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Russian Food System in Transition*

ABSTRACT: The evolution of vertical coordination systems and pricing mechanisms in the Russian food system are summarized. The activities in the stages of the food vertical chain during the command economy period were coordinated administratively similar to an integrated firm. Coordination in the food chain has evolved from mostly vertical expansion through quasi integration to mostly vertical mergers, as the Russian economy has started to move toward a more market oriented system. The unique characteristics of the exchange system and the structural nature of agriculture in the potential importing country are important considerations to take into account by exporting agribusiness firms.

Russia was a major grain importer prior to the 1991 breakup of the USSR. Grain imports were used to supply the inefficient and highly subsidized livestock sector. Currently, as Russia moves from a centrally planned economy toward a market oriented system, primary agricultural imports have switched from grains to meats. Russia is now the world's largest importer of poultry meat. Poultry made up 45% of Russia's meat imports by volume in 1996. The U.S. poultry industry has been a principal actor in this market. Russia is the second largest importer of pork and the third largest importer of beef in the world, the number three market and the number ten market for U.S. pork and beef exports, respectively (Foster and Liefert, 1997).

As economies develop and evolve, trade can contribute to overall efficiency and provide opportunities for consumers to enjoy more diverse products. The future of exports by U.S. agribusiness firms to Russia depends on at least three

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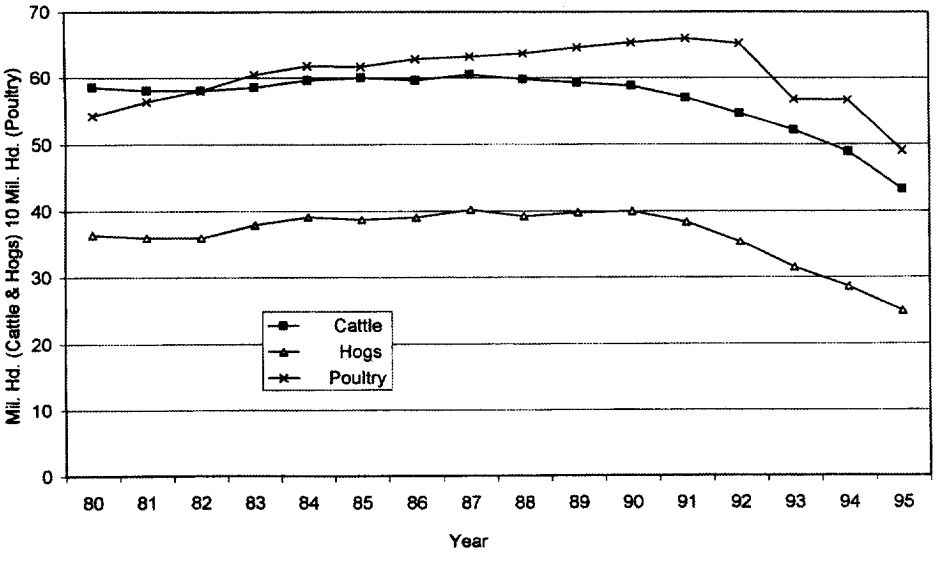


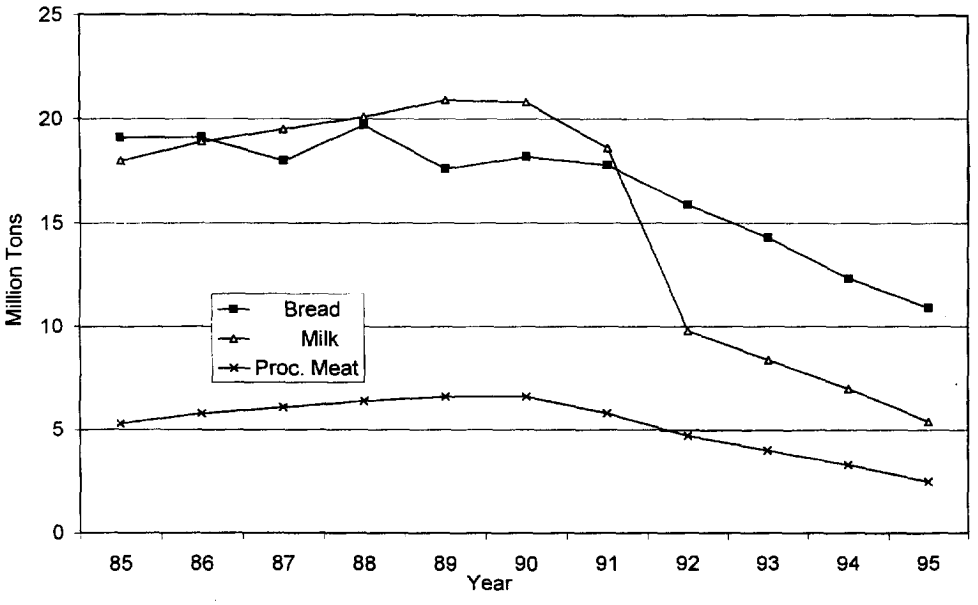
Source: USDA, website 1.

Figure 1. Livestock Inventories, Russian Federation, January 1, 1980–1995

factors: 1) stability of the fragile Russian economy; 2) trade barriers in the form of tariffs and quotas; and 3) the prospects of Russia's food system to efficiently provide consumers with the food products they demand. There has been interest in the Russian food market among U.S. agribusiness firms, particularly in exporting meat products. The future viability and stability of this market, and other transition economy markets, for U.S. agricultural commodities and products, however, remains in question. The purpose of this paper is to: (1) briefly review the economic conditions that exist in the Russian general economy and agriculture; and (2) summarize the vertical coordination systems and pricing mechanisms in the food industry, as the Russian economy has evolved from the former planned economy. This provides the foundation for understanding the transition that has occurred in the Russian food system, its future, and potential as a viable export market for U.S. agribusiness firms.

General Economy and Agriculture in Russia

Russia continues to experience formidable difficulties in moving from a centrally planned economy to a controlled market economy. Progress has been made in freeing most prices, cutting defense spending, eliminating the centralized distribution system, establishing private financial institutions, and decentralizing foreign trade. Progress is needed, however, in providing a solid foundation for the transition to a



Source: USDA, website 2.

Figure 2. Production of Selected Processed Foods, Russian Federation, 1985–1995

market economy. Financial stabilization is still in question. This was evident from the crisis during the summer of 1998, when the ruble was in a free fall and inflation rates again increased after being held in check during the preceding couple of years. Limited restructuring of industries has occurred because of a scarcity of investment funds and the failure by firm managers to make cost-cutting decisions. The legal framework necessary to fully support a market economy and to encourage foreign investment has been slow to develop. As a result, output has continued to fall, although recently at lower rates of decline. The decline in gross domestic product (GDP) has not been as severe in recent years. In 1992, the annual percent change in GDP was –22.3% as compared to about -6% in 1996 (USDA, May 1997).

These trends are also evident in agricultural production. Figure 1 depicts the decline in cattle, hog and poultry inventories. Declines are also evident for the production of processed foods (Figure 2). Thus, the transition to a market economy system has been difficult and it may be several years before Russia can take full advantage of its natural resources and its human assets.

As in the case of U.S. price support programs, the effects of government intervention are evident in the case of Russian agriculture. Consider the case of livestock production. Foster and Liefert report that the bulk of livestock production continues to come from former state and collective farms. These production units

hold 70% of cattle inventory, 65% of hogs, and 60% of poultry. These production units currently report losses, primarily due to production and cost inefficiencies. Until recently, large subsidies allowed these farms to cover the gap between costs and revenues. For example, it has been estimated that in 1992 per-unit subsidies equaled about two-thirds of the farmgate price received by producers for beef and poultry, and one-third the price for pork. By 1994, per-unit subsidies represented about one-third the producer prices for beef and poultry, and about 10% for pork.

As is evident from the above discussion, Russia's livestock sector was one of the first and hardest hit with the introduction of market reforms. Due to the inefficient conversion of feed grain to meat in the Russian livestock industry, trade has shifted from importing feed grains to importing meat. Russia, as previously mentioned, has become the world's largest importer of poultry meat. The domestic industry cannot compete with the price of imported poultry. Moreover, imports of poultry have increased because of a fall in real income, which has caused consumers to seek an inexpensive source of meat protein. All of this has been a source of concern in Russia and may result in increased tariffs and quotas to protect the domestic livestock industry. Such action, however, would affect consumers in the largest cities of Russia and could have political repercussions.

It would be inappropriate to place the blame for the current conditions in Russian agriculture on the transition to a market economy system. The problems did not spring up over night, but evolved over a long period of time. Nikonov has identified reasons for the general problems facing Russian agriculture:

- Long-standing domination of the command-administrative system of anagement by excessive centralization;
- State ownership of whole production, with unified forms of property nd management;
- Irrational production structure and investment policies, with producing and processing industries lagging far behind;
- Immunity of the economy to scientific and technical progress; and
- Erosion of the rural way of life.

Gaisford, Hobbs and Kerr point out it has been difficult for the Russian food system to escape the inherently bilateral monopoly structure that existed under the command system. Prices are manipulated in this setting by both suppliers and buyers and quantities are reduced causing market inefficiencies. These authors call for the development of the legal apparatus needed to enforce contracts and allow firms to commit to efficient levels of exchange and the development of business communications infrastructure to reduce transaction costs in order to enhance competition via the broadening of markets.

We turn now to a discussion of a historical account of the vertical coordination and the pricing mechanisms which have existed and exist in the Russian food mar-

ket to enhance the understanding of the transition that has occurred and the implications of these changes. This discussion is the basis for understanding the current state of the Russian food system and the transition which has occurred, along with the viability of this market for U.S. agricultural products.

VERTICAL COORDINATION AND PRICING IN THE RUSSIAN FOOD MARKET

Vertical coordination and the pricing mechanisms in Russian agriculture changed considerably during the 1990s. The livestock and meat sector, where appropriate, is used as an example in the historical account that follows.

Before 1990: Former System

Most of the livestock (75-80%), prior to 1990, was sold through the state system using state fixed prices which were called "state procurement prices." These prices were set by a special state committee (The State Pricing Committee). Changes in these prices were very rare, typically changing less than once in a decade. The last change before the 1990s was in 1983, after state wholesale-industrial prices had changed in 1982. These fixed prices, together with planned production quotas, were used and set for each collective or state farm each year. State procurement prices, of course, were different for each type of livestock—cattle, hogs, chickens, etc. Prices also were different for a few quality categories within each type of livestock. Moreover, prices were different in each of the regions of the country.

Two types of price premiums also were established for these state procurement prices: 1) price would be increased by 50% for additional quantity (initially, that which was produced beyond the planned quantity and later, that which was produced beyond the average production during the previous five years); and 2) price would be increased (up to 120%) for those farms that had the highest costs. The government tried to use premiums as incentives to increase production. These premiums were ineffective, however, because if farms produced more than the planned quantity in one year, the production quota would be increased the next year. This created increased production risks to the farm. Thus, managers preferred not to realize full production potential for farms. Nor was there an incentive to reduce costs, because by doing so, this would reduce the actual procurement prices (including the premium).

The planning system was used not only for farms but also for each state enterprise including processing, wholesale, and retail. The plans throughout the production and distribution system were connected or coordinated with each other. Thus, there was a type of tight vertical coordination in the food sector. In addition to an overall federal planning committee, a special state committee, the Agri-Industrial Committee, was responsible for this planning and coordination, along with controlling the performance of enterprises in the food system. This committee had

departments in every region and city. All prices within the state system, however, were set by the State Pricing Committee.

State retail meat prices had not changed since the 1960s, and they were much lower than the state procurement prices for the livestock, e.g., about two times less for beef on an equivalent basis. Wholesale prices (the prices received by processors) for processed meat and meat products were derived from retail prices by extracting fixed retail and wholesale margins. Wholesale prices for processed meat products also were set by the State Pricing Committee.

Processors did not use the state procurement prices for raw agricultural products to calculate their costs for inputs. Instead they used prices derived from the wholesale prices of processed meat by extracting processing costs. The difference in these accounting prices for processing inputs and the state procurement prices for raw products was covered by state subsidies. The entire food price system was built on the basis of cost, which prompted cost increases and inefficiencies. Thus, the amount of the subsidies grew larger and became burdensome for the government.

Besides the state procurement system, there were two other distribution channels for agricultural commodities. These channels were for the commodities produced by individual families. Individual families were allowed to have their own subsistence type production. An example of this might be a family having two or three cows, ten chickens, and/or four or five sheep. They could consume the produce from these animals themselves or sell it. These products could be sold through either the so called "consumer cooperation" (literal translation) or a local city market. About 12 to 15% of agricultural products were sold through the consumer cooperation and about three to five percent through local markets (Borhunov, 1996, p. 41). The consumer cooperation, although not an official state organization, was controlled by state organizations, and the prices of the products were closely aligned to the state procurement prices. The consumer cooperation had its own plants to process products, as well as retail stores. Retail prices in this system were about two times higher than state retail prices.

To deliver meat products to a local city market, an individual producer typically would slaughter the animal and sell primarily cut meat and less often home processed meat products. The prices were about the same as prices through the consumer cooperation or sometimes slightly higher. Although most prices in the local markets or in the consumer cooperation stores were about two times higher than prices in state stores, consumers often would purchase these more expensive products because it was relatively easy to buy state meat products only in the major cities of Russia, e.g., Moscow and St. Petersburg. Products in state stores in other cities and towns often were not available during the 1980s. Moreover, the quality of the meat products in state stores, even in Moscow and St. Petersburg, was not always very good.

1990–1991: Beginning of Transition

This was the period of the so called "mixed price mechanism" for food products. A specified amount of production for each farm (collective or state) was set to be delivered as "a food tax" and as "a state order." The procurement prices (still set by the government) for the latter were 10% higher than those for the former. The remainder of the farm production (beyond the food tax and the state order) could be sold to anyone using what was referred to as "agreement prices." The purpose of this pricing mechanism was to encourage farms to produce more to abate food deficits.

The agreement prices, of course, were much higher than state prices. Processors who paid agreement prices for raw agricultural products would evaluate their costs using actual input prices. The wholesale and retail prices for the associated processed meat products also were called agreement prices and were higher than state prices. These products were sold in the state stores, but labeled as agreement price products.

Such a mechanism was adopted not only for the food sector but also for many other industries as well. As a result, prices for many inputs used in production agriculture increased, thereby increasing the costs of agricultural products. The state procurement payments no longer covered costs of production. This forced farm managers to convince the State Agricultural Committee that they could no longer meet the set production and delivery schedules, resulting in less products sold through the state system. Many farms (and other enterprises) desired to break from the former system which tied them rigidly to each other by state production and delivery plans and fixed state prices. Enterprises which managed to reduce the volume of output sold through the state food coordination channel benefited from the higher agreement prices, as compared to the state prices. Products sold under agreement prices often would be processed and retailed through the same channels as products sold under state procurement prices. This marked the emergence of another food coordination system, one which was not state planned but one which was based on contracts (agreements).

State procurement of livestock, as a result of the changes which occurred in 1991, decreased 18%, while meat production decreased by about eight percent (Economics and Life, 1992, p. 5). The shortage in food products, especially meats, in state stores became such a concern that the government introduced rationing in 1991. This was in the form of special consumer cards which permitted consumers to purchase only a certain amount of major food items in state stores at state prices. By the end of the year, it was difficult to find products to buy with these cards. Retail prices in local city markets and agreement prices increased sharply, up to 40% a month by the end of 1991.

1992-Present: Food System Evolution

Prices were set free and decoupled from the state pricing mechanisms on January 1, 1992. Price discovery became largely dependent on agreements between

buyers and sellers. The government in May 1992 reintroduced agricultural subsidies for livestock, eggs and milk, after receiving pressure from agricultural interests. These subsidies again were differentiated by regions across the country. Any agricultural producer (state, collective, or private) could receive these subsidies if products were sold within the system of federal and regional reserves (through state ordering), which usually included the same ties and linkages as the former planned system. These subsidies continued for later periods and covered other products as well. A different mechanism was used for grain, sugar beets and oil seeds. These products were procured for federal and state needs by government agents who contracted from producers using prices set by the state (recommended prices). The government tried to make these prices attractive to producers by increasing them according to the rate of inflation. The level of state procurement prices in 1994 were allowed to be set after bargaining between the local Department of Agriculture and representatives of regional producers.

Subsidies in 1995 and later were continued but became more focused. The federal budget for 1998, for example, included expenses to partially compensate agricultural producers for fertilizer procurement costs, crop insurance costs, and feed costs to specialized pork and poultry producers. The primary focus of government support of agriculture after 1995 shifted to a system of target (guaranteed) prices and subsidies similar to those in Europe and the U.S. This system, along with favorable tax, credit, and leasing programs for agricultural producers forms the basis for more recent agriculture and food policy. Federal guaranteed procurement prices are set for products intended for federal reserves. Regional governments also set guaranteed prices for agricultural products for regional reserves. The mechanism of federally guaranteed prices has not worked well because of insufficient federal funds to support it. Producers often have not received timely federal payments under this program. More regional government funds typically have been available to support prices (particularly for wheat). As a result, the regional guaranteed prices for wheat in 1995 were often 50% higher than the federal price floor. Guaranteed prices for livestock and milk products were not effective even in the regions because of insufficient funds. Actual transaction prices in May 1995 for milk were lower than the guaranteed prices in 47 regions, and actual prices for eggs were lower in 39 regions (Borhunov, 1996, p. 45).

The intent under the guaranteed price program was for the (federal) state organization to purchase agricultural products in regions where prices were low and sell those products in regions in which prices were high. The Federal Agency of Food Market Regulation was established to carry out this activity. Although this Agency does not have funds to work effectively at the federal level, some of its regional counterparts are quite active, for example, the Volgagrad region which is the Volgagrad Agri-Industrial Financial Corporation (VAIFC).

The VAIFC was founded in 1994 as a stock company with free access, i.e., anyone could buy stock shares. Twenty-five companies and firms were among the first

to establish this Corporation including state (federal) organizations (50.1% of it state), banks and investment companies, agribusiness firms, collective farms and processing enterprises in the Volgagrad oblast (region). The primary responsibility of the VAIFC is to procure agricultural and food products for the federal and regional reserves. This Corporation provides credit to producers, plans orders with regional processors, and signs forward contracts with agricultural producers and processors. Moreover, it sells food products to other regions in Russia and abroad. Partners and clients of the VAIFC are among the largest in this and neighboring regions.

The VAIFC uses a special clearing system (referred to as "Ring") to coordinate the activities of firms in the production, processing and distribution channel. Within this system, a producer first receives commodity credit from VAIFC (inputs for productions) at a low interest rate. Producers repay this credit with products. VAIFC then arranges for processing and sale of the products. Payments to each firm within the system are then calculated and distributed through the clearing house. This system reduces costs of final products by at least 25%, as compared to the disintegrated scheme of producing, processing and marketing food products.

VAIFC also was responsible for helping establish the first organized wholesale food market. This wholesale food market was started in mid-1995 as a stock company. There were more than 50 wholesale firms in this market by mid-1996, with 200-250 metric tons of food products moving through the market daily (Economics of Agricultural and Processing Enterprises, 1997, p. 44).

Such markets began to function in eight regions during 1996, and by 1997 there were 20 established, and these types of markets were in the process of being created in 30 more regions. It is expensive to create these wholesale markets. Costs are typically covered by membership fees, rent payments for the facilities and offices, and payments for various services.

The intent was to develop these wholesale markets for smaller agricultural producers, processors and wholesale food companies. Currently, only a very small proportion of Russian food production is sold through these wholesale markets (Agricultural Economics in Russia, 1998, p. 21). The majority of product in these markets is from imports. The buyers include small wholesale companies, restaurants, fast food cafeterias, state food service, state organizations and small private retailers. The majority of Russian food production now reaches consumers through direct marketing channels or via vertically integrated firms.

Efforts to create a system of wholesale markets are another attempt to develop organized markets for agricultural food products. The first attempt was in 1992 through 1994 via a movement to include agricultural commodities on commodity exchanges. Transactions in Russian agricultural commodities, however, on commodity exchanges are currently almost nonexistent. This failure can be attributed to a poorly developed and expensive transportation system and the lack of storage

Table 1. Percent (Sales) of Grain, Livestock and Milk Distributed Through Alternative Channels in Russia, 1995

Channel	Commodity-Percent		
	Grain	Livestock	Milk
Directly to processors (including state orders)	28	46	85
Consumer cooperation enterprises and directly to retail stores	2	17	5
Wholesale markets, commodity exchanges and private middleman firms	6	3	0
Local city markets	10	9	4
Producer's own retail stores and restaurants	11	17	3
Barter	12	4	1
Salaries for employees	17	6	1
Other producers	14	3	0

Source: State Statistical Committee, p. 46.

facilities which creates large basis risk. Another constraint was that firms were afraid to deal with an unfamiliar partner. There were many cases of the product not being delivered after payment had been made or no payment after the product had been delivered. This also points to problems with the legal system in Russia and large transaction costs in the food sector.

Data presented in Table 1 illustrate how sales of agricultural products were distributed among alternative channels in 1995. About 21% of the grain, 26% of livestock, and seven percent of the milk was sold through vertically integrated channels (local city markets and through producers' own retail stores and restaurants). Only a small percentage of product moved through the open or spot market (wholesale market discussed earlier)—six percent of the grain, and three percent of the livestock. Contracts (perhaps not always formal contracts, but long-term direct relationships) accounted for about 30% of the grain, 58% of the livestock and 90% of milk sales (directly to processors and consumer cooperation enterprises).

The quantities of selected agricultural products sold through state ordering (for federal and regional reserves) in 1995 included: grain—23%; sunflowers—10%; sugar beets—0.1%; vegetables—56%; livestock—44%; and milk—69%. These products go to processors through the Federal Agency of Food Market Regulation and its regional subsidiaries. Although the prices of products delivered for state orders might be higher than average, producers have been reluctant to sign contracts with the Agency because of delays in payments. Twenty-five percent of livestock, grain, and vegetable producers and 12% of the milk producers did not agree to produce for state orders at all (State Statistical Committee, 1996, p. 46).

Recent Tendencies Toward Consolidation in the Russian Food System

Producers in 1991, as previously discussed, were motivated to break relationships with processors with whom they were tied by state orders, as a result of less regu-

lated agreement prices. The absence of a developed market infrastructure, including high transportation costs, however, forced producers to do business with former partners in the regions. Thus, many local markets evolved but were separated from each other. Relatively large processors were able to exert market power in dealing with producers. Producers in this setting realized a reduced share of the retail value. Producers sought an increased share of retail value through building their own processing facilities and even marketing products at the retail level. The latter also allowed them to receive a more stable source of cash payments. This was a useful means to alleviate the non-payment problem, which has been quite severe since the reform was initiated. This is a classic example of vertical integration which may be referred to as vertical expansion.

About 25% of the agricultural producers had their own processing facilities by 1995. About two-thirds of these, however, were greatly below capacity. Producers in 1995 sold the following products in processed form (State Statistical Committee, 1996, pp. 46–50): grain—7%; sunflowers—11%; sugar beets—54%; livestock—33%; and milk—6%. Of these amounts, the following were processed under tolling contracts (explained below): grain—4%; sunflowers—6%; sugar beets—53%; livestock—1%; and milk—2%. About two-thirds of these enterprises, however, used less than 50% of the processing capacity because of a shortage of products to process.

One approach used by producers to avoid investing in processing facilities is to contract with a processor to process the raw product. Payments to processors take the form of a share of the processed product (tolling contract) and the remainder of the final product is sold by the producer. This type of contract is particularly popular in the Russian sugar industry (Yakunina, 1998) p. 20).

Vertical expansion by producers resulted in a decrease in the utilization of the capacity of plants owned by processors. In 1997, only 30 to 40% of the processing capacity was used by these firms (Markin, 1997, p. 25). As a result, inefficiencies have been prevalent in the processing sector of the food industry, in both specialized plants and in processing units built by producers.

In an attempt to reduce these inefficiencies the government initiated a program in 1994 whereby processors were required to provide newly issued or redistributed stock shares to producers. Producers through this program were given partial ownership of processing facilities and monetarily rewarded through dividends. Similarly, processors were encouraged to purchase shares of producer stock companies (former state and collective farms). By 1997 producers were the major share holders (more than 50%) in 17% of the processing firms (Sherbak, 1997, p. 6). This is a form of quasi integration. If producers could not buy shares from processors, state organizations would hold shares for producers. Producer representatives and state organizations (if the latter were asked by producers to represent their interests) became members of the Council of Directors of the respective processing firm. This scheme was unsuccessful in reducing unit costs, increasing profits, and

curtailing vertical expansion activities, because profits in the food chain were not large enough to create an incentive to improve the performance on the part of each participant.

There also has been a tendency for producers and processors to form tighter relationships through so called "consumer cooperatives." These cooperatives include producers within a region and a primary processor who purchases the main product. The processor (which is usually a stockholding company) becomes an "associate member" of the cooperative. This arrangement between producers and a processor may be referred to as a vertical merger. In the Russian Federation in 1997 there were more than 600 agricultural "consumer cooperatives" (Agricultural Economics of Russia, 1997, p. 21).

Recently, structures of a corporation type have begun to evolve in many regions across the country. They are made up of agricultural producers, processing firms, input firms, trading firms and financial institutions. Often such structures also include state organizations. Structures of this type are called corporations or associations and might be organized for one or multiple products. Management is similar to that of a stockholding company. Sometimes such structures are developed in a hierarchical manner with relatively smaller corporations being combined into bigger corporations. The realization of such a hierarchical development is under way in the Kurskaya oblast and was initiated by the local government (Rutskoy, 1998, p. 8–12). The federal and local governments of Russia have initiated and encouraged these types of organizational structures as a way to improve vertical coordination in the Russian food market.

Prices (transfer) within the integrated structures are determined by the Council of Directors based on costs incurred at each stage in the food chain (production, processing, distribution, and retailing). After the final product of the integrated structure is sold any additional is divided according to some cost criterion. Sometimes payments take the form of a share of the final product of the integrated structure. In this case, each participant then sells its share of the final product which is divided by some cost criterion. Thus, the system has evolved to a type of cost dependent pricing similar to that in the former planned system.

RUSSIAN FOOD SYSTEM: WHAT TO EXPECT—IMPLICATIONS

Transition in the Russian food system has resulted in the evolution of different forms of vertical coordination. During the command economy period, the activities in the stages in the food vertical chain were coordinated administratively similar to an integrated firm. As the Russian economy has started to move toward a more market oriented system, coordination in the food chain has evolved from mostly vertical expansion through quasi integration to mostly vertical mergers. Although open organized markets have been established in many regions, they have not become a significant marketing alternative for Russian food products.

Theory tells us that transactions move from an open market exchange toward long-term comprehensive contractual arrangements and vertical integration, as costs of using an open market and pricing mechanisms become prohibitively high. Increased transaction costs result in the Russian food system from uncertainty and asset specificity.

There is uncertainty in any economic system, but in the transition economy of Russia risks associated with uncertainty are particularly high. These risks are the result of inadequate legal, market information and transportation systems and an undeveloped market infrastructure. Risk also evolves from a fragile economic climate, as was apparent during the 1998 economic crisis. This encourages many local markets that are poorly connected with each other, thus preventing the formation of more geographically expanded markets. This leads to higher asset specificity caused by location. Asset specificity in the food market is an important consideration in the U.S. as well, due to recent tendencies toward product differentiation at retail, processing and producer levels. This has caused the mass food market to be divided into many niche markets. A large portion of food products consumed in Russia is imported, in part from the U.S. This will result in consumer demands for food products in Russia moving toward differentiated food products much faster than, e.g., in the U.S. If the Russian food producers and processors desire to stay competitive they will need to increase the efficiency of production and be responsive to consumer preferences. Therefore, investments to provide specific products will be necessary. This should result in a higher asset specificity in the Russian food industry in the future. This process is likely unavoidable, if technologies are available to allow for such a transition.

The future of vertical coordination in the Russian food market depends on how these general tendencies continue. If adequate attention is given to developing market infrastructures and the legal system in Russia, risks associated with uncertainties could be reduced. In this case, prices may better serve as the coordinating mechanism for those products which are less differentiated. In such a situation, there would be less need for comprehensive contracts and vertical integration. Tightly vertically coordinated systems would then evolve only when they are necessary to better serve consumer needs in more differentiated products.

Currently, however, there seems to be efforts by the government to encourage vertical integration. There has been some progress made toward developing open markets, as previously discussed. Nevertheless, the cost of using such markets is relatively high, which prevents Russian producers from using these markets.

There remains a tendency toward vertical coordination in the Russian food system in part due to market imperfections. Until such time that stable and reliable institutions capable of enforcing the rules of business relationships and transactions are formed, the general business climate for firms in the Russian food system will be difficult. Public investment in the Russian food system also will play a critical role in its development. Investments in rural infrastructure, inspection and

information services, agricultural research, education and technology transfer are necessary to reduce costs, increase economic efficiency, and revitalize the Russian food system. If this does not occur, the food system in Russian will not be effective in meeting the increasingly diverse demands of Russian consumers.

It is difficult to predict how long the Russian economy will be in a state of recovery. The current trend in agricultural export needs by Russia has been away from grains to livestock products. As the Russian economic system evolves, Russian agriculture likely will be able to produce more diverse food products at low costs. This, if it occurs, will result in a change in the mix of products provided by exporters, changing from commodity to value-added products.

We conclude with a general comment related to approaches for enhancing U.S. agricultural exports. Recent interest has been directed toward identifying and providing value-added type products and the development of technologies to provide such products in foreign markets. Such an approach has the possibility to increase the demands for raw U.S. agricultural products. There is, however, a more basic requirement that must be taken into account—that of the unique characteristics of the exchange system and the structural nature of agriculture in the potential importing country. If the structure of the foreign agricultural system is set up to respond quickly and efficiently to changing demands of consumers, then the potential to provide products to those countries by U.S. agribusinesses may be reduced. On the other hand, if the agricultural system is such that the signals from consumers are not transmitted in an effective manner, and/or if the production system cannot respond effectively and efficiently, potential might exist for U.S. firms to enter these markets, given the ability to pay by consumers, absence of trade barriers, and reasonably stable or predictable political and economic climates.

NOTES

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