Price Monitoring of Socially Significant Groceries: A Results Review of Two Research Waves

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Doi:10.5901/mjss.2015.v6n5s4p242

Abstract

The social stability problem and living standards of the poorest groups of the population largely depend on the level of food prices. An important question arises when the state is being involved in the process of food prices control: Will the market be able to stabilize the prices without assistance at a level affordable for the poor? In this article, the authors present the results of two waves of research of the changes in minimum retail prices for socially important food products in Russia. The obtained results show that the average minimum price for basic foods—the "market basket"—and their volatility reduce. Thus, the authors conclude that the economic crisis in Russia has slowed down. A comparative study of the monthly cost of the market basket for the poor was carried out based on the average prices obtained by the Federal State Statistics Service and the average minimum prices obtained in the study demonstrates a significant difference in the cost. The obtained results allow concluding that a separate monitoring of minimum prices is required for more relevant reflection of the minimum "market basket" cost.

Keywords: marketing, monitoring of retail prices, Russia, social goods, food retail market

1. Introduction

An interesting scientific problem that requires further study is the issue of reviewing the changes of minimal consumer (retail) prices for food during the economic crisis in Russia. In this regard, we need to note that due to international cooperation in the field of statistics, a certain consensus on the concept and methodology for calculating consumer price indexes has been achieved. At the same time, the existing approaches are aimed at the index analysis and calculation of average prices. This does not allow tracking the changes in the minimum prices, the amount of which is crucial for the socially disadvantaged (poor) population groups. For example, in Russia the basis of the methodology for monitoring the good prices in the consumer market is the collection and processing of the information by the Federal State Statistics Service (ROSTAT). It includes the following stages: selection of settlements; selection of base trade and service enterprises; definition of representative goods or services; registration of prices; formation of a scaling system for calculating the consumer price index; calculation of average good prices; calculation of the consumer price index. This approach does not allow determining the level of minimum prices. A similar approach also exists in other countries. In the United States, the consumer price index (Customer Price Index, CPI) is calculated by the independent Bureau of Labor Statistics for the US Labor Department. The collection of primary information is based on recording the actual prices. In turn, the French Consumer Price Index is calculated by the National Institute for Statistics and Economic Studies (INSEE). The goods sample is further divided according to the «distribution channels» to track price fluctuations in retail organizations, and is annually updated to be more consistent with the list of actually purchased goods and services. Price indexes of individual goods and services are estimated according to the share that this product or service has in the consumer's budget. At the same time, the minimum retail prices are not tracked on purpose either.
In Russia, starting from 2014, the signs of a crisis began to manifest themselves as a result of the imposition of sanctions and subsequent “retaliatory anti-sanctions.” The processes of turbulence have affected all sectors of the economy. At the same time, for the Russian citizens, these events primarily affected the consumer prices. It is important to note that crisis had no significant impact on the employment sector. According to the report, the unemployment rate in Russia at the end of 2013 was 5.5%, whereas in February 2015, it was 5.8%. Statistical services did not reveal any significant reduction in the level of wages denominated in rubles, and the job creation (replacement) index still remains positive. However, according to Poverty and inequality in modern Russia: 10 Years Later (2013), in Russia, about 30% of the population live below the poverty line. Therefore, under these conditions, the rising prices are a particularly important factor for the population with the lowest income per capita.

It should be noted that with the imposition of the embargo for the supply of food from the EU countries, more active development of the Russian agricultural sector and, consequently, reduction of prices for basic foodstuffs were assumed as an important positive effect. Obviously, such results cannot be obtained in a short time period, and the price monitoring is also required in the retail sector to assess the impact of “import substitution.”

We also need to note, that the rise in prices could cause a negative reaction of the population, and it can be assumed that the retail trade would become a center of such attention. In this regard, the retail network companies target reducing the risk by engaging special marketing programs for pricing, assortment policy, and so on. However, the role of the network trade in the provision of staples is not dominant in Russia. Non-network trade prevails in the market. For example, in Moscow, where network trade is most developed, the share of chain stores is about 40-45% of all retail food stores. We assume that chain stores need the analysis of the marketing information for the minimum price level for the whole market. Besides, government and public organizations also need such information to develop a consolidated policy on prices.

The distinguishing feature of the existing results of Rosstat’s price monitoring is the collection and analysis of the average prices. In the meantime, the information about the structure of the minimum prices is required to analyze the effect of prices on the socially vulnerable population groups. In this context, the authors decided to continue the project started in 2015 and targeting monitoring the minimum prices for socially important food products. To continue the study, we intend to proceed with the monitoring, which will allow revealing the progress in the minimum retail food prices’ changes. The study authors believe that they can put forward a number of hypotheses within the framework of the described problem:

H1. The volatility of the minimum food prices may reflect the crisis development trends in Russia.

H2. The level of minimum prices is different from the level of average prices, calculated by the Russian Federal State Statistics Service (ROSSTAT), which is essential for the determination of the standard of living of socially disadvantaged (poor) population groups.

2. Literature Review

Much attention is paid in literature to the monitoring of changes in the food prices. First of all, the impact of price on the state stability is examined (Arezki and Brückner, 2011; Schneider, 2008; Bush, 2010; Berazneva and Lee, 2011). Usually, in this respect, the poorest countries with an undeveloped mechanism of social support for the poor population are mentioned. In particular, a number of researchers (Bellemare, 2014) distinguish the impact of food price volatility during the crisis. In their view, the price reduction is less effective than their volatility. In addition, these studies do not emphasize the link between the price volatility and the economic crisis development. Significant place in the discussion about the impact of price changes on the poorest (socially unprotected) groups of the population in the literature is given to the role and methods of the state policy in this matter. As Gouel noted in his research (2013): "Many countries experienced food riots that threatened the stability of their governments but the situations in Haiti and India illustrate that public intervention in a period of high food prices is a matter of political survival in countries with large poor populations."

It should be noted that there is no unanimity on the adoption of decisions of public authorities to stabilize the price level, both in terms of the need for the state participation in the process of price stabilization and at what level it is necessary to stabilize prices if the government is involved in this process.

The need for government support measures demonstrates the results of some studies (Demek, Pangrazio, and Maetz, 2008) showing that 68 of 81 countries that were affected by the 2007-2008 crisis used special trade regulation measures. For example, in Russia there is a wide variety of programs to support various social groups (Alishanov, 2012), but there is no dedicated program to compensate food prices. To some extent, the lack of such programs is compensated by the activities of state social services offering some social groups the opportunity to buy a number of food products at special low prices. The support of various non-governmental associations plays an important role in supplying
food products to such groups, but in general, it does not facilitate the problem solution. An important factor here is the lack of objective information on the minimum retail prices.

In this connection, the state requires objective information in order to take certain decisions (Poulton et al., 2006). An important question is whether these solutions are associated only with the state, or private business must also avoid speculation in the circumstances of a crisis?

In the context of the food crisis, price growth is accompanied by aggressive public behavior, such as the food riots in the countries of Africa, Asia, Europe, and America (Schneider, 2008; Bush, 2010; Berazneva and Lee, 2011). In these circumstances, retailers experience substantial material and reputational losses. Therefore, the business is interested in avoiding extreme forms of the population's protests caused by the price growth, and, consequently, should play a major role in the setting the minimum retail prices for socially important goods.

On the other hand, some studies suggest, that the price level is not the only criterion of choice for socially unprotected population groups. A market research conducted in Russia (Astratova, 1999) indicates that the price of goods is important, but it is not the main factor motivating buyers belonging to the socially disadvantaged group of population to make purchases. Studies have shown that the price of a food product is important for this group, but the taste and quality of the product are so relevant, that "the Russian consumer is very careful about how to satisfy hunger, even in the conditions of a socioeconomic crisis." These results are confirmed by subsequent studies of the role of "customer value" (Sidorchuk, 2015). In turn, the results of our study confirm the importance of not only the minimum level of prices for socially important goods, but also the level of volatility of these prices, due to the quality and flavor characteristics. We can assume that both the state and companies in the retail trade require information on the minimum level of prices and their volatility.

3. Methodology

The practice of conducting marketing research in Russia already has a strong tradition established in the era of the USSR (Fox, Skorobogatkykh, and Saginova, 2008). The direct observation method is one of the methodological approaches in marketing research. It should be noted that the current methodology for the price monitoring of the Federal State Statistics Service (Rosstat) is based on the study of "not less than 5 price quotations," while the minimum prices for the investigated range of food products are not specifically determined. The methodology for selecting the range of food products for subsequent monitoring and analysis of the price level in Rosstat is regulated by an internal document (Order #733) "On approval of the sets of consumer goods and services for monthly monitoring of prices and tariffs," in which there are 120 SKU of food products. In addition, only 28 SCU are analyzed for situational assessment of changes in consumer (retail) prices. The authors of this research have made the original "watch list," consisting of 17 SKU. Actually, the authors removed from the monitoring a number of goods in the Rosstat's situation analysis assortment of food products, supposing that these food products are not affordable for socially disadvantaged population groups. These are all kinds of chilled and frozen beef, pork, and lamb; canned meat; fresh fruits and vegetables (except apples and cabbage); cheese; butter; fat cottage cheese; alcoholic drinks and beer; sausages; sour cream and sweets. When forming their own original list, the authors were guided by empirical observations based on previous studies (Kiselev, 2003). Furthermore, when selecting the food products' sample, the authors were guided by the legislatively fixed minimum set of standards of goods and services ("market basket") and research (Volkov and Evdokimova, 2006) on the minimum physiological norms of food consumption. The authors did not expect to achieve representativeness presence in the investigated range of foods of any trademarks, manufacturers, or countries of origin of food products.

The selection of the research objects was performed by the quota method using the classifying attribute: whether the studied store is part of a chain, or an independent (dispersed, separate) shop. In forming the quota stores, the authors relied on the methodology used in previous studies (Kiselev et al, 2014). This article presents the results in the city of Moscow, the sample for which covered 600 stores (300 chain and 300 independent stores).

The scope of the study suggests performing three waves of monitoring in 2015 in 13 cities of Russia, involving more than 250 students of the Plekhanov University of Economics. The researchers do not aim to provide regional representation of the results.

The peculiarity of the observers' work at the monitoring is related to the specific response from the administration of retail stores, when store employees oppose all forms of direct price monitoring (assuming that the researchers are acting in favor of competitors). Therefore, there is a need for studies using the technique of a "mystery shopper." The monitoring methodology involves two stages. At the first stage, the observer determines the presence or absence of a watch list product (the dichotomous scale). At the second stage, the observer measures (quantitatively, using the absolute scale) the minimum price. The results of the "field" work should be considered as the result obtained by the
methods of qualitative marketing research (Efimova et al, 2015).

As a result of the performed monitoring, the data of two waves were obtained, which can be quantified and summarized. It should be noted that the use of quota sampling does not allow estimating the statistical error of the study. In addition, the limitation of the study was the so-called seasonal factor, which we could not take into account during the study period (February-March 2015).

4. Results

In this work, we present the results of the monitoring of minimum food prices for the city of Moscow. Unfortunately, we were not able to begin the study in September-December 2014, although we assume that in this period there was the maximum growth rate of "minimum prices." Nevertheless, the monitoring conducted in two "waves" in February and March 2015, in our view, reflects the trend of changes in the minimum food prices.

Typically, the cost of food in Russia is tied to the dollar. There is no doubt that the ruble-dollar exchange rate is an important indicator of inflation in Russia, since it is a saving currency for many social groups. For example, many traders rerede their income at the rate of the dollar. According to a report on the dynamics of the ruble and the dollar (http://bhom.ru/currencies/usd/?startdate=startyear) since December 2014, the ruble-dollar exchange rate was falling and reached a peak in the first "wave" of monitoring in February 2015 (69.664 ₽ for one dollar). Then the ruble-dollar exchange rate began to rise and by the time of the second "wave" of research (March 2015) increased by almost 11%. At the same time, though the factor of the ruble-dollar exchange rate change is reflected almost immediately in the pricing of dispersed retail stores, for chain stores, this change occurs after a certain delay (two to three months).

Figure 1 shows the average numerical value of the minimum retail prices for food in Moscow, registered in February and March 2015. In addition, Figure 1 shows the values of the average prices for the assortment under study obtained by Rosstat.

A visual analysis of the diagram (Figure 1) allows some conclusions on the changes in prices. It is obvious that there is a certain difference between the level of prices registered by Rosstat and the results of minimum prices monitoring.

![Figure 1: Average values of minimum retail prices for the investigated range of goods (the results of two "waves" of monitoring), compared with the values of average prices (Rosstat, March 2015, http://www.gks.ru/dbscripts/cbsd/DBlnet.cgi)](image)

For example, while fresh-frozen fish minimum price monitoring recorded a decrease by 3.5%, the Rosstat data showed a 9% increase. Thus, the average minimum price in March 2015 was lower than the average price of Rosstat by 8.3%. The monitoring of the minimum price registered a decrease in the price for rice by 0.24%, but the Rosstat data showed a growth by 8.5%. At the same time, the average minimum price (Figure 1) is lower than the Rosstat value by 26%.

A number of average values of the minimum price practically do not differ from the Rosstat data.
The existing multi-directionality of the data on changes in the prices for certain food products obtained by researchers and Rosstat should be attributed to the peculiar features of the study methodology, as ROSSTAT recorded the prices in various price tiers, but the researchers recorded only the minimum prices. For example, the monitoring of minimum prices recorded a 39.77% difference with the data of Rosstat in the pasta price statistics for March. The growth in prices, according to Rosstat, was 4.01%, and according to our research, the average minimum price decreased by 0.09%. On the other hand, the increase in the minimum average price for potatoes to the values of the first “wave” of our monitoring was 1.96%, while, according to the data of Rosstat, it was 4.4%. The values of the average minimum price for March is by 6.40% less than the price obtained by Rosstat. The trend in the prices of seasonal products is also interesting. For example, the apples price traditionally grows in spring. The average minimum prices monitoring showed a 3.11% decrease in March compared to February, and the average prices were changing in the same direction (3.11%). At the same time, the difference between the average minimum and average prices was 19.7%. The most significant difference, according to the visual analysis of Figure 1, can be observed for tea prices. The difference between the average price determined by Rosstat and the price obtained as a result of monitoring the average minimum prices is 92.8%.

Significant differences were observed when comparing the “average minimum” and “average price” for bread. The average minimum price for rye bread and rye and wheat bread, according to the results of our monitoring, decreased in March by 3.14% in comparison to February. At that time, according to the Rosstat data for the same period, the average price rose by 2.9%. The difference between the average minimum and average prices in March amounted to 52.3%. In turn, the average minimum price of wheat bread and bakery products (long loaf), according to the results of our monitoring, slightly increased (by 9.28%), and according to Rosstat, the increase in average prices for these products amounted to 2.5%. The difference between the average minimum and average prices in March was 54.5%.

We find the tendency of price volatility with regard to the studied range of food products determined after two “waves” an important result of our monitoring (Figure 2).

![Figure 2](image)

**Figure 2** – The volatility of the minimum prices for the investigated range of food products determined after two “waves” (February-March 2015)

As the visual analysis of Figure 2 shows, the overall volatility tends to decrease (the average volatility of the investigated range of food products decreased). At the same time, for a number of products, the volatility increased or remained almost unchanged. Thus, the volatility of the average minimum price for tea increased by 4.5%, wheat long loaf—by 4.13%, frankfurters—by 1.07%. The milk price volatility almost did not change.

5. Conclusions

The obtained monitoring results allow making the following conclusions. First of all, the trend of decreasing average minimum prices and their volatility is obvious. Taking into account the tendency of the stabilization of the ruble rate to dollar and euro, and the data of Rosstat regarding the reduction of the consumer price index (Rosstat. “Consumer prices in March 2015” http://www.gks.ru/bgd/free/b15_00/IssWWW.exe/Stg/dk03/4-1.doc), we can state that the average minimum retail prices reflect the economic crisis changes trend. This phenomenon is explained by to the current situation
in the trade, when a significant part of the retail trade in Russia is independent, and the owners of dispersed stores account their income in dollars or euros. Therefore, they are most responsive to exchange rate differences and changes in the suppliers’ price for food products. In addition, after the dollar decline against the ruble, the reverse process of price reduction is equally slow in both chain and independent retailer trade. In this regard, an important factor that reflects the situation with minimum food prices is their volatility.

Our study showed a significant reduction in the volatility of the average minimum price for the investigated food range. The market thus finds a certain equilibrium offer of the average minimum price for the “food basket.” At the same time, the decision of some retailers to fix the minimum price for long loaf, caused, in our opinion, such a high volatility of the price for this product in March, as not all retailers supported this idea. In turn, the high volatility of the average minimum price for tea in March requires additional research. Based on the study results, we can conclude that the hypothesis proposed by the authors that the minimum volatility of food prices may reflect the trends in the economic crisis change in Russia has been confirmed. There is no doubt that a more convincing result can be obtained by continuing the monitoring of the volatility of the average minimum retail prices for “food basket” products.

To confirm the second hypothesis of the study, the authors analyzed the cost of the minimum “food basket.” For this analysis, we used the Rosstat’s methodology involving breaking up the population into decile (10-percent) groups. In this case, the methodological approach of Rosstat is used, in accordance with which the data estimated according to the number of persons in households are ranked according to the per capita welfare indicators and are cumulatively summed to obtain the total number of the population surveyed. This number is taken as 100%. The sum of all households, in which 10% of the total target population is concentrated, refers to the corresponding decile group of population aligned according to the growth of welfare indicators. The first decile group has the lowest incomes, and the tenth group—the highest ones. The existing Rosstat's methodology assumes that groups 1 and 2 are socially disadvantaged (poor) groups of population (with account of the 2014 data—28.74 million people). According to Rosstat's estimates, the following food groups of consumed food products exist for these categories of the population: Bread and Flour Products; Potatoes; Vegetables and Melons; Fruits and Berries; Meat and Meat Products; Milk and Dairy Products; Eggs; Fish and Fish Products; Sugar and Confectionery; Vegetable Oil and Other Fats. We calculated the value of the minimum monthly "food basket" using the prices calculated by Rosstat and those obtained as a result of the average minimum price monitoring.

Herewith, we made the following assumptions: in the category "Bread and Flour Products", we used the volume of consumption and the price of bread; in the category "Vegetables and Melons”—the volume of consumption and the price of cabbage; in the category "Fruits and Berries" – the consumption volume and price of apples; in the category "Sugar and Confectionery Products”—the volume of consumption and the price of sugar; in the category "Vegetable Oil and Other Fats”—the volume of consumption and the price of sunflower oil. In our opinion, this assumption does not significantly affect the outcome. The calculation results are shown in the table in Annex. The values obtained show that for the first group of population, the cost of the minimum "food basket" based on the Rosstat's average prices is 20.68% more than the value calculated by the average minimum prices. For the second group of the population, the obtained value of the minimum cost of the "food basket" is more by 45.4%. This result, in our view, proves that the minimum price level is different from the average price level calculated the Russian Federal State Statistics Service (Rosstat) to assess the value of the minimum "food basket." This fact is essential for determining the actual standard of living of the socially disadvantaged (poor) groups of population.

Summarizing the performed study, we should note that it is necessary to continue monitoring of the minimum retail prices for the "food basket" to expand the evidence-based statistical database confirming the possibility of their use for the indication of the economy crisis. Positive prospects of the possible adjustment of the Rosstat's monitoring and calculations methodology to improve the relevance of the Rosstat's assessment of poverty in Russia is also obvious.

References


Kiselev, V. (2003). The state of the retail food trade (for example Kemerovo). *Practical Marketing, 9*(79), 19-34.


Appendix

Table - Results of calculation of the minimum value of "food basket" for the first and second groups of population

<table>
<thead>
<tr>
<th>Products/Indicators of calculation</th>
<th>The first group, Consumption volume (kg pcs) per year</th>
<th>The second group, Consumption Volume (kg pcs) per year</th>
<th>Average minimum Price (Monitoring)</th>
<th>Average price (Rosstat)</th>
<th>The first group, the cost of the &quot;food basket&quot; per month, rub (at the average minimum prices)</th>
<th>The second group, the cost of the &quot;food basket&quot; per month, rub (at the average minimum prices)</th>
<th>The first group, the cost of the &quot;food basket&quot; per month, rub (at average prices)</th>
<th>The second group, the cost of the &quot;food basket&quot; per month, rub (at average prices)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bread and bakery products</td>
<td>81</td>
<td>88.6</td>
<td>22.43 P</td>
<td>47.11 P</td>
<td>151.42 P</td>
<td>165.63 P</td>
<td>317.99 P</td>
<td>347.83 P</td>
</tr>
<tr>
<td>Potatoes</td>
<td>49.6</td>
<td>56.3</td>
<td>36.20 P</td>
<td>109.67 P</td>
<td>149.64 P</td>
<td>169.85 P</td>
<td>436.77 P</td>
<td>495.77 P</td>
</tr>
<tr>
<td>Vegetables and melons</td>
<td>60.4</td>
<td>74.4</td>
<td>45.12 P</td>
<td>88.18 P</td>
<td>277.11 P</td>
<td>297.75 P</td>
<td>443.84 P</td>
<td>546.72 P</td>
</tr>
<tr>
<td>Fruits and berries</td>
<td>39.6</td>
<td>52.4</td>
<td>83.01 P</td>
<td>41.95 P</td>
<td>75.33 P</td>
<td>82.43 P</td>
<td>139.13 P</td>
<td>183.38 P</td>
</tr>
<tr>
<td>Meat and meat products</td>
<td>83.1</td>
<td>66.9</td>
<td>133.99 P</td>
<td>70.22 P</td>
<td>592.91 P</td>
<td>747.00 P</td>
<td>456.75 P</td>
<td>575.45 P</td>
</tr>
<tr>
<td>Milk and dairy products</td>
<td>174.4</td>
<td>215.7</td>
<td>54.71 P</td>
<td>38.68 P</td>
<td>795.19 P</td>
<td>983.50 P</td>
<td>562.15 P</td>
<td>695.27 P</td>
</tr>
<tr>
<td>Eggs, pcs.</td>
<td>160</td>
<td>183</td>
<td>67.03 P</td>
<td>193.31 P</td>
<td>893.76 P</td>
<td>1,022.23 P</td>
<td>2,577.47 P</td>
<td>2,947.98 P</td>
</tr>
<tr>
<td>Fish and fish products</td>
<td>14.2</td>
<td>173</td>
<td>177.90 P</td>
<td>73.81 P</td>
<td>210.52 P</td>
<td>256.48 P</td>
<td>87.34 P</td>
<td>106.41 P</td>
</tr>
<tr>
<td>Sugar and confectionery</td>
<td>22.9</td>
<td>26.6</td>
<td>56.32 P</td>
<td>46.46 P</td>
<td>107.48 P</td>
<td>124.85 P</td>
<td>88.66 P</td>
<td>102.99 P</td>
</tr>
<tr>
<td>Vegetable oil and other fats</td>
<td>8.4</td>
<td>9.4</td>
<td>74.30 P</td>
<td>107.17 P</td>
<td>52.01 P</td>
<td>58.20 P</td>
<td>75.52 P</td>
<td>83.95 P</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2,455.36 P</td>
<td>2,469.88 P</td>
<td>5,165.12 P</td>
<td>6,085.54 P</td>
</tr>
</tbody>
</table>

*Table - Results of calculation of the minimum value of "food basket" for the first and second groups of population*