

**PARAMETRES FORECASTING OF RUSSIAN GRAIN MARKET IN THE
LONG AND SHORT TERM**

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Abstract

The goal of this study is to characterize the prospects of development of the Russian grain market in the long term and the short term on the basis of generalization of experts' opinions, as well as studying the dynamics of regional grain prices. Considering the complexity of collecting and summarizing the opinions of leading Russian experts on various issues, the comparison of their views with the views of local experts seems promising. The study of seasonal price fluctuations is important for the participants of the grain market, because it allows organizing effectively sales policy and significantly increasing the profits from the sale of certain months of price action.

Keywords: Russian Grain Market

JEL Codes:

1. Introduction

From the agricultural point of view, Russia can be considered as predominantly northern country with fairly difficult climatic conditions. Despite the vast territory (1.7 billion hectares), not many areas are suitable for agricultural production; farmland area is just 22.6% of the total area. However, these indicators allow Russia to be one of the largest agricultural producers. Thus, Russia ranks the 3rd in the world on the potatoes production, has the 4th place on the sugar beet production, and the 6th place on the production of grains and legumes.

In the last decade of the twentieth century, Russia experienced a difficult transformation period related to the transition from a command to a market economy, which was accompanied by a decline in production in all sectors of the economy. As a result, the consumption of basic products per capita in Russia declined for a number of goods. In the last decade, agricultural production and food consumption increased, but some of them still do not reach the recommended standards (Table 1).

Taking into account the insufficient consumption level of milk and meat, the government takes measures to stimulate the development of animal husbandry. As a result, some positive dynamics of livestock production in Russia can be stated. For example, in 2013 the volume of livestock production was 1.8 billion rubles, which is 11.1% more compared to 2011, but in the field of dairy cattle breeding there are some problems remained (Table 2).

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Table 1. Consumption of basic food products per capita (kilograms)

Indicators	1990	1995	2000	2005	2012	Recommended dietary allowance	Consumption in 2012 г. in% of the recommended allowance
Potatoes	94	112	93	78	64	100	64
Vegetables	85	83	82	90	100	150	66,7
Fruit and berries	37	30	27	51	74	70	105,7
Meat and meat products	70	53	50	64	82	75	109,3
Milk and dairy products, l	378	249	199	244	267	305	87,5
Eggs, pcs.	231	191	202	209	220	250	88
Fish and fish products	15	9	14	17	22	26	84,6
Sugar	32	27	30	34	32	30	106,7
Vegetable oil	10,2	7,5	9,9	12,2	12,8	12	106,7
Bread products	97	102	109	113	98	105	93,3

Source: (Federal State Statistics Service, 2014)

Table 2. Production of major livestock products in Russia

Indicators	2011	2012	2013	2013 in % to 2011
Meat and poultry production, thousand tons	7519	8090	8542	113,6
Milk production, mln. tons	31,6	31,8	30,7	97,2
Egg production, bln. pieces.	41,1	42,0	41,3	100,5

Source: (Federal State Statistics Service, 2013).

Particular attention in Russian is given to plant growing, as the country has 10% of the world's arable land. The most important crops are grains and oilseeds, potatoes, sugar beets. Cropping patterns undergo certain changes. So, over the past five years, there is a tendency to reduction the acreage of grain and leguminous crops from 47.6 million hectares in 2009 to 45.8 million hectares in 2013. At the same time, there is an increase in technical crops and oilseeds, 33.3% and 38.8%, respectively.

Russia increases export of agricultural products. For example, in 2010 the total revenue from the export of food products amounted 397.1 billion US dollars, in 2013 this indicator increased from 32.5% to 526.3 billion rubles.

Grain has the largest share in the export of food products; Russia ranks the 6th in the world on its exports. In 2013, 19 million tons of grain were sold, which is 11% of its total export (Sakoyan, 2014).

The leader in the export structure of grain is wheat, which accounts 73%. The ratio of maize is 14%, of barley is 12%. In this regard, let us consider the world's wheat suppliers (Table 3).

Thus, grain is of particular importance for Russia as a strategic and socially important good. The situation which is formed in the grain market, grain's price conditions arouse interest of agricultural producers, consumers, legislative and executive authorities, that are interested in maintaining a stable social status of the society.

To study the grain market of Russia, the accumulated experience in the world should be taken into account. In particular, the volatility of grain prices is in the focus of research of the grain market in many countries and regions: China, Sudan, which is the largest developing region of Asia (Cui-xia and Yu-ling, 2012, Ahmedand, Abdelsalam and Siddig, 2012, Cummings, Rashid and Gulati, 2006).

Table 3. The world's leading suppliers of food wheat

Country	Wheat export, million tons		
	2012/2013	2013/2014	Deviation (+,-)
The USA	28	35	+7
The European Union	21,5	30,5	+9
Ukraine	14,5	23	+8,5
Canada	18,5	22	+3,5
Russia	10,7	18,5	+7,8
Australia	19	18,5	-0,5
India	8,5	8	-0,5
Kazakhstan	6,5	7,5	+1
Argentina	7,5	6,5	-1
Turkey	3,3	3,2	-0,1

Source: (Kovalchuk, 2013)

However, not all research methods that are used in different countries are applicable to the Russian grain market as it has a lot of differences. Researchers mark numerous problems in marketing facing the Russian grain farming which has great potential. These include: the opacity of the market and lack of awareness of its subjects, poor transport and logistics infrastructure, failure and lack of coordination of strategic and tactical measures of market regulation by the public authorities that are responsible for the corn and fodder provision of the country, the lack of developed stock trading of grain, high transaction costs (Altukhov, 2013, Rau, 2012, W.Liefertand, O.Liefert, 2012, Trukhachev, Bannikova, Anokhin, 2011).

Approaches to optimization of transaction costs can be found by studying the value chains. Such studies are based on the method of the survey; provide interesting and important data on the distribution of value - for example, the cost of rice in China (Chen, 2007). However, our attempt to examine the value creation on the local segment of the Russian grain market failed. The reason is the inability to obtain reliable information about pricing, sales channels and counterparties in a survey of market participants. The lack of such research in Russia once again confirms the existence of the most important problem of the domestic grain market - lack of transparency.

Thus, the main source of data for analysis and forecasting of the development of the grain market is the information that characterizes the main parameters of the produc-

tion and sale of grain in Russia and its regions, published in official sources. Important information is also given by experts' opinions, which, however, on several issues can have significant differences. Hence, a combination of different methods of analysis and comparison of expert evaluations, which allows contributing to raising awareness of market participants have potential.

2. Methodology

The goal of this study is to characterize the prospects of development of the Russian grain market in the long term and the short term on the basis of generalization of experts' opinions, as well as studying the dynamics of regional grain prices. Considering the complexity of collecting and summarizing the opinions of leading Russian experts on various issues, the comparison of their views with the views of local experts seems promising. Local experts may consider regional characteristics and are more accessible to agricultural producers.

In accordance with the goal the following tasks were accomplished.

1. The questionnaire for local experts was designed (Appendix A).
2. Local experts were selected. The main criteria for selection were:
 - experience in the grain market (at least 3 years);
 - ability to analyze problems studied, an objective comprehensive assessment of the issue without undue bias towards optimistic or pessimistic responses for purely psychological reasons;
 - willingness to cooperate.

Of the three selected two experts are heads of agricultural enterprises, one is Deputy Minister of Regional Ministry of Agriculture. Work experience in the grain market of two experts is over 15 years, and 7 years of the third of them. Their capabilities to assess the situation on the grain market on a 10 point scale, they estimated as 8 points, and one of the experts as 5 points that can be associated with the experience of work in this area.

3. As the opinions of leading Russian experts were chosen statements of the director of the analytical center "SovEkon" A. Sizov, Vice-President of the Russian Grain Union (RGU) A. Korbut, RGU President A. Zlochevskiy, General Director of LLC "ProZerno" V. Petrychenko, Deputy Minister of Agriculture of Russia I. Shestakov, General Director of the Institute of Agricultural Market Studies D. Rylko, head of the commission for food markets monitoring A. Dvorkovich, Deputy General Director of LLC "International Grain Company" N. Demyanova, executive director of the National Union of agricultural insurers K. Bizhdova, the Head of Development Department of loan products in AIC "Sberbank" A. Kulik.

4. Compared the views of leading Russian and local experts revealed their differences and similarities, the results obtained are summarized and they are given a quantitative rating.

5. To raise awareness of agricultural producers, seasonal variations in prices for wheat in five years were investigated and on the basis of the obtained coefficients seasonal wave was plotted. For calculations the information on the prices of grain in major grain-producing regions of Russia - Stavropol and Krasnodar Territories, Rostov Region was used. This information is available on the website of the Federal State Statistics Service, and the official website of the Ministry of Agriculture of the Russian Federation.

To identify naturally recurring fluctuations in the values of prices depending on the time of year on the basis of the seasonality indexes for each month was plotted seasonal wave constructed using the method of constant mean. The algorithm of calculations is as follows:

1. The average for the same month in number of years is calculated

$$\bar{y}_j = \frac{\sum_{k=1}^m y_{kj}}{m}, j = 1, 2, \dots, 12; (1)$$

where y_{kj} – indicator value for j month of k year;

m – number of years.

2. The average for the entire study period is calculated:

$$\bar{y} = \frac{\sum_{k=1}^m \sum_{j=1}^{12} y_{kj}}{12m} (2)$$

3. Seasonality index is calculated as a percentage of the average of the month to the average of the year:

$$I_j = \frac{\bar{y}_j}{\bar{y}} \cdot 100\%, \quad j = 1, 2, \dots, 12 (3)$$

Conclusions are based on the results of values "peaks" and "bottoms" (max and min).

The study of experts' assessments of the Russian grain market

Summarizing the results of the survey of local experts, it should be noted that the situation in the grain market in recent years they estimated as positive, noting moderate growth. In explaining the reasons for the growth, experts agreed unanimously natural climatic changes. Also, according to two people, the reason was the increase in demand for grain in the country for food and non-food needs. One of the experts highlighted the reasons for changing the pricing environment in the domestic and foreign market.

Data we obtained to some extent correspond to the materials presented at the Third Congress of the National Union of grain producers. Thus, according to the director of the analytical center "SovEkon" A. Sizov, the change is observed in pricing model on the market. If earlier grain producers were focused on export world prices, and the "internal situation was hostage of external environment", in the 2012-2013 agricultural year sellers are primarily oriented on domestic consumers (Sizov, 2013).

With regard to assessment of the impact of imports and exports to domestic grain production in recent years, local experts' opinions vary from mild to very insignificant influence. But, according to the vice-president of the Russian Grain Union A. Korbut, we shouldn't underestimate the impact of imports, since not all gross production is for food purposes. Often there is a lack of grain of own production and of suitable quality, and therefore the import is needed and has a definite impact on grain production in the country (Korbut, 2012).

As for the impact of exports on domestic production, the leading Russian experts agree that more volume on the internal production affects the value of exports. A. Zlochevskiy explains this by the fact that the scope of possible export calculated by "harvest of the current growing season + carryover stocks at the beginning of the season - the annual demand of the domestic market" (Zlochevskiy, 2009).

Using the representation formula, we have made two rough calculations for the season 2012-2013. In the first case, which is based on the official data: 75 million tons of new harvest grain + 19 million tons of carryover stocks - 71 million tons of domestic consumption. It turns out about 23 million tons (the official figure is 21.8 million tons) (The official portal of the Ministry of Agriculture of the Russian Federation).

The second calculation is based on data from leading Russian experts of the grain market: 73 million tons of new harvest ("SovEkon") + 15 million tons of carryover stocks ("SovEkon") - 68 million tons of domestic consumption (RGU). It turns out 20 million tons.

Similar figures, but nevertheless they do not coincide. In this case, analytical centers refer to data from the Ministry of Agriculture and the Federal State Statistics Service. This is further evidence of the information secrecy of the grain market in Russia.

Explanation of the actual situation with grain exports gave the head of the analytical center "ProZerno" V. Petrychenko. According to him, at the beginning of the season, the summer of 2012, the export was active, grain shipments increased, but in January 2013 there was a significant decrease. This is due to changes in the structure of supply. For exporters maize and rice became more interesting cultures. Supply of wheat decreased due to the fact that it has become non-competitive in the world market (Petrychenko, 2012). Thus, the influence of the world market on the domestic grain market is obvious.

The views of experts at the local level on the growth prospects of the grain market in the short term should be evaluated as more cautious and balanced than uniquely optimistic or pessimistic. They are of the opinion that the grain market will grow moderately.

At the same time as the main factors are: the growing demand for grain in the country for food and non-food needs, natural - climatic changes, price changes in the domestic grain market, the gradual creation of a market infrastructure. This position coincides with the opinion of N. Dronin and A. Kirilenko (Dronin and Kirilenko, 2010). As less significant reasons such factors as the macroeconomic situation in the country and price changes in the foreign grain market were highlighted.

Among the leading Russian experts there are some of similar views, but there are those who represent the further development of the grain market more pessimistic.

According to General Director of the Institute for Agricultural Market Studies D. Rylko, development prospects of the grain market in the 2013-2014 season seem to be not very favorable. His opinion the expert justifies by the fact that the production of wheat in the last season was 37.7 million tons; it is the lowest level since 2003-2004, when the crops were affected by bad weather, and almost 10% lower than in 2010-2011, when there was a ban on grain exports. Despite the decline in production from July, Russia exported 10.5 million tons of wheat, which led to a sharp decline in stocks. Reserves are projected to the end of the season will amount 5.6 million tons, which is the lowest level

since 2007-2008, when the world was experiencing food crisis and grain prices rose. But if we talk about the next two or three seasons, the situation will definitely change as the increase or decrease in grain production is highly dependent on natural - climatic conditions. In general, the forecast for the next 2-3 years coincides with the opinion of local experts (Rylko, 2013).

About the prospects for growth of the grain market in the long term (10 years) there are no serious differences of opinion of local experts. Two of them believe that the grain market will grow moderately, while highlighting such causes as changes in demand for grain in the country for non-food use, changes in demand in the world market, improving the infrastructure of the grain market and the nature - climate change. One expert believes that the grain market will also grow, but only in certain regions. As a reason, other than those of other experts, he calls the changes in the agri-food policy, as well as the macroeconomic situation in the country. A study conducted in India, confirms the importance of agricultural policy in order to stabilize grain prices. A comparison between alternative policies to stabilize prices and the organization of the buffer stocks, in terms of their effect on the internal price stability, allows prioritizing the choice of one of the controls on the grain market (Jha and Srinivasan, 1999).

Head of the Monitoring Committee of the food markets A. Dvorkovich noted significant potential of the Russian grain market in the long term. In addition, he is one of the few who thinks that Russia's WTO membership is a positive aspect that will lead our country to a new level, in particular, the grain market, through the improvement of its infrastructure by foreign investments (Dvorkovich, 2013).

Experts at the local level are of the opinion that the growth of the grain market in the medium and long term will happen through changes in the structure of the grain sector due to the inflow of foreign capital in terms of Russia's membership in the WTO. This is undoubtedly good for the development of international integration, to enhance the competitiveness of domestic products, but the question is that Russian agriculture is losing a number of support measures, such as reduced prices for gas for the transportation of agricultural products, mineral fertilizers.

On this subject N. Demyanov, Deputy General Director of LLC "International Grain Company", expresses his opinion. According to him, there is high time for Russian agriculture and the grain sector in particular, when the word "innovation" is of special significance. New and progressive should be not only the car parks, the technology of growing and processing equipment. Equipment, without major changes in the level of awareness and competence of people employed in agriculture, is not able to lead the industry to new heights. This means that the industry requires new thinking, "mental reprogramming." In order to produce products that can be sold successfully in the domestic and international markets, Russian farmers require exhaustive possession of information about competitors, which will increasingly become foreign manufacturers. Under these conditions, the agricultural market professionals need an entirely new outlook that goes far beyond its field, village, region, state (Demyanov, 2012).

In addition to the problems facing the grain market in terms of Russia's membership in the WTO, there are still a lot of internal problems that must be solved. One of them is the infrastructure of the grain market, which is far from perfect. Most undeveloped its elements as local experts believe are the lack of availability of financial re-

sources, the level of logistics and imperfection of the legislation in terms of land relationships (the structure of land ownership, the quality of land registration system). So consider two of the group of experts. A third of them are highlighted in addition to the same elements, yet the level of storage infrastructure. It's not so much divergence of views as a condition profiles to choose the three most important obstacles. It is obvious that all of these problems are long overdue and need to be solved.

It should be noted that the problem of imperfect market infrastructure is common to developing countries (VanTilburg, 2010). For example, if we look at the problem areas of marketing in developing regions, it is possible to identify those which are peculiar to the Russian grain market:

- high transaction costs, which reduce market opportunities;
- inefficient functioning of formal institutions (the Russian Grain Exchange);
- lack of communication channels between producers and consumers (a large number of intermediaries, resulting from a lack of development of grain exchanges);
- uneven distribution of the added value in the supply chain;
- weak institutional environment.

In support of this conclusion it is possible to cite the opinion of K. Bizhdov, executive director of the National Union of agricultural insurers (NUA). So, K. Bizhdov notes that "... the results of the survey of agricultural producers, which conducted by NSA, as the main factor that allows reducing the risks associated with crop production, they called agricultural insurance. However, they point out the complexity of the procedures for obtaining subsidies to support the insurance and insurance contracts, they do not accept a large amount of documentation. Still, there are no standardized documents, and the law does not contain an exhaustive list of required documents. For agricultural producers it is often difficult to understand the rules of the insurance conditions of the insurance contract and its annexes" (Bizhdov, 2013). In this regard, it is important for regional governments in agribusiness, industry associations and experts to explain the procedure and conditions of insurance. Already we have the experience in conducting seminars and regional meetings on new mechanisms for agricultural insurance, lending by the Ministry of Agriculture in collaboration with NSA, it should be continued.

In addition, A. Kulik, the Head of Development Department of loan products in AIC "Sberbank", described the overall financial position of agricultural producers, noted the high proportion of accounts payable in agribusiness. The same problems are shared by other developing countries, such as India (Coel and Kaur, 2008). In Russia, the loan burden, which now exists in the industry, is coming to 2 trillion rubles, and continues to grow. To pay for its part of the insurance premiums, agricultural producers are often forced to use credit. In 2012, there was a decrease by 30% the volume of credit resources attracted by them (Kulik, 2013).

This was largely due to the fact that this year, banks have tightened requirements for obtaining new loans - in the form of additional collateral (which firms often do not have, because all the fixed assets are pledged). Therefore, many companies face with the dilemma: take a loan and buy the required amount of material resources for the sowing, or to send money on insurance. In most cases, the decision is made not for the benefit of insurance. The use of credit resources for the payment of insurance premiums is difficult

not only tightening these requirements, but also the reluctance of banks to issue credit for these purposes.

But the sequences of solutions of many problems on the local grain market experts see differently. Two of the experts in the first place put the agri-food policy, then foreign policy, macro-economic and administrative. Third expert foreign policy determined as the most significant, followed by agri-food policy, then the administrative and macroeconomic policies.

Russian experts also put agro-food policies in the first place. For example, the Deputy Minister of Agriculture of the Russian Federation I.V. Shestakov said that the formation of an effective agricultural policy is the key to success in the field of agriculture. Priorities of agricultural policy, in his opinion, should clearly define the hierarchy of objectives for different groups of market participants. For farmers: improving the competitiveness of the agricultural sector; labor productivity growth; achieving an acceptable level of income and reduce volatility. For consumers: food security. For society as a whole: the protection of the environment and biodiversity; conservation of agro cultural landscapes and recreational areas; ensuring the viability of rural areas. Achieving these goals is a complex interdisciplinary problem and formation of a civilized market of grain should be conducted in line with the solution of these problems (Shestakov, 2012).

In order to reduce the results and give them a quantitative assessment, including a comparison with the views of leading Russian experts, we shared the questions presented in the questionnaire into two parts:

- issues that allow to quantify (the scaled) assessment of the state and prospects of development of the grain market;
- issues that allow to specify the expert opinion about the reasons for the growth of the grain market in the short and long term, and to identify the least-developed infrastructure elements of the grain market, hindering its development.

Considering that a number of issues had been given on the scales of different dimension, we presented all the five-point scale to measure and on the basis of this assessment is considered that experts put at expressing their opinions (Table 4).

Table 4: A formal expert opinion on the state and prospects for the development of the grain market

Market estimation parameters	Evaluation of local experts (on five-point scale)	The opinions of leading Russian experts
The tendency of the grain market development for the last 2-3 years	3,7	3,7
Impact of imports on domestic production for the past 2-3 years	2,8	3,4
Impact of exports on domestic production for the past 2-3 years	2,8	1,7
Growth prospects of the grain market in the next 2-3 years	2,0	2,0
Growth prospects of the grain market in the next 10 years	1,7	2,0

These tables allow us to conclude that the expert opinions of local and Russian levels differ significantly. For example, on issues such as the development of the grain market in recent years and its growth prospects in the next 2-3 years, their views converge absolutely. Impact of imports on the domestic production of grain leading Russian experts estimate higher. In general, both local and Russian experts suggest positive trends in the further development of the grain market.

Comparison of the opinions of two expert groups revealed the similarity of their positions on the development trend of the grain market at a given time, in the short and long-term factors affecting the grain market, the nature of changes in market structure, etc. As the problems of grain market experts of both levels distinguish its infrastructure, the level of logistics development, public policy carried out towards the grain market, etc. We chose the answers noted by experts on issues related to the causes of the grain market growth in the short and long term and least-developed infrastructure. After determining the repeatability of individual responses, we have put on the first place those answers that the most frequent and more descending (Appendix B).

Summing up the results of the first phase of the study we would like to mention the similarity of views on the existing problems of the grain market at the local and federal level, which indicates that the objectivity of the views expressed, as well as the need for joint efforts of central and regional authorities in solving of these problems.

But there are questions that agricultural producers have to decide individually for their own benefit. They are, for example, when and at what price to sell their products. To justify such decisions need to analyze the price dynamics, try to identify patterns of change, to determine the cause of these changes on the basis of the results to predict the market situation and to act in the most convenient moment.

Forecasting of seasonal prices for the regional grain market

Stavropol Territory refers to the major grain-producing regions of Russia. The level of grain prices depends largely on financial and economic state of agribusiness. There are many methods of prices forecasting, for example, Chinese scientists quite widely covered the subject, comparing the classical ARIMA-models and neural network models (see, for example, Zou et al, 2007). But in addition to the annual average price level on which separate enterprise cannot influence, agricultural producers are interested in seasonal fluctuations. Price volatility is one of the most important problems in the Russian grain market. And not only in Russia (Shively, 2001).

At the same time, the volatility is not only a problem, but also an opportunity to earn. If grain producers aware trends in prices during the year, it increases their chances to choose the most successful time for grain sales. Therefore, in this study we used the method of seasonal wave plotting for forecasting. First of all, let us characterize the general trends in grain prices in the previous period. Price increases in Stavropol Territory in 2011 compared to 2009 on almost 21%. The rise in prices in 2011, experts associated with the lifting of the embargo on the grain sales (Appendix C).

The subsequent rise in prices in the season 2012-2013, was due to drought in Russia in 2012, which resulted in grain harvest decreased by 25% - to 70.9 million tons, and grain prices rose at least twice (Figure 1).

Average selling prices for soft food wheat of 3rd class were growing during 5 months of 2012, then there was a decrease of 7.3% during 2 months (December-January),

and then there was a sharp rise in prices of 22.2%. In addition, it should be noted that the purchase price does not vary in proportion to changes in sales prices: with a sharp decrease in sales prices, purchase prices reached the highest point of its growth (10600 rub per ton). Also, as the price for soft food wheat of 3rd class, prices to forage grew in the 3rd quarter of 2012 at a fast pace (25.4%), but in the 4th quarter growth rate slowed 5.5%, a decrease with respect to the 3rd quarter was 19.9% (Figure 2).

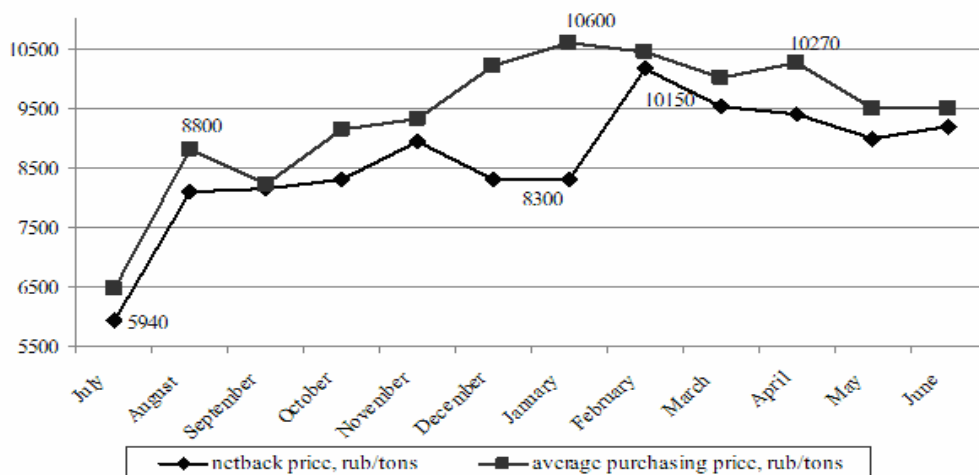


Figure 1: Average prices for soft food wheat of 3rd class in the 2012-2013 season in Stavropol Territory

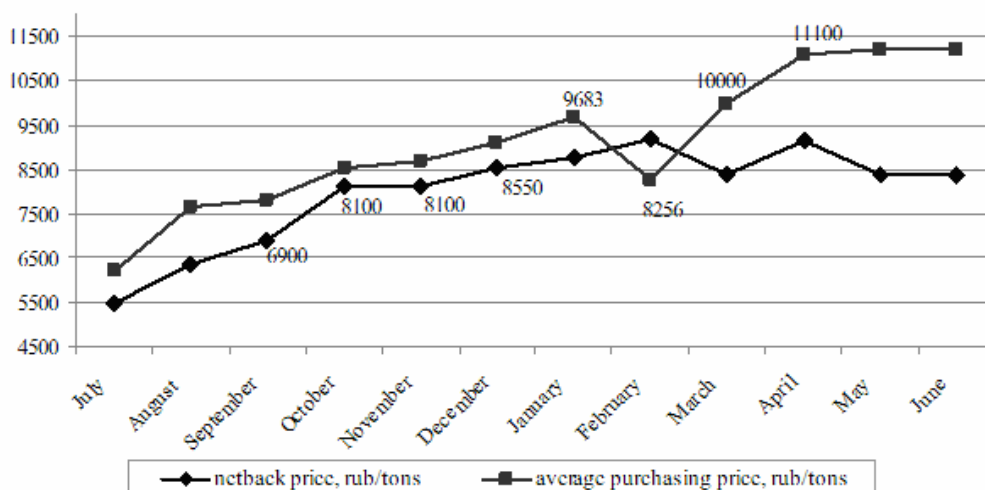


Figure 2: Average prices on wheat forage in Stavropol Territory in the 2012-2013 season.

Analyzing the curve of average purchase prices for wheat forage, we can note a steady upward trend, except for a sharp decline in February 2013 by 14.8% compared to January 2013. But in March, there was an increase in average purchase prices for wheat forage at 3.2% and 21.1% as compared to January and February 2013, respectively.

One reason for the difference between selling prices and purchasing, is that for the sale of grain is characterized by high transaction costs, especially those associated with inter-regional transportation of grain, the cost of the paperwork in the implementation, often cause more difficulties of organizational and especially bureaucratic, which often lead to corruption schemes in the sale of grain. According to expert estimates, the cost of grain production in the share of infrastructure and logistics costs in its supply for animal feed, industrial processing, and food purposes and for export accounts for 30 to 70%.

If we compare the Stavropol region with other major grain producing regions in the south of Russia - Krasnodar Territory and Rostov Region, it may be noted that in Stavropol Territory, the average purchase price for wheat food grade 3 is lower than in neighboring regions. In this case, the price level is less stable (Figure 3).

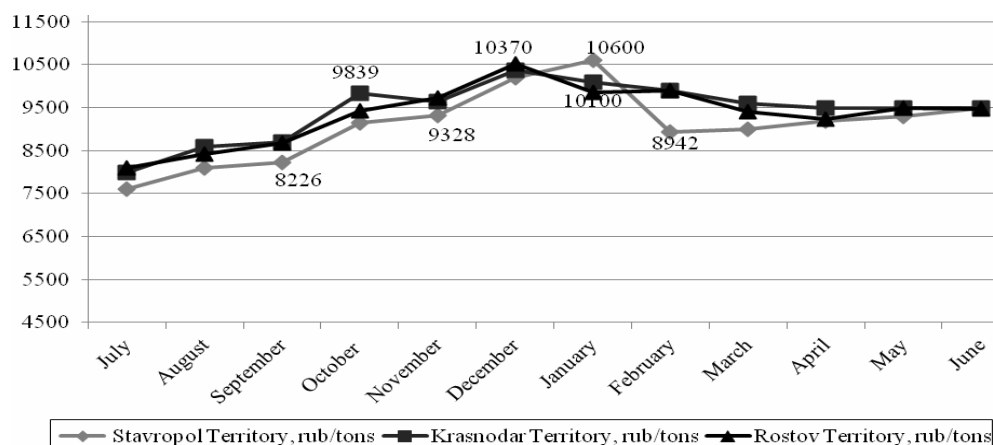


Figure 3: Average procurement price of food wheat of 3rd class in Stavropol, Krasnodar and Rostov Territory of the season 2012-2013

Graph showing the change in the average purchase price in Stavropol Territory has sharp ups and downs, in contrast to the graphs of the dynamics of purchase prices of the Krasnodar Territory and Rostov Region, which almost overlap. One of these downturns occurred from January to February: average purchase price of food wheat of 3rd class in February fell by 15.7%, or 1,658 rubles/ton.

The persistence of certain regional differences in wheat prices seems inevitable. One of the factors that determine the base (minimum) level of price differences is the level of transport tariffs. Under the influence of the transport component in the price of cereals are prices in regional markets, in this case, the Stavropol Territory, Krasnodar Territory and Rostov Region. Consumers are traditionally oriented to certain areas of the location of producers in order to reduce transportation costs. Therefore, such a difference in the average purchase prices associated with the logistics of transport and existing infrastructure (the main ports of south Russia are located in the Krasnodar Territory, respectively, transport costs are cheaper than in Stavropol Territory).

Price changes are typical for large grain market because this market is exposed to a variety of factors, response for which should be very fast. It may be the weather conditions, inflation, political changes, dynamics of the livestock industry, etc. One way to re-

duce prices in the grain market is commodity interventions. Regular commodity interventions were conducted in Russia since the beginning of February 2013 due to the increase in grain prices from December 2012. In connection with the commodity interventions and increased supply of grain in the market prices in Stavropol Territory in February 2013 significantly reduced (Figure 4).

The situation presented in Figure 4 clearly shows the effectiveness of trade interventions as one of the mechanisms of state regulation of prices. In March 2013 the average sales price of 4th grade wheat decreased by 22.7% or 2,050 rub/tons compared to February 2013. In the following months, there was a slow growth. From March to June 2013 the growth rate of the average sales price was 2.1% and the rate of growth in average purchase price- 3.0%.

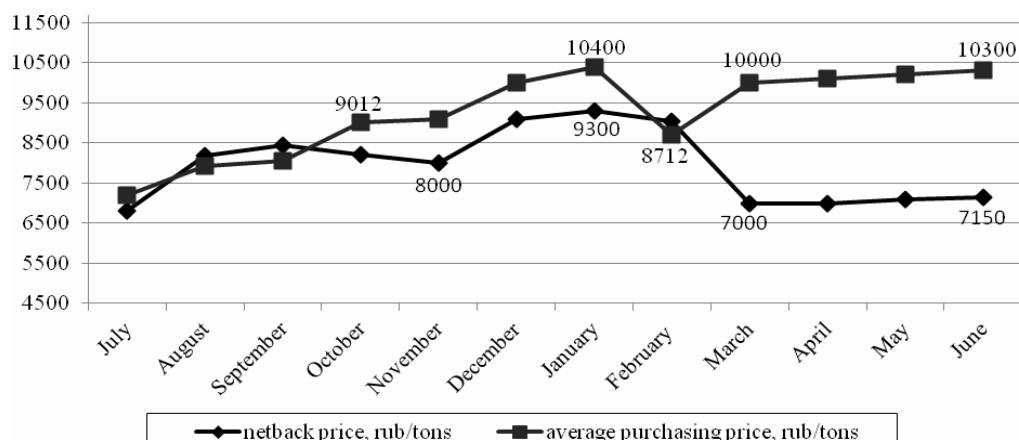


Figure 4: Average prices for 4th grade food wheat in the season 2012-2013 in Stavropol Territory

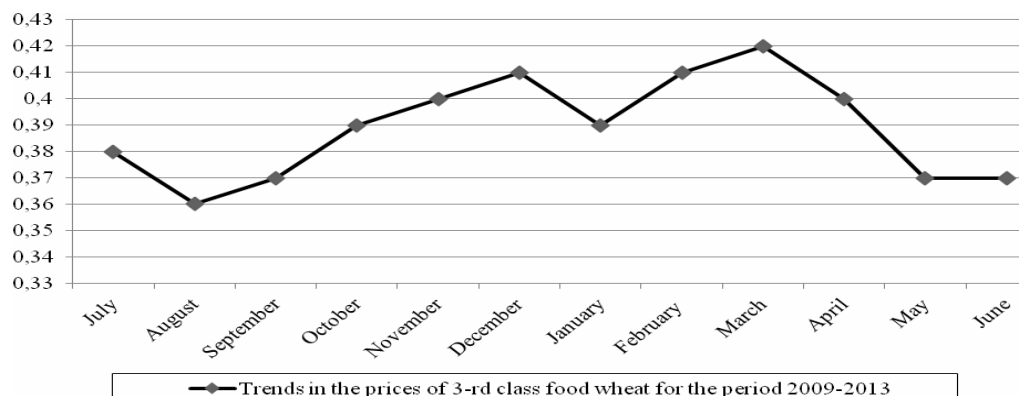


Figure 5: Average seasonal fluctuations in prices of 3rd class wheat during 5-year period for Stavropol Territory

Calculation of graphics of seasonal wave in wheat prices over the last 5 years in Stavropol Territory shows that early in the season after the harvest decrease in prices, followed by a slow but steady growth until the end of the year. Followed by a turning point in

January, prices were down, most likely due to the commodity interventions aimed at reducing the rising prices. After then prices continued to rise, reaching its peak in March, and then steadily declined to clarify the situation with the new harvest. When a new crop in the market, prices increased again(Figure5).

The analysis shows that there are no significant differences on the price for the country as a whole, and the discrepancies can be explained by regional characteristics and the level of development of the infrastructure of the region.

3. Discussion and conclusion

This study allows us to make the following conclusions. The comparison of the local and the leading Russian experts allows us to speak about the coincidence of their views on many issues, testifies to the objectivity of their positions and sufficient expertise of local experts.

The grain market in recent years has a positive dynamics of development in terms of sales volumes. The reasons for this were the growth of domestic demand and price changes in domestic and global markets. Impact of imports and exports to the Russian market is insignificant; its dynamics depends on the gross domestic production. This indicator is crucial in determining the volume of imports and exports.

Forecasts for the development of the grain market in Russia are favorable in both the short and long term. The main reason for this is the powerful potential of the grain sector of the agrarian economy. However, the full use of this potential is likely to be inhibited in the first place because of inadequate market infrastructure.

Basically, the improvement of the grain market infrastructure as it is forecasted to happen at the expense of Russia's participation in the WTO, which will entail the influx of foreign capital, and this is directly reflected in the change in the grain market infrastructure. At the moment, the market infrastructure is poorly developed, for its development investments and qualitative change are needed in industry performance. The Russian market alone is not able to structural change in the short term, and competition, which involves participation in the WTO, should be the driving force and motivation for such changes.

The market growth is also expected due to factors such as the increase in domestic demand for non-food use and favorable natural and climatic conditions. This suggests that engaged in the production of grain in the future will be profitable, as well as today. However, agricultural producers need to strategically think about how to increase their competitiveness, especially with the entry into the WTO, not to be driven out from their own market.

Trends in the development of the grain market of Stavropol Territory do not have significant differences from the trends in the development of the grain market of the country as a whole, because any changes that occur at the federal level immediately reflected at the regional. In addition, a full-fledged regional grain market, independently functioning, does not exist; it is associated with other regions, the federal districts through the export - import supplies of grain, its products, pricing mechanism, etc.

The study of seasonal price fluctuations is important for the participants of the grain market, because it allows organizing effectively sales policy and significantly increasing the profits from the sale of certain months of price action. Regularly recurring

price changes allow us to determine the most favorable time to sell products. In this case, for wheat of 3rd class it's March, in which the price is maximized. If producers have the ability to store grain until then, they can get the maximum profit. If this is not possible (for example, because of the need to repay the loan), then they need to choose a different month, less cost effective, but the most acceptable to the manufacturer in terms of reducing the cost of storage. In this case it may be November and December.

Promising in this respect are collateral interventions that will let to give the grain to the state agent for grain storage, get the price for it close to the cost, pay off creditors and re-seed the field. And then act on the situation: if, for example, wheat will rise in price, return the state money without any kind of overpayments, and take grain to sell on the open market. If prices do not grow enough, grain remains in state ownership. Still, mortgage intervention will postpone the problem of realization, and do not solve completely. In connection with this, and there is a need to use collateral intervention paired with seasonal fluctuations in prices that will calculate the time when they need to buy grain and sell at more competitive prices.

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Appendix**Appendix A. Questionnaire on assessing the prospects for the development of the grain market****Characteristics of expert**

1.	Expert status	
1	Top manager of the company	
A	In Russian company	☐
B	In foreign company	☐
B	In joint company	☐
2	Head of marketing and analytical services company	
A	In Russian company	☐
B	In foreign company	☐
B	In joint company	☐
3	Independent market analyst	☐
4	State employee	☐
2.	How many years have you been working in agribusiness?	
1	Up to 5 years	☐
2	5-15 years	☐
3	15 years	☐
3.	Experience	
1	In Russia	☐
2	In CIS	☐
3	In other contries	☐
4.	To what extent do you consider yourself an expert on the grain market 10-point scale	☐
1	10 points	☐
2	8 points	☐
3	5 points	☐
4	below 5 points	☐

Characteristics of the market

1	2	3
5.	How did the grain market develop in the last 2-3 years?	
1	Boomed	☐
2	Grew moderately	☐
3	Remained unchanged	☐
4	Declined	☐
6.	If there was an increase in the grain market, indicate the main reasons for the increase (up to three)	
1	Growth in domestic demand for food needs	☐
2	Growth in domestic demand for non-food use	☐
3	Growth in demand in the world market	☐
4	Changes in consumer income	☐
5	Price changes on the domestic market	☐
6	Price changes in the foreign market	☐
7	Creation of market infrastructure institutions in the country	☐
8	Natural and climatic changes	☐
9	The situation in the adjacent market(s) (name the market (s))	☐
10	Liberalization of world markets	☐
11	Agri-food policy	☐
12	The macroeconomic situation in the country	☐
13	Other (please specify)	☐
7.	If there was a decline on the grain market, indicate the main reasons for the decline (up to three)	
1	Reduction in domestic demand for food needs	☐
2	Reduction in domestic demand for non-food use	☐
3	Reduction in demand in the world market	☐

4	Changes in consumer income	☐
5	Price changes on the domestic market	☐
6	Price changes in the foreign market	☐
7	Lack of market infrastructure institutions	☐
8	Natural and climatic changes	☐
9	The situation in the adjacent market (s)	☐
10	(enter the market (s))	☐
11	Liberalization of world markets	☐
12	agri-food policy	☐
13	The macroeconomic situation in the country	☐
8.	Evaluate how import influenced on domestic production of grain for the past 2-3 years	
1	Strongly	☐
2	Moderately	☐
3	Impact of imports is insignificant	☐
9.	Evaluate how the export of grain influenced on domestic production for the past 2-3 years	
1	Strongly	☐
2	Moderately	☐
3	Influence of exports is insignificant	☐
10.	Growth prospects of the grain market in the next 2-3 years	
1	Will grow rapidly	☐
2	Will grow moderately	☐
3	Will grow in certain regions of the Russian Federation	☐
4	Will remain unchanged	☐
5	Will be reduced	☐
11.	Growth prospects of the grain market in the next 10 years	
1	Will grow rapidly	☐
2	Will grow moderately	☐
3	Will grow in certain regions of the Russian Federation	☐
4	Will remain unchanged	☐
5	Will be reduced	☐
12.	What will be the engine of the grain market in the next 2-3 years	
1	Change in domestic demand for food needs	☐
2	Change in domestic demand for non-food use	☐
3	Changes in demand on the world market	☐
4	Changes in consumer income	☐
5	Price changes on the domestic market	☐
6	Price changes in the foreign market	☐
7	Creation of market infrastructure institutions	☐
8	Natural and climatic changes	☐
9	The situation in the adjacent market (s) (specify the market (s))	☐
10	Liberalization of world markets	☐
11	Agri-food policy	☐
12	The macroeconomic situation in the country	☐
13	Other (please specify)	☐
13.	What will be the engine of the grain market in the next 10 years	
1	Changes in consumer demand in the country for food needs	☐
	Change in domestic demand for non-food use	☐
2	Changes in demand on the world market	☐
3	Changes in consumer income	☐
4	Creation of market infrastructure institutions	☐
5	Natural and climatic changes	☐
6	The situation in the adjacent market (s)	☐
7	(specify the market (s))	☐
8	Liberalization of world markets	☐

9	Agri-food policy	☐
10	The macroeconomic situation in the country	☐
14.	How the pattern of the grain sector in Russia will change	
1	Consolidation of	☐
2	Parish (increased participation) of foreign capital	☐
3	The growth of local manufacturers	☐
4	Increasing specialization of companies	☐
5	Increasing specialization of regions	☐
6	Other	☐
15.	What elements in the food chain are currently constraining (specify 3 most significant obstacles)	
1	Production of material and technical resources for producers (specify what the most)	☐
2	Quality of the workforce	☐
3	Quality of management	☐
4	Land relations (legislation, the structure of land ownership, the quality of the land registration system, and others.)	☐
5	Availability of financial resources	☐
6	The level of development of logistics	☐
7	The level of development of transport infrastructure (specify which elements - specialized vehicles, roads, ports, driveways, etc..)	☐
8	Level of development of storage infrastructure	☐
9	The level of primary processing (specify details)	☐
10	The level of recycling (provide details)	☐
11	The level of development of wholesale trade (specify details)	☐
12	The level of development of retail trade (specify details)	☐
13	Other (please specify)	☐
16.	Indicate which policy is the most important for the development of the sector Assign the steps of blocks 1 to 4 (1 least significant 4 - is the most important block), then the event in the blocks (1 Least significant event)	
Unit 1	Foreign Policy	☐
1	Increasing the level of import protection	☐
2	Change in the mechanism of import protection (specify how)	☐
3	Introduction of export subsidies	☐
4	Abolition of export duties	☐
5	Cancel the import tariff on raw materials / equipment (circle all that apply)	☐
6	Policy change in international agreements (please specify)	☐
7	Change negotiating position on WTO accession (please specify)	☐
8	Other (please specify)	☐
Unit 2	Administrative Policy	☐
1	Simplification of procedures for business registration	☐
2	Reduce the administrative control of the business	☐
3	Regularization of land ownership	☐
4	Improving the procedures for bankruptcy	☐
5	Other (please specify)	☐
Unit 3	Macroeconomic policy	☐
1	Appreciation / depreciation of the ruble (underline)	☐
2	Regulation of natural monopolies	☐
3	Regulation of transport tariffs	☐
4	Changing the tax system (specify how)	☐
5	Improving the investment climate (please specify)	☐
6	Other (please specify)	☐
Unit 4	Agri-food policy	☐
1	Budget investments	☐
2	Stimulating private investment (specify how)	☐
3	Increase in budgetary expenditure on agriculture	☐

4	Change mechanisms of support access to credit (please specify)	☐
5	Change other support mechanisms, additional types of support (please specify)	☐
6	Other (please specify)	☐

Appendix B: Justification of experts' opinions on the state and prospects development of the grain market

Market evaluation parameters	Evaluation of local experts	The share of chosen the answer, %	Opinion of the Russian level expert
The main reasons for the growth	climatic changes	100,0	if earlier grain producers focused on export world prices, now sellers are guided primarily by domestic consumers
	growth in domestic demand for non-food use	66,6	
	growth in demand in the world market	33,3	
	price changes on the domestic market	33,3	
	price changes in the foreign market	33,3	
The reasons for growth in the next 2-3 years	growth in domestic demand for food needs	33,3	market prospects of grain this season seem to be not very favorable, but in the next two seasons, the situation will definitely change as the increase or decrease in the grain market is heavily dependent on natural – climatic conditions
	climatic changes	100,0	
	changes in demand within the country for non-food use	66,6	
	price changes on the domestic market	66,6	
	market infrastructure, institutions	66,6	
	changes in demand for domestic food needs	66,6	
	price changes in the foreign market	33,3	
Reasons for the growth of the grain market in the next 10 years	macroeconomic situation in the country	33,3	good potential for the development of the Russian grain market in the long term, the impact of WTO accession for the grain market by improving its infrastructure through foreign investment
	market infrastructure, institutions	100,0	
	changes in demand on the world market	66,6	
	climatic changes	66,6	
	changes in demand within the country for non-food use	33,3	
	agri-food policy	33,3	
Elements of the structure of the grain market which are currently limiting factors	macroeconomic situation in the country	33,3	insufficient development of agricultural insurance, the complexity of the procedures for obtaining grants and insurance contracts, high proportion of accounts payable
	availability of financial resources	100,0	
	the level of development of logistics	100,0	
	land relations (legislation, the structure of land ownership, the quality of land registration system, etc..)	66,6	
Changes in the structure of the grain sector	level of development of storage infrastructure	33,3	industry requires new thinking, "mental reprogramming", requires ownership comprehensive information about competitors, which will increasingly become foreign manufacturers
	Parish (an increase of foreign capital)	100,0	

Appendix C: Prices on grain crops in Stavropol Territory, implemented by the agricultural organizations on the main distribution channels, rub/ton

Grains	(1)			sold from the total volume								
	2011	2012	2013	(2)			(3)			(4)		
Grains and legumes	5104	6308	6959	5130	5591	6191	3450	3710	4150	4746	4691	5291
wheat	5097	5267	7884	6250	5509	6103	3384	3755	4140	4890	4645	5119
corn	6440	7428	7654	6789	7588	7730	3412	3856	4759	4285	-	3136
barley	4270	4374	5712	5276	4611	5967	3341	3269	4597	4699	4762	5897
legumes	5705	6695	6584	6389	6805	7621	3983	4266	5756	4990	4680	7277

Notes: (1): Implementing all channels. (2): processing organizations and organizations of wholesale trade (including businesses and organizations engaged in procurement for state and municipal needs). (3): population (through the catering facilities, the issuance and sale in respect of wages). (4): Barter transactions (exchange operations).