products' as opposed to 'specialty products'. Foremost among these are products in the general food trade ('grocery trade'). But in affluent countries similar tendencies arise in the trade of basic (non-luxury) textile goods, electrical and electronic goods, optical goods, household goods, etc. Increasingly, we see a split of retail markets into a large volume component of mass distribution, characterized by a high speed of turnover, limited service and low margins, and a minor component of specialty goods and services with a deeper assortment of models, sizes, types or brands, a high service level and higher margins. The tendencies indicated above apply to the mass component, which is increasingly dominated by multiples. Opportunities for smaller independents still remain in the specialty segment, but those impose strong restrictions on the location of the shop, a high standard of quality for products and services, and a finely tuned retailing mix.

The paper gives a descriptive account of similarities and differences in structure and structural change in the general food trade in different countries. There are several reasons to choose the general food trade (grocery trade). It is an important trade in terms of size and in terms of consumer welfare. It is also the trade in which the tendencies we wish to consider are most pronounced and have

been in operation for the longest period of time, in different countries. Above all, it is a trade for which the most data are available (source: Nielsen).

2. Increase of scale

The most pronounced tendency in the grocery trade is an increase of scale in the sense of an increasing average sales size per shop. The source of the data is Nielsen, and sales figures have been deflated, for each country, by an appropriate price index to eliminate the effect of inflation.

Table 1 shows the average annual increase of deflated sales per shop in the period 1972–1978 and the period 1978–1983. The split into two periods is made to see whether, and in which countries, the increase of scale has slowed down or accelerated in recent years. To facilitate inspection, the data have been arranged in two blocks. The first block concerns those countries where the increase of scale is less in more recent years than in the preceding period. The second block concerns countries where the increase of scale has accelerated in recent years. For some coun-

tries the data are available only from 1974 onwards so that the first period is 1974–1978.

Our conclusions from the table are as follows:

- increase of scale has indeed been pervasive, and at times massive, in both periods in all countries considered, except Japan and Spain in the first period, where there was a slight *decrease* of scale, and Switzerland in the first period, where the increase of scale was slight, and
- in most countries the rate of increase has declined considerably from the first to the second period. This indicates that in those countries there is a trend towards stabilization.

It is interesting, and perhaps significant, that in the US the rate of increase has become virtually zero in recent years. This may be significant because the US has been ahead of other countries in many developments in retailing (self-service, all-week and around-the-clock opening of shops), and the declining rate of increase there may confirm the indication of a trend towards stabilization with respect to scale. We suspect that in the US this phenomenon is due to the emergence of around-the-clock convenience stores on the level of residential neighborhoods. A similar development may well emerge in European countries (consider, for example, the recent drive towards liberalized trading hours in the UK). In Sweden also, the increase of scale has been low in recent years. In England and France, however, the increase of scale is still steep.

In some countries there has been a rising rate of increase: Brazil, Spain, Italy, Switzerland and Japan. In Spain the development is spectacular: a slight *decrease* of scale in the first period was followed by massive increase (more than 11% per annum) in recent years. This is probably associated with an increase of the standard of living and, above all, a change of culture and life style after the eclipse

Table 1
Increase of deflated average sales size per shop, in the general food trade (average percentage change per annum).^a

	Period 1972–1978	Period 1978–1983
Portugal	6.2 (1974–1978)	3.9
Germany	7.4	3.4
Sweden	7.4 (1974–1978)	2.1
USA	7.5	0.3
The Netherlands	7.7	4.2
France	9.2	6.4
United Kingdom	9.7	6.6
Belgium	11.5	4.4
Ireland	14.3 (1974–1978)	4.3
Japan	–0.7 (1974–1978)	2.0
Austria	4.0 (1974–1978)	4.2
Switzerland	1.4 (1974–1978)	4.2
Italy	5.7	7.7
Brazil	5.2 (1974–1978)	9.5
Spain	–0.7 (1974–1978)	11.2

^a Source: Nielsen, adapted by the authors.

of the Franco regime. It appears that this has led to an opening up of markets and the rapid penetration of modern forms of retailing, whereby Spain is rapidly catching up with developments in other European countries. The development in Brazil is perhaps comparable in some respects.

3. Decline of density

Next, we turn to the development of shop density, measured by the number of shops per 1,000 inhabitants. By definition, an increase of average sales size per shop will be accompanied by a decline of the density of shops if income and population size are constant. If, however, income and population increase, as has been the case in most countries, shop density may not decline, in spite of a substantial increase of scale. The general picture across countries is a pronounced decline of density in the first period, associated with a steep increase of scale on the whole, followed by a trend towards stabilization, associated with a smaller increase of scale (see table 1). Even in Spain, with its drastic increase of scale in recent years, shop density has remained virtually constant. We find it difficult to believe that this particular case represents a stable situation, and we suspect that the recent influx of modern forms of retailing with an increasing share of multiples will, with some delay, lead to a decline of small shops, resulting in a decline of density. The delay may be considerable in the less densely populated and less prosperous areas inland, but we feel that a trend of decline similar to the past trend in other European countries is inevitable. In other European countries there still is a continuing decline of density, although less pronounced than in the earlier years; above all in Belgium, followed by Germany, the UK, France, the Netherlands, Switzerland and Ireland.

In Italy and the US, density is virtually

Table 2
Number of shops per 1,000 inhabitants in 1983. ^a

Australia	0.65
USA	0.74
The Netherlands	0.77
United Kingdom	1.01
Sweden	1.02
Canada	1.11
New Zealand	1.18
Switzerland	1.26
Germany	1.35
France	1.51
Austria	1.58
Brazil	1.65
Belgium	1.66
Norway	1.90
Columbia	1.93
Japan	2.09
Mexico	2.23
Ireland	2.46
Greece	2.92
Italy	2.99
Spain	3.06
South-Korea	3.12
Argentina	3.79
Portugal	4.38

^a Source: Nielsen and EIM.

constant throughout both periods. We do not know about Italy, but concerning the US we are again inclined to interpret the stability as the next phase in the development of structure in the food trade, which may be in store for European countries.

Differences in density between different countries are far more pronounced than differences in time for separate countries. Table 2 ranks different countries in an order of increasing density. We see a wide variation from a level of 0.65 shops per 1,000 inhabitants in Australia to a level of 4.4 in Portugal. It is hardly surprising to see low levels for more highly developed countries, and high levels for less developed countries. One expects a lower density as a function of car ownership, among other things, associated with the level of per capita income. Intuitively, one feels that shop density is also associated with distances that people have to travel, which is associated with population

density, or more exactly, with the way in which population is spread over the land. To proceed in this direction, we attempted to explain differences in number of shops per 1,000 inhabitants on the basis of differences in per capita income and population density. We investigated this with the aid of a standard statistical technique.¹ For per capita income we found a highly significant effect, with an elasticity of about -0.5 . This means that if in country A per capita income is 20% higher than in country B, shop density is 10% lower. This effect accounts for 40% of the variation in shop density between countries. Once we have taken into account this effect of income, we find no significant additional effect of population density. Apparently, population density has to be taken into account in a more sophisticated manner. Actually, this is to be expected: for a given average of population density in a country, it matters a great deal, for the present analysis, whether population is concentrated in a few urban areas, combined with a vast uninhabited area (as in Brazil and Australia, for example) or whether it is spread fairly evenly over the entire territory (Western European countries).

Other geographical and infrastructural variables (islands as in Japan, mountains as in Norway and Switzerland), density and condition of roads (snow and frost as in Norway), may also matter. For the present paper we did not have sufficient data for an extended analysis. We intend to proceed with research in this direction.

4. Share of independents

Another relevant variable is the share of independents in the total number of grocery

stores. When we look at the development in time of this variable, the countries for which we had sufficient data fall into three classes, as follows:

In most countries the share of independents is fairly constant throughout the period 1972 (or 1974) 1983: Spain, Portugal, Brazil, the UK, Austria, Italy, Ireland, Sweden, Japan and Belgium (after a slight increase in the earlier years). In two countries there has been a relatively persistent but slight decline: France and the US. In three countries the decline has been relatively steep: Switzerland, Germany and the Netherlands (after a fairly stable share in the early years). We note that the development of the share in the number of shops is not the same as the development of the share in sales (market share). Generally, market share tends to decline more than the share in the number of shops, because independents tend to participate less than multiples in the increase of sales size per shop.

We expected a general decline of the share of independents, and we were somewhat surprised by the stability of the share in the number of shops in most countries.² Between countries, the share of independents varies, but not drastically. The lowest share was found for Switzerland (66%), followed by France and the US (73%), Sweden (78%), Germany and the Netherlands (83%), UK (85%), Austria (87%) and Belgium (92%). The other countries (Japan, Italy, Ireland, Brazil, Portugal and Spain) were close to 100%. Generally, one finds (and expects) lower shares in richer countries, where shop densities are lowest (see table 2).

5. Concentration

Finally, we take a brief look at concentration, measured by the share of sales of the top

¹ The technique is regression analysis. We estimated the model $\log d = \alpha_0 + \alpha_1 \log c + \alpha_2 \log p$ where d = shops per 1,000 inhabitants, c = per capita income, and p = population density.

² For the basis of this expectation, see the contribution by Nootboom elsewhere in this issue.

Table 3
Concentrations (market share of the top 2% of companies).^a

The Netherlands	17.0
Sweden	19.0
USA	23.0
Germany	26.0
Switzerland	26.0
Portugal	32.0
Austria	33.0
Italy	34.0
Japan	38.0
Ireland	39.0
United Kingdom	49.0
Brazil	53.0
Spain	53.0
Belgium	54.0
France	60.0

^a Source: Nielsen.

2% of companies arranged in order of size. Table 3 shows these concentration ratios in percentages for 1983, in the order of increasing concentration. The lowest concentration is observed in the Netherlands (17%) and the highest in France (60%). The low concentration ratios in the Netherlands and in Sweden (19%) are due, among other things, to the fact that in these countries government has pursued a highly restrictive policy with respect to hypermarkets and other large scale stores in peripheral areas. Interestingly, the concentration ratio in the US is the lowest (23%) after Sweden and the Netherlands. We have not yet traced the causes of this, but we suspect that, here again, it is associated with the emergence of relatively small scale convenience stores. In view of the high concentration ratio in France, it appears that the Royer law, intended to maintain a certain level of small scale independent retailing, has not been effective with respect to this concentration ratio, or came too late. Also striking, in view of an earlier discussion, is the high concentration ratio in Spain (53%).

When we consider the development in time, there are a few countries where the concentration ratio has increased drastically in the period 1973–1983: in Spain it increased almost fourfold from 15% to 53%; in the UK it doubled from 25% to 50%; in Italy it increased from about 20% to 34% and in Ireland

from about 25% to 39%. In Belgium and France there has been only a slight increase, and in other countries, including the US, it has remained virtually constant.

When we consider the full range of phenomena in different countries, an overall picture appears to emerge, which we posit as a tentative conclusion (or hypothesis, perhaps). In the development of retail structure there appear to be at least three stages:

Stage 1 A relatively stable and dense structure of small, independent shops with limited self service. This occurs in less developed countries.

Stage 2 The 'industrialisation' of retailing, with the penetration of self service, large multiples, increase of scale, declining density, declining share of independents and increasing concentration. The degree of concentration depends on government policy with respect to superstores and other large peripheral units.

Stage 3 Stabilization of scale, density, and share of smaller independents, who have settled in the smaller volume residual markets in rural areas, residential neighborhoods and the top end of the market (specialties, luxuries) in larger centres. Particularly in the food trade, this may be associated with extended shopping hours as a factor for the development of convenience stores on the neighborhood level.

The next stage might be the emergence of teleshopping in various forms. Portugal appears to be in the first stage, while Spain has rapidly entered stage 2, following Ireland and Italy. Northwestern European countries are well into stage 2, and appear to be approaching stage 3, where the US already is.

Reference

- Nooteboom, B., 1986. Costs, margins and competition: Causes of structural change in retailing. *International Journal of Research in Marketing* 4, pp. 233–242.