GLOBALIZATION IN THE FIELD OF FOOD RETAIL ST.PETERSBURG: ANALYSIS OF THE PRICE POLICY

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Abstract. The disastrous state of the food market was one of the reasons for the breakup of the USSR in 1991, while the filling of the consumer market with the food products became the first, though rather painful due to the dramatic increase of prices, result of Russia's transition to the market economy. Within a short time, the imported goods, virtually unseen before, including the production of the well-known global manufacturers, appeared on the Russian market. Though not all of the food products delivered to Russia at that time were of equal and acceptable quality, e.g. the American chicken quarters, (Alali et al., 2012), the process of Russia's entry into the global food markets has definitely started. Globalization did not only lead to the growth of the delivery of the imported goods into the Russian market. The major well-known food companies from Finland, U.S.A. and other countries started opening their manufacturing facilities and sales outlets within the Russian territory. The local production of agricultural products has also experienced a revival. In a dozen years, from a highly dependent on the global markets food importer Russia successfully transformed into one of the major exporters of certain food products (for instance, grains). In this series of two articles devoted to the same research and incorporating a rich factual and statistical material, we analyze the modern condition of the Russian food market, estimate the consequences of its inclusion into the globalization process and attempt to determine its type.

Keywords: food retail market, market segmentation, type of market, price policy.

JEL Classification: D12, D21, D43

1. Introduction

The area of academic expertise of the authors of this article has since a long time included the study of the specifics and the determination of types of the industrial markets. (Dengov & Melnikova, 2012, Dengov & Gregova, 2015, Dengov & Tulyakova, 2015).

In the 1990s, the structure of the Russian food retail market was easily definable as a *monopolistic competition* with a few elements characteristic for the *perfectly competitive markets*. At that time, there were no major retail chains, which could dictate their rules to the food market, whatsoever. The truly revolutionary change in the food retail market of the country did not occur until the beginning of the first decade of the 21st century, when both Russian (*Lenta*, *O'KEY*, *Karusel'*, *Magnit* etc.) and foreign (*Auchan* and *PRIZMA*) powerful retail chains entered the market, starting with the major Russian cities of Moscow and St. Petersburg. Due to the definite cutting-edge they had over the small food stores in regards of the operational costs, product assortment, sales geography etc., the major food chains then started to gradually replace the small to medium business within this important industry, both as a result of the open competition, but also by the administrative measures.

2. Object of research and methodology

To determine the current type of the food retail market, its present state and prospects of further development, one needs to evaluate the levels of its concentration and centralization, and to analyze the pricing policies of the major retail chains.

The food market of St. Petersburg has been chosen as the *object* of our studies. Within the country, St. Petersburg positions itself as the cultural capital of Russia. Due to this status, it is equally famous outside the Russia, making it an international tourist attraction. (Pashkus et al., 2015). However, coming to St. Petersburg to visit its historical and cultural sites, the tourist should also be aware of the economic achievements, in the field of food retail amongst other things. On the other hand, for the promotion of Russian high quality food to world markets, it is useful to use the experience of other countries, for example in Italy (Aiello et al., 2015).

As a *working hypothesis* that needed to be proved, we assumed that the food retail market in St. Petersburg most closely resembles the market of *«fuzzy oligopoly»*, which besides the price competition uses also the product mix policy and the growing number of the sales outlets. It should be noted that the problem of assessing the food markets in terms of competition and market power of large companies is relevant not only for Russia but also for other countries (Soregaroli et al., 2011, Marini et al., 2015, Fašiang, 2015, Kajanová, 2015).

The factual and statistical basis of the study came from the open sources available to the authors of this article. The method of the analysis included monitoring, the processing of the acquired information using the statistical methods, and the calculation of the concentration ratios. To evaluate the concentration of the food retail market in St. Petersburg we used such indexes as the Herfindahl-Hirschman Index (HHI), the Linda index (IL) etc.

3. Segmentation of the food retail market in St. Petersburg and the position of the major "players"

In order to better understand the structure of Russian retail and the situation in the currently researched industry, it is necessary to divide the general retail system into several sectors. The traditional way of its division looks as follows: 1) FMCG (the food retail) – the sector, which is the subject of this research. It is worth noting, that the term FMSG (fast moving consumer goods) is more precise, since the «food retail» is often understood exclusively as the sales of the production of the food industry. That is, however, not completely correct: part of the general food retail consists of the goods of a non-food variety (the «non-food products»), everyday consumer goods, such as toothpaste, soap, lightbulbs, and hygiene products; 2) Household appliances and electronics; 3) Home products and DIY (Do It Yourself), including the textiles, household cleaning products, housewares, and flooring and construction materials; 4) Furniture; 5)

Cosmetics and perfumes; 6) Health care products; 7) Other lesser sectors, such as jewelry, animal care products, cellphones, juvenile products, etc.

The global economic recession, strongly felt in Russia as well as in other countries. The recession also affected the food products consumption. The average purchase amount decreased, the customers now tend to frequent a greater variety of outlets of different food retail chains in search of discounts and bargains, while the counter-sanctions led to the generally poorer product mix. In general, buyers also tend to switch to the cheaper products, even if they are usually of the inferior quality. The imports phase-out is undoubtedly taking place, however, in such a short period it still unable to fully compensate for the loss of the imported food products.

Thus, according to the data of the Russian Federal State Statistics Service, the retail sales in Russia in 2015 constituted 27575,7 billion rubles (showing a decrease of 10% on a year-on-year basis). Within the structure of the last year retail sales, the share of the food products, including beverages, and tobacco constituted 48.6%, of the non-food products – 51.4% (in 2014 they constituted 47% and 53% accordingly). The share of St. Petersburg in the total retail sales in the Russian market is 4% (844,76 billion rubles). The share of the retail sales of food products, including beverages, and tobacco within the structure of the total retail sales in St. Petersburg in 2014 constituted 35%, with the share of the non-food products – 65%, which is comparable to the conditions of 2013 (Administration of St. Petersburg Official site, 2015).

If in 2013 Russia had climbed to the 23rd place in the Global Retail Development Index (the rating evaluating the feasibility of investments into the retail business of each country) as compared to the 26th place in 2012, the following years (2014-2016) saw it lose this position again.

Before we continue to the analysis of the food retail industry, which is the subject of this study, it is necessary to mention that this segment in St. Petersburg appears to be highly consolidated: the share of the retail chains constitutes approximately 90% of the total volume of the market.

According to the data of the *INFO-line* information and consulting agency, the first seven places in St. Petersburg and Leningrad region according to the total revenue belonged to the FMCG-retailers. The next FMCG retail chain is only in the 14th place with the share, which is 35% lower than the share of the player that occupies the 7th place. Thus, we take to analyze only the first seven positions (tab.1).

Table 1: Top food retailers St. Petersburg according to the consulting agency InfoLine (1 half of 2013)

Retail chain	The number of stores	Market share
Lenta	16	20,7%
O’KEY	38	18,43%
Pyaterochka	212	11,45%
Sem’Ya	201	7,6%
Karusel’	16	6,76%
DIXY	157	6,43%
Perekrestok	37	6,42%
AUCHAN	9	4,9%
Polushka	150	4,17%

Source: http://infoline.spb.ru/news/?news=54931 [22.04.16]

To begin with, it is necessary to point out that the industry consists of the separate market segments, with each of them addressing their own kind of customer. This aspect is a vital one for our research: if the companies are the part of one industry, yet belong to the different market segments – they will not compete. Therefore, the analysis of the price factor should be performed not for the industry as a whole, but rather for each of its segments in particular.

The main criteria of segmentation generally include: 1) the size of the segment; 2) its stability (growth perspectives); 3) the segment's profitability; 4) its availability; 5) competition within the segment. The industry in question can be divided into the three main segments.

Segment 1 consists of the hypermarket-scale retail chains. Their primary customers are the people doing «family shopping», where they buy the products for the family for the whole week. The outlets of this segment have the largest floor space and, consequently, the richest products mix. The retail chains belonging to this segment are as follows:

1. ***Lenta*** – often proclaimed as the first retail chain in Russia. Up to 2013, the chain worked exclusively in the hypermarket form; however, its entrance into the Moscow market in the March of the same year led to the introduction of a new form – a supermarket. As of April 2016, *Lenta* has 180 sales outlets throughout Russia (142 hypermarkets and 38 supermarkets), with 21 hypermarket and 6 supermarkets in St. Petersburg. For the sake of the comparison, in 2013 it had only 70 outlets throughout the country (63 hypermarkets and 7 supermarkets) – 16 of them in St. Petersburg. The market share of *Lenta* in St. Petersburg in 2013 constituted 20.7%.
2. ***O'KEY*** – a dynamically developing Russian retail chain, which by today counts more than 100 shopping centers. In 2010 in St. Petersburg *O'KEY* was proclaimed the strongest brand. The company works in the forms of hypermarket *O'KEY* (the main form) and supermarket *O'KEY – Express*. Within St. Petersburg, the company has 39 sales outlets (20 hypermarkets) and its share in St. Petersburg market constitutes 18.43%.
3. ***Karusel'*** – a retail chain that works in the hypermarket form and since 2008 is a part of the leading Russian multiform retailer - X5 Retail Group. The *Karusel'* chain has 16 hypermarkets in St. Petersburg and 85 shopping centers altogether in Russia.
4. ***Auchan Group*** – foreign retail chain, specializing in hypermarkets. Among the companies in question it is the youngest player on the St. Petersburg market (it works there since 2006). Its main form is hypermarket (9 sales outlets in St. Petersburg), but it also works in the form of supermarket under the *Auchan City* brand.

Until the most recent time, there were ample reasons to suppose that in the nearest future the share of the Finnish *PRIZMA* retail chain, which had been speedily developing in Petersburg in the last few years, would considerably grow in this segment. Within this study, we will not consider *PRIZMA*, since, according to the *INFO-line* rating, its market share in 2013 constituted less than 2%.

Segment 2 is represented by trading networks format supermarket. The primary customers of the retail chains of this segment are people with high to medium income: their product mix includes expensive goods, some of which may not be present in the segment 1, their pricing policy is the highest among the segments in question, and the companies usually pay a lot of attention to the quality of their products. The shop floor space in the segment 2 is smaller in comparison to segment 1. Another difference from the hypermarkets of the first segment is that the customers in segment 2 are supposed to make smaller purchase, but shop more frequently (every day or every two days at most). The segment includes the following players:

1. ***O'KEY – Express.*** In St. Petersburg operates 19 supermarkets.
2. ***Auchan City.*** The city has 3 points of sale.
3. ***Perekrestok*** – a retail chain that is a part of a multiform company. In its segment, it holds the first place in regards of the number of outlets (41 supermarket within St. Petersburg).

Segment 3 encompasses the retail chains, functioning in the form of "shops walking distance". A big number of outlets with relatively small floor space is characteristic for the retail chains of this segment. The customers shop there every day, but the average purchase is much smaller than the one in the retail outlets of the first and second segments. Due to the limited floor space, the product mix is the poorest compared to the previous segments (the share of non-food goods is no more than 10%, whereas for the hypermarkets it can rise as high as 40%). The retail chains working within this segment are as follows:

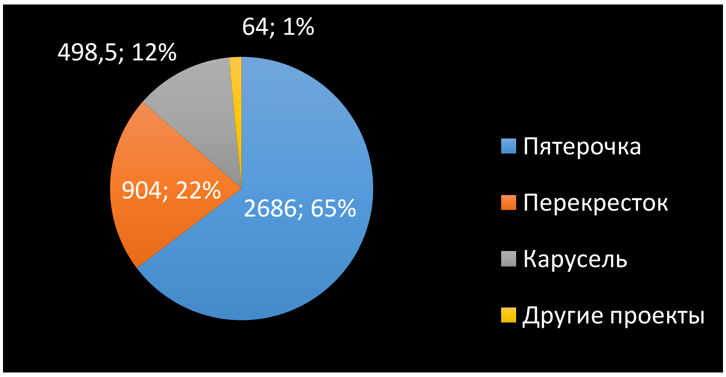
1. *Pyaterochka* – a retail chain of convenience stores for people with modest income, with 260 shops throughout St. Petersburg. It is the third major chain of the *X5 Retail Group* (2014) company and the most profitable among them (fig.1).

2. *INTERTORG Trading Company* consists of three retail chains: *Sem'Ya, NORMA, IdeA*. The latter two will not be included in this study, since their share is negligible even within their own company structure. As to the *Sem'Ya* chain, it is worth mentioning, that it primary zone of operation is the North-West District of Russia. In St. Petersburg, it owns 265 convenience stores.

3. *DIXI* – one of the leading Russian companies, specializing in the development of the general convenience stores of the "shops walking distance" form in Moscow, St. Petersburg and three Federal Districts of the Russian Federation: Central, North-West, and Urals. In St. Petersburg, the chain has about 200 shops.

4. *Polushka* – a retail chain with the main specialization in the general "shops walking distance", similar to *DIXI*. Unlike the previously mentioned players, it has the least spread within the country and works almost exclusively in St. Petersburg, as well as in the Leningrad and Novgorod regions. In Moscow, the company owns only one outlet.

Figure 1: The share of trading networks in the structure of the company X5 Retail Group (profit for the 1st quarter of 2013, in mln. Rub.)



Source: Available: http://www.x5.ru/common/img/uploaded/files/2013.05.21_X5_Q1_2013_Financials_RUS.pdf

This leads us to the conclusion that the chief criterion of segmentation in this study is the form of the outlets themselves: segment 1 – the hypermarkets; segment 2 – the supermarkets; and segment 3 – the "shops walking distance".

Such a review of all the major food retailers in St. Petersburg shows two obvious problems for our prospective study:

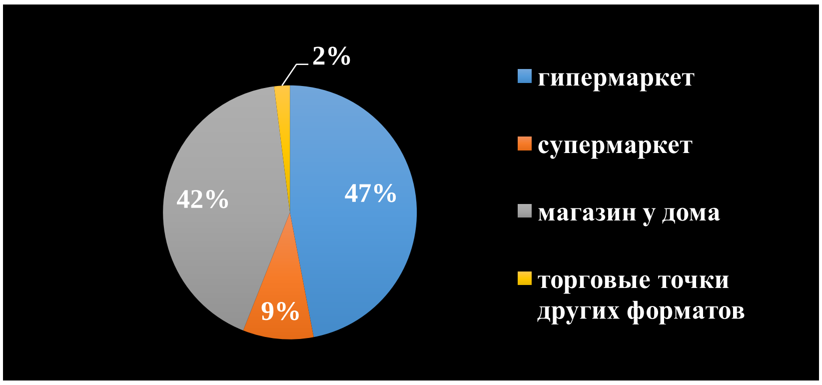
1. The retail chains operate in different forms, which accounts for the differing levels of competition between them (so, for instance, the *X5 Retail Group* company is the owner of the three big chains within the industry, and it is a well-known fact that the brands of one and the same company cannot compete with each other).

2. The *O'KEY* Company and the *Auchan Group* are multiform retailers (their chains in St. Petersburg work in different forms), and this fact should be properly accounted for within the research.

Before continuing to the solution of these problems, one should point out that the first problem is already solved on this stage of our study through the division of the industry into segments. The next necessary step is the calculation of the share of each segment within the industry as a whole.

The share of each format retail chains in St. Petersburg was designed research agency InfoLine (2014), the last time in 2012 - is shown in Figure 2.

Figure 2: The share of the major formats (segments) of retail chains in the food retail industry structure (FMCG)



Source: Available: http://infoline.spb.ru/upload/pptx/FMCG.pdf.

The segmentation of the food retail industry provides an additional opportunity to evaluate the level of market concentration and the pricing behavior of the players not just for the industry as a whole, but also for each of its segments in particular. However, one has to take into the account that the interpretation of the results obtained for each segment is possible only in comparison with the results for other segments. For instance, it is obvious that the share of the chain within its particular segment will be higher than within the industry in general, and thus the indexes, obtained as a result of the calculation of the concentration levels, will be overestimated. Because of that, the segments within this study will be viewed exclusively in comparison to each other.

The formula for the calculation of the share of the chain within the segment is as follows:

$$S = \frac{100\%}{\textit{The share of the segment in the branch FMCG}} \times \textit{Share trading network in the branch FMCG} \qquad (1)$$

Let us show this calculation on the example of the hypermarket *Lenta*. The hypermarket belongs to the segment 1, and the share of this segment within the industry is 47% (Fig. 2), whereas the share of *Lenta* within the industry is 20.7% (Tab.1). As a result, the share of *Lenta* within the segment 1 is: $S_L = \frac{100}{47} \cdot 20{,}7 = 44{,}04\%$. The full calculation of the shares of particular chains within their segments will be given in the second article on this topic.

It is somewhat harder to overcome the second difficulty arising from the analysis of the players within this industry, since neither the *O'KEY*, nor the *Auchan Group* provide the separate figures for the total revenue of supermarkets vs. hypermarkets. However, the form of hypermarket is a basic one for both chains; the supermarket is only a later addition. Considering this, it makes sense to ascribe the shares according to the same ratio as exists between the segments of hypermarket and supermarket, meaning – to compare them as 47/9 – hypermarket/supermarket. In this approach:

1) share *O'KEY* (hypermarket) will be: $S_{O'K(H)} = \frac{18{,}43}{56} \cdot 47 = 15{,}46\%$;
2) share *O'KEY– Express*: $S_{O'K(E)} = \frac{18{,}43}{56} \cdot 9 = 2{,}96\%$;
3) share *Auchan* (hypermarket): $S_{Auchan(H)} = \frac{4{,}9}{56} \cdot 47 = 4{,}11\%$;

4) share *Auchan City*: $S_{Auchan(S)} = \frac{4,9}{56} \cdot 9 = 0,79\%$.

The last problem that one needs to solve on this stage of the research is the estimation of the total revenues of each retail chain (Tab. 2), since we will need this information for the last chapter of our work in order to calculate the concentration indexes of the market.

Table 2: Revenues of the largest retail chains of food retail in St. Petersburg (2012)

№	Brand	The Group of companies	Number of stores	Commerce Square shops,thousand sq. m.	Revenue, billions. rub. (excl. VAT)
1	Pyaterochka Perekrestok Karusel’	X5 Retail Group	458	317,63	78,4 Pyaterochka - 50,97 Perekrestok - 13,72 Karusel’ - 13,71
2	Lenta	Lenta	16	123,6	65,94
3	O’KEY O’KEY– Express	O’KEY	38	159,25	58,7 O’KEY – 49,54 O’KEY– Express - 9,16
4	Sem’Ya	INTERTORG	201	76,17	24,2
5	DIXI	DIXI	228	54,47	20,5
6	Auchan, Auchan City	Auchan Groupe	9	60,65	15,67 Auchan - 13,46 Auchan City - 2,21
7	Polushka	Polushka	144	56,65	13,3

Source: http://russian-consumer.ru/?p=15548 [01.11.2014]

Please, note that within the structure of the net revenue of the X5 Group the share of Pyate-rochka for Petersburg is 65%, whereas Perekrestok and Karusel’ have approximately equal shares.

4. Analysis of the pricing policy of retail chains of food retail market of St. Petersburg

To fulfil the main task of this study and determine the type of the market structure, the sector of the food retail in Petersburg belongs to, one needs to analyze the industry for the possible symptoms of the oligopoly and monopolistic competition. The thing that will help us with this task is the study of the pricing policies of the major retail chains. The study included the following stages:

1) finding out the number of the main players and their shares in the industry;
2) establishing the presence of the symptoms of the price differentiation within the industry;
3) comparison of the pricing policies of the companies;
4) establishing the presence of the symptoms of coordinated oligopoly within the industry.

The previous chapter shows the main body of work on the *first stage* of our study. In the course of the study, we determined that the leading positions in the industry belong to seven major companies, owning 11 retail chains. We also found out that it is impossible to analyze the industry in general. It consists of three segments and the competition within each segment is much stronger than within the market as a whole.

The study of the price differentiation forms used by the competitors on the *second stage* of our research has been performed by two methods:

1. The empirical analysis (the compilation of the data on the «promotional» prices in the shops themselves). The date of the analysis was October 16, 2014, and the outlets chosen for the analysis were as follows:

- Hypermarkets: Lenta, Auchan, Karusel'
- Supermarkets: Perekrestok, O'KEY– Express, Auchan City
- Self-service store: DIXI, Sem'Ya, Polushka
- Discount store: Pyaterochka

2. The analysis of the secondary sources (primarily – the official web sites of the retail chains). In the course of the analysis of the retail chains in the ***segment 1***, the methods of price differentiation were found in the operations of all the representatives within the analyzed segment. The price differentiation is the weakest within the *Auchan* retail chain, which uses only temporal discounts on the limited number of goods (the poorest choice of discount goods among the 4 hypermarkets of this segment) and does not provide the information about the actual rate of the discount (does not cite the previous price of the product). The hypermarkets *Lenta, Karusel',* and *O'KEY* use generally similar methods of price differentiation for a variety of products:

1. Regular catalogues of «promotional» goods: *O'KEY* issues a new one every 2-3 weeks, while *Lenta* and *Karusel'* do it every two weeks. All the chains show the exact amount of the discount. In *Karusel',* the discount is available to any customer, in *Lenta* – exclusively to the return clients, in *O'KEY* - the discount on some of the products is available to everybody, however, in general to receive the discount in *O'KEY* one would need to have a loyalty card.
2. The seasonal catalogue differs from the regular one by the period of validity (the seasonal one is usually valid for a longer time) and its association with a specific occasion, which usually influences the structure of the «promotional» product mix. The seasonal catalogues are characteristic only to the hypermarkets *Lenta* and *O'KEY.*
3. Special offers – products with lowered prices that do not adhere to the catalogue periods or demand the fulfilment of certain conditions (e.g. «buy two, get third free»). Such offers exist in the hypermarkets *Lenta, Karusel'* and *O'KEY.*
4. The policy of «double» pricing – each product has two prices, the lower of which is only valid if the customer owns the frequent buyer card.

Thus, the analysis of the price differentiation demonstrated that the «promotional» assortment provided by the retail chains shows some considerable differences. On the one hand, the differentiation (monopolistic competition) is definitely there, on the other hand, there exists a notable coordination of actions, making allowances for the behavior of the rival companies (characteristic for oligopoly).

The analysis of the ***segment 2*** demonstrated much less variety in the implementation of the price differentiation. In the course of the analysis of the factors of the price differentiation we were able to make the following observations:

1. *Auchan City* supermarkets follow the same strategy as the hypermarkets *Auchan* – minimal use of the temporal discounts on the limited number of products (The discounts in *Auchan* and *Auchan City* mostly correspond with each other;
2. *O'KEY – Express* has a separate price differentiation policy from the hypermarkets *O'KEY* (separate catalogues, different choice of the «promotional» products).

The segment in general shows the following methods of price differentiation:

- Regular catalogue of products – found in the retail chains *O'KEY – Express* and *Perekrestok*. The period of validity of the *Perekrestok* catalogue is one week, whereas in *O'KEY* it is two weeks.
- Special offers – used by *O'KEY – Express* and *Perekrestok*.
- Discount on frequent buyer cards – provided by both *O'KEY – Express* and *Perekrestok*.

Thus, the price differentiation within the second segment is weaker than within the first one. The forms of the price differentiation in the supermarkets *Auchan City* are the same as in the hypermarkets *Auchan*. At the same time, *O'KEY – Express* implements its own price differentiation policy, which is different from the one in the hypermarkets *O'KEY*. The «promotional» product mix of the supermarkets is also somewhat different.

The analysis of the ***segment 3*** demonstrated that the price differentiation is actively implemented only by two retail chains out of four.

The "promotional" products are nearly absent within the *DIXI* retail chain (only nine positions offered at a discount) and *Sem'Ya* convenience stores (less than 20 product positions with "special" prices).

The *Polushka* convenience stores and *Pyaterochka* discounter shops demonstrate the following methods of price differentiation:

1. Regular catalogue of products – found in both *Pyaterochka* and *Polushka* chains. The duration of the catalogue in *Pyaterochka* is one month; in *Polushka* chain of convenience stores it is valid for three weeks.
2. Special offers – only used by *Pyaterochka* chain. A certain product list is offered at a discount for one week.

Thus, the price differentiation in the segment 3 is even weaker than in the segments 1 and 2. Within the industry as a whole most of the companies (7 out of 11) are sensitive to the behavior of their rivals (there is reason to suspect the possibility of co-coordinated actions), since there are considerable differences in the groups of products chosen for the discount. As a whole, the industry demonstrates the following forms of sales promotion:

- special occasion pricing (seasonal catalogues);
- temporal discounts on the normal prices (regular catalogues, time-limited special offers);
- discount prices (special prices for discount card holders).

Thus, the second stage of our research did not provide any conclusive results in regards of the one prevailing type of the market structure. The segment 1 has likely a few characteristics of an oligopolistic competition: three out of four major players show nearly identical forms of price differentiation, and there are ample reasons to conclude that the retail chains within the segment 1 look out to the behavior of their rivals and artificially differentiate their products (through different choice of «promotional» goods).

For the *third stage* of our study (the analysis of the pricing policies), we used the empirical method of research. We compiled a list of everyday consumption products of different categories. The only criterion for choosing a particular product was its presence in outlets of each of the retail chains. We considered only the normal prices of the products (without the discounts). As a result, the compiled list included 16 chosen positions (2 non-food and 14 food products). By the end of the monitoring, the list was further shortened to 10 identical positions actually present in each of the retail chains. The final product list considered in our study was as follows (the figure in brackets shows the position number in the tables 3, 4 and 5):

Table 3. The pricing policy of retail networks of St. Petersburg (Segment 1)

№	Commodity	Price				Max price	Min price	Difference
		Lenta	Auchan	O'KEY	Karusel'			
2	Schauma Shampoo, 380 ml	78,46	79,19	77,9	79,6	79,6	77,9	1,7
3	Tea "Princess Nuri",25 bags	28,24	28,01	24,4	24,99	28,24	24,4	3,84
4	Nectar "My Family",1.93 l	87,19	65,11	88,4	83	88,4	65,11	23,29
5	Flour "Makfa", 2 kg	65,19	63,91	62,3	62,8	65,19	62,3	2,89
6	Sugar, 1 kg	27,4	27,14	29,4	28	29,4	27,14	2,26
8	Rice "National", 900 gr	56,59	54,12	53,9	53,9	56,59	53,9	2,69
11	Apples, 1 kg	46,4	34,65	39,9	42	46,4	34,65	11,75
12	Sunflower "Golden", 1 l	71,4	72,43	69,4	68	72,43	68	4,43
16	Sol "EXTRA", 1 kg	7,9	7,32	7,4	7,8	7,9	7,32	0,58
17	Bread "Stolovyiy", 375 gr	16,1	13,24	19,9	18,7	19,9	13,24	6,66
Σ		484,87	445,12	472,9	468,79	484,87	445,12	39,75

Source: Calculated by the authors based on official sites: http://www.slideshow.lenta.com/index. php?count= 3008; http://www.okmarket.ru/ customers/catalogs/view/2869; http://karusel.ru/prod.php?c =spb&p=prod; http://www.auchan.ru [Online][16.10.2014]

Table 4. The pricing policy of retail networks of St. Petersburg (Segment 2)

№	Commodity	Price			Max price	Min price	Difference
		Auchan Sity	O'KEY–express	Perekrestok			
2	Schauma Shampoo, 380 ml	81,29	78,9	82	82	78,9	3,1
3	Tea "Princess Nuri",25 bags	28,01	26,2	26,9	28,01	26,2	1,81
4	Nectar "My Family",1.93 l	69,13	88,4	85	88,4	69,13	19,27
5	Flour "Makfa", 2 kg	64,72	63,4	63	64,72	63	1,72
6	Sugar, 1 kg	27,14	29,4	27,7	29,4	27,14	2,26
8	Rice "National", 900 gr	54,12	55,4	51	55,4	51	4,4
11	Apples, 1 kg	38,86	41,9	39,9	41,9	38,86	3,04
12	Sunflower "Golden", 1 l	76,81	71,2	69	76,81	69	7,81
16	Sol "EXTRA", 1 kg	7,32	7,4	7,9	7,9	7,32	0,58
17	Bread "Stolovyiy", 375 gr	16,22	19,9	16,9	19,9	16,22	3,68
Σ		463,62	482,1	469,3	482,1	463,62	18,48

Source: Calculated by the authors based on official sites: http://www.auchan.ru; http://www.perekrestok.ru; http://www.okmarket.ru/ customers/catalogs/view/2869, [Online][16.10.2014]

Table 5. The pricing policy of retail networks of St. Petersburg (Segment 3)

№	Commodity	Price				Max price	Min price	Difference
		Pyaterochka	Diksi	Polushka	Sem'Ya			
2	Schauma Shampoo, 380 ml	76,95	76,5	94,7	78,9	94,7	76,5	18,2
3	Tea "Princess Nuri",25 bags	24,05	30,7	30,7	23,5	30,7	23,5	7,2
4	Nectar "My Family",1.93 l	76,25	79,9	86,6	79,9	86,6	76,25	10,35
5	Flour "Makfa", 2 kg	61,65	71,5	62,1	60,9	71,5	60,9	10,6
6	Sugar, 1 kg	27,15	27	27	26,9	27,15	26,9	0,25
8	Rice "National", 900 gr	53,85	59	54,9	53,9	59	53,85	5,15
11	Apples, 1 kg	44,2	42	40,7	44,9	44,9	40,7	4,2
12	Sunflower "Golden", 1 l	76,75	67	66,9	73,4	76,75	66,9	9,85
16	Sol "EXTRA", 1 kg	7,5	7,7	7,2	7,6	7,7	7,2	0,5
17	Bread "Stolovyiy", 375 gr	19,45	21,6	19,8	20,4	21,6	19,45	2,15
Σ		467,8	482,9	490,6	470,3	490,6	467,8	22,8

Source: Calculated by the authors based on official sites: http://pyaterochka.ru; http://dixy.ru; http://www.polushka.info; http://www.7-ya.ru [Online][16.10.2014]

The obtained results lead to the following conclusions:

1. The hypermarket *Auchan* shows the lowest pricing policy (445 rub. for 10 positions). It also worth mentioning that within the first segment the pricing policy is linearly related to the level of the price differentiation: hypermarket *Lenta* demonstrates the highest level of price differentiation, as well as the highest pricing policy (484 rub. for 10 pos.), whereas the situation in *Auchan* is the direct opposite – it has the lowest price differentiation and the lowest pricing policy. The *O'KEY* and *Karusel'* retail chains take up medium positions in both the aggregate price and the level of differentiation. This observation shows only that economically the customer will gain almost nothing by choosing any particular retail chain within the segment 1 (the general prices in *Auchan* are lower, but there are virtually no discounts; on the other hand, *Lenta* offers a lot of discounts, yet the price of the «non-promotional» goods there is higher than in any of its rival companies).
2. Within the segment 2, we could not find any obvious relationship between the pricing policy and the level of the price differentiation. The aggregate price in the supermarket *Auchan City* is the lowest (463.62 rub.). At the same time, *Perekrestok* and *O'KEY – Express* show similar levels of price differentiation, yet the pricing policy of *O'KEY – Express* is higher.
3. The analysis of the pricing policy within the segment 3 demonstrated that the pricing policy of *Pyaterochka* is lower than in the case of its rivals. At the same time, this chain shows the highest level of the price differentiation This results lead to two assumptions:
   - The segment has an obvious price leader, which is the *Pyaterochka* retail chain.
   - The higher prices of the *DIXI*, *Sem'Ya* and *Polushka* are caused by the non-price differentiation factors.
4. On the whole, we can say that we did not find any marked difference in the pricing policies of the retail chains. Since the companies with the highest prices are generally more actively implementing some forms of price differentiation, the existing difference is hardly a considerable one, and thus, we can make two possible assumptions:
   - The industry has the prevailing characteristics of the oligopolistic market, where the retail chains demonstrate a strong interdependence between themselves. The model of oligopoly most suitable for this situation is the «price leadership model» (or the so called «Forchheimer model»).
   - The industry has also some characteristics of the monopolistic competition; however, the competitors look out to accommodate the pricing behavior of each other. The main methods of differentiation though are other instruments.

The *last stage* of this study is looking for the symptoms of a coordinated oligopoly. In the course of our work on the second and third stages, we concluded that there were no reasons to suspect that any one of the segments had a price leader. Thus, the task of the fourth stage is limited to establishing whether there is a price-fixing collusion within the industry.

One of the most prominent breaches of the article 11 of the Federal Law "On Protection of Competition" happened in 2010. The documented collusion about the prices of floor and buckwheat included six of the retail chains analyzed in this article: *Lenta, Sem'Ya, O'KEY, DIXI, Pyaterochka, Perekrestok.* Thus, the presence of the symptoms of oligopoly within the industry is a proven fact.

5. Conclusions

Summing up the first part of our study, you can make the following conclusions:

1. The FMCG retail industry in St. Petersburg is highly consolidated, the total share of the seven major companies constitutes more than 86% of the market.
2. To obtain the most objective results, one has to analyze the price factor on the segment-by-segment basis (not for the industry as a whole), since the retail chains of different segments nearly do not compete with each other at all. This conclusion is proved by the existence of the multiform chains. In regards to the calculation of the concentration indexes, the segmentation of the industry allows one to evaluate the level of concentration not only within the industry as a whole, but also within a segment (and this is the topic of the second part of our research).
3. The most popular forms of retail outlets in the St. Petersburg market are still the hypermarket and the «neighborhood convenience store», whereas 58 outlets (hypermarkets) constitute about 47% of the market in general.
4. There is a marked price differentiation within the companies of the industry (a characteristic of the monopolistic competition), especially within the first and second segments, however, in the implementation of this price differentiation the companies look out to accommodate the behavior of their rivals (oligopoly).
5. The customer gains almost nothing by choosing a particular retail chain within the segment 1. The choice of a retail chain within the segments 2 and 3 can provide some minimal economical benefit.
6. Without due regard to the forms of price differentiation the maximum divergence in the pricing policies of the companies constitutes approximately 10%.

To sum up the results, the only positive conclusion on this stage is that it is necessary to consider additional factors, which is going to be the subject of the next article.

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