

Role of Cooperative Development in Resolving Economic Issues of Agricultural Industry in Azerbaijan

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Abstract — The article analyzes the theoretical issues of cooperation in agriculture and the creation of cooperative movement as a form of its organization. Inelastic demand and elastic supply are considered one of the reasons for the "productivity paradox" in this field of activities, since they are considered as systemic problems of agriculture. On the other hand, the type of agricultural market structure further deepens this paradox. Global practice shows that cooperative movement plays an important role in solving the existing problem. In the recent period, in developed countries, two directions of the organization of cooperative undertakings have been established: production and service cooperatives. As a result of the study, the problems of equitable income distribution, which are considered one of the biggest problems of production cooperatives, were highlighted and analyzed in detail. In addition, the benefits of service cooperatives also found their explanation in the study. Based on the study, it was concluded that the cooperative movement can play a significant role in reducing risks in the agricultural production process and resolving the productivity paradox.

Keywords — demand inelasticity, supply elasticity, perfect and imperfect competition, production and service cooperatives, productivity paradox, income distribution, the effect of external economies of scale.

I. INTRODUCTION

It is known that agricultural production is an area of high risk and a significant number of researches in the scientific literature have been devoted to the study of its causes. As a rule, the high level of risks in the agricultural sector and, as a consequence, the minimum level of income is explained by the specific features inherent in this field of activities. Taken as a whole, these features are explained by biological and climatic conditions, seasonality, high capital intensity and other factors existing in agriculture. In our opinion, an analysis of the role of other important factors in the production of agricultural products, along with these reasons, can give us the opportunity for a theoretical substantiation of the directions of cooperation development in this field of activities, its organizational form and cooperative undertakings, which are considered its main institution.

II. THE REASONS FOR THE "PRODUCTIVITY PARADOX" IN AGRICULTURE

First of all, it should be noted that the scientific literature adopted an approach according to which the demand for

agricultural products is inelastic in terms of price and income. [1, 2] It should be considered, that inelasticity in terms of price and income means that demand weakly affects the change in the price of agricultural products. As a result, productivity growth in the agricultural sector is usually accompanied by a fall in market prices. This is because the total demand remains unchanged. If food prices fall by half, people will not eat six times a day instead of three times as usual. For this reason, the capacity of the agricultural market, in other words, the ability to absorb products is inflexible and limited. On the other hand, the boundary of aggregate demand for agricultural products is determined by the number of people living in the country and, figuratively speaking, the ability of their stomachs to digest food. Even an increase in income has little effect on the food demand. Calculations show that a 10 % rise in income increases food demand by only 2 %. Average US households spend only 9.7 % of their budget on food. [3] In the EU countries, the corresponding average is slightly higher – 12.1 %. (in Germany – 10.8 %, in France – 13.1 %, in the Netherlands – 11.4 %) [4] Based on these figures, we can say with great probability that market prices for agricultural products should fall by 40–50 % in order to increase the total demand for it by 10 %. This means, that to achieve a certain increase in demand for agricultural products, a significant reduction in prices is required.

On the other hand, the offer of agricultural products has high price elasticity. This means that the increase in prices for any product in the current period significantly stimulates the supply of these products. Manufacturers limit the production of products with low prices, focusing on products that are sold at a high price in the current season. As a result of this, the production of such products in the next season increases, which accordingly leads to lower prices. Thus, inelastic demand for agricultural products and high elasticity of supply create a vicious circle in agricultural production. These vicious circle forces agricultural producers who want to earn high incomes to increase the production of one product and at the same time reduce the production of another. As a result, a paradox arises in the production of agricultural products – "Productivity Paradox".

The essence of this paradox is that agricultural producers who have achieved high productivity receive losses instead of profit and areas with low productivity generate high income due to higher prices. Based on the above, one of the specific features of agriculture is that supply rather than demand

affects the market price, and its change is directly related to the change in the supply volume. For this reason, agriculture has achieved high development in those countries, 60–75 % of whose products are exported to foreign markets. For example, only 27.6 % of products manufactured in the Netherlands are sold domestically, and 72.4 % is exported. [5] If we turn to the volume of exports by types of products in the USA, it becomes obvious that the share of exports was 76 % of cotton production, 79 % of walnuts, 50 % of soybeans (soybeans), 46 % of grain and 55 % of rice. [6] For comparison, according to estimates, in 2018 about 16.5 % of agricultural products were exported from Azerbaijan. [7]

III. TYPE OF AGRICULTURAL PRODUCTION MARKET STRUCTURE

Another reason for the emergence of a high level of risk in agricultural production and the productivity paradox is related to the specific state of the market structure existing there. Based on global practice, currently there are two types of market structure: perfect and imperfect. We would like to note that their features were thoroughly analyzed in the literature. In a market with a perfect competition structure, there are no restrictions on the number of producers, so they can not influence the price of the product they produce, and the price is dictated by the market. The presence on the imperfect market of a limited number of manufacturers creates conditions that allow them to dictate prices. Similar markets are also called monopolized markets. Unlike other sectors of the economy in agriculture, the number of producers' amounts to thousands, and each producer is forced to work in conditions of pure competition. This means high intensity of competition and dictation of prices by the market. They sell their products "dictated" by the market price. However, they are forced to acquire the resources necessary for the production of products in imperfect markets, where the price is dictated by the manufacturer. For example, today sugar beets are produced by hundreds of farms in different regions of Azerbaijan. But there is only one company involved in its processing and production of granulated sugar. At the same time, agricultural producers, when acquiring machinery, a seed, fertilizers, means for combating diseases and pests, as well as other products necessary for production, are again faced with a market in which several sellers are present, in other words, with an imperfect type of market. This situation leads to a violation of price parity between agricultural products and industrial products. As a result, the agricultural productivity paradox reduces incomes, but prices of manufactured goods remain unchanged.

We can say that a similar general market structure exists in almost all countries of the world. For example, in the USA, tomatoes are grown on thousands of farms. However, only three companies are involved in the production of tomato ketchup. [8] From the foregoing, we can conclude that agricultural products are sold in a competitive market, but products made from these products are sold in an imperfect market.

Depending on the properties of the product, its production is also carried out in different farms. For example, thousands of farms are engaged in the production of grain, barley,

sunflower, corn and vegetables. And the production of poultry meat and eggs in the republic is carried out at large enterprises in a factory way.

Based on the foregoing, we can come to the general conclusion that, in addition to non-economic factors, risks are even more aggravated due to the following factors, including inelastic demand for agricultural products, production of these goods in conditions of fierce competition, violation of price parity between their prices and industrial prices goods. As such, the end result of a high level of risk in agriculture has a direct impact on the incomes of producers.

IV. NEED TO CREATE AGRICULTURAL COOPERATIVE MOVEMENT

The main goal of the agrarian policy pursued in each state, including our republic, is to direct itself towards reducing risks and stabilizing incomes. However, any agricultural policy bears fruit only if the institutional structure of agricultural producers meets up-to-date requirements.

According to the statistics of 2016, 892 thousand landowners were registered in the agriculture sector of economy in Azerbaijan. However, in accordance with the distribution of land plots, the share of 71 % of landowners consists of land plots with a total area of up to 3 hectares. [9] As can be seen from these figures, small landowners definitely dominate the total share of landowners. It is not surprising that in the same year, 92 % of agricultural production fell to small farms (family farms, households and individual enterprises), and 8 % to the share of agricultural enterprises, which are relatively larger landowners. [10] Such a structure of land ownership is one of the main obstacles to achieving sustainable agricultural development. The experience of countries with developed agriculture shows that the aforementioned features existing in agriculture prompted small farms, uniting in large numbers to transform into large farms. For example, if in 1935 there were 6.8 million in the USA, and in 1960 – 4 million farms, [11] now their number has decreased to 2.05 million. [12]

The advantage of large farms is that it reduces the intensity of competition in agriculture and creates the conditions for some price stabilization. Cooperatives, which are an institutional form of economic activity, are one of the ways to create large farms that have been tested and proven effective around the world. Cooperation and cooperative enterprises, which are its organizational form, directly cover the activities of small and medium owners. Along with reducing the risks of small farms, its main goal is to take a stable and sustainable position in domestic and foreign markets by ensuring competitiveness in relation to large farms.

In the current period, world practice indicates that two main types of cooperatives have formed in agriculture: 1. production cooperatives, 2. cooperatives serving producers. [13] A theoretical analysis of each of them individually gives us a basis for a conclusion about what type of development should be preferred in our republic.

V. DISADVANTAGES OF PRODUCTION COOPERATIVES

Production cooperatives are formed as a result of the merger of property of small farms, primarily their land allotments, and the profit received is distributed divided in accordance with the charter of the cooperative. Members of production cooperatives are personally involved in the production process, completely losing their legal and economic independence. However, since its inception, production cooperatives have been faced with insoluble problems. The main reason for this is a violation of the principle of justice in the distribution of income and the establishment of democracy in a cooperative. Along with this, as the number of members joining the cooperative increases, the violation of the principle of justice becomes more widespread and has a direct impact on the way they are handled. This situation can be explained by the following reasons.

Firstly, if the distribution of income in a cooperative with a large number of members is carried out on the principle of equality, then the problem of inefficient use of resources will arise. The reason for this is that the principle of equal income distribution forces each member of the cooperative to shift to others the difficulties associated with the production of products. This conclusion can also be explained as follows – the possession of an equal right to the distribution of income along with the expenditure of a comparatively lesser labor than other members. Obviously, each member of the cooperative will try to act in a similar way. As a result, the efficiency of resource utilization will decrease and ultimately the volume of production will also decrease.

Secondly, if the principle of distribution is established in accordance with the expenditure of labor, then in this case the resources will be used in larger than necessary quantities, briefly expressed in a “barbaric way”. Among the members of the cooperative there will be such an opinion that a higher volume of income relative to other members will be for the member who uses his assets to a greater extent (land allotment, machinery, technology, etc.). This in turn can lead to rapid wear and tear of the means of production.

Thirdly, with the increase in the number of landowners in production cooperatives, it gradually becomes impossible to realize the division of property. The reason is that the quantity and quality of property of individual landowners may vary. In addition, it is necessary to take into account the different social status of small landowners. The implementation of the distribution of income on property in a large enterprise operating on the basis of collective ownership creates big problems.

Fourthly, with an increase in the number of members, a split in democracy in the management of the cooperative may arise, and decisions on the use of resources made by voting can be contradictory. As the number of members of cooperatives operating on the basis of collective ownership increases, the number of groupings in its membership will also increase. Each of the groupings created as part of the association will try to use the resources, not in the interests of the collective, but for its own purposes through voting.

As we know, the word cooperation literally means collaboration. And cooperation, in turn, can take place only if the principle of justice dominates. Thus, an increase in the number of members of a cooperative determines its instability and the emergence of differing interests. The spread of this process within the cooperative becomes the main argument for its ruin and collapse.

For the reasons given, the combination of the technological chain of production in one large industrial cooperative creates big problems. Issues such as the division of responsibility for income and loss become a direct cause of a clash of economic interests and shorten the life cycle of a production cooperative. According to official statistics, the number of agricultural undertakings established on a cooperative basis in Azerbaijan decreased from 250 in 2000 [14] to 45 in 2018. [15] We believe that the factors listed above served as the main reason for the decrease in the number of production cooperatives to such a significant extent.

For the same reasons, agricultural production cooperatives exist in a simple and small form. As a rule, in the case of combining 2-10 households, such households may be more efficient. In addition, production cooperatives often consist of small households that combine family kinships. As practical experience shows, production cooperatives have problems associated with the aforementioned distribution as their number grows and their scale expands. This opinion was also confirmed by the results of our survey conducted in the Mugan-1 production cooperative in the Sabirabad region. In the production cooperative Mugan-1, the unification of the lands of 8 family farms was carried out purely on the basis of family kinship. The total area of the cooperative’s land is 120 ha. 45 ha of them were created by combining shared ownership of land and 75 ha – as a result of leases from the municipality. In the distribution of income, a combination of the above principles is used. The income received from the leased land is distributed equally, and the income received from the collective ownership of land is distributed in proportion to the shared ownership of the land. If agricultural machinery is used, then the money spent on it is included in the production costs of the cooperative and paid to the owner of the machinery. In our opinion, in modern conditions, due to the above reasons, it is impossible to develop large-scale farms that work effectively through production cooperatives in Azerbaijan.

VI. BENEFITS OF SERVICE COOPERATIVES

Cooperatives of the second type (service providers) are created by manufacturers and are aimed on provision of services to meet the production needs of farmers who are members of the cooperative.

These services usually include: 1) providing small farms with equipment, 2) servicing the equipment used, 3) providing fuel and lubricants, 4) supplying mineral fertilizers and seeds, 5) information and marketing services, 6) related services with long-term storage of products; 7) export of products to domestic and foreign markets, etc. The members of cooperatives involved in the provision of services maintain their economic independence and income level, being directly

dependent on the level of income, remains entirely at the disposal of each manufacturer. The advantage of such cooperatives is to free farmers from solving of many problems associated with the production and exchange of products, so that they can direct all their efforts to the production of products. In economic terms, the main goal of service cooperatives is to provide services aimed at reducing the **transactional** (operational) costs of manufacturers. Members of service cooperatives are not competitors, but act as coworkers.

This means minimizing the intensity of competition between them which allows eliminating the productivity paradox and minimizing economic risks by producing subsequent products on the basis of a specific order. For example, in the Netherlands, cooperatives of this type carry out 75 % of the sales of flowers and mushrooms. The share of these cooperatives is 35 % of seed supplies in Denmark, 55 % in Ireland and 73 % in France. In the European Union as a whole, 50 % of equipment supplies to farmers are concentrated in cooperatives. [16] From the analysis of figures, it becomes apparent that the appearance of external economies of scale is the most important advantage of movement created in this form. The external economies of scale lead to lower average costs spent per unit of output within each enterprise as a result of cooperation between enterprises operating in one sector of the economy. Otherwise speaking, "External economies of scale arise when the cost per unit does not depend on any company, but on the volume of the industry." [17] This idea can be successfully applied to the activities of service cooperatives. An increase in the external economies of scale significantly reduces not only production costs, but also transaction costs. In the simplest terms, farmers joining a service cooperative can achieve lower average costs without changing production volumes as a result of the external economies of scale

Another advantage of the service cooperative is the absence of problems with the distribution of income and the establishment of democracy. In the management of service cooperatives, either the producers themselves participate, or external workers are involved in it. Their management expenses are financed by members of the cooperative at the expense of membership fees and redirecting a certain part of the income.

Based on our analysis, we can say that in the current period, the main attention in the agricultural policy aimed at stimulating the cooperative movement should be paid to the creation and development of service cooperatives. In addition, one of the main arguments confirming this idea is the place that service cooperatives occupy in the broad development of cooperative relations between farmers in world practice.

VII. CONCLUSION

- The productivity paradox is one of the problems created in this field of activity by the elastic supply in agricultural production and the inelastic demand for these products. This paradox has a negative effect on the stability of farmers' incomes.

- One of the reasons for the productivity paradox is the dominance of a perfect market in this field of activity. Dictation of prices by the market and the high intensity of competition limit the ability of farmers to influence the market.
- This circumstance is a characteristic feature that is inherent in the agriculture of Azerbaijan. An analysis of land ownership in Azerbaijan shows that smallholders are certainly dominant. An important role in increasing the competitiveness of farmers and expanding sales markets can be played by the strengthening of cooperative ties.
- In world practice, there are two main types of cooperatives. These are production and service cooperatives. An analysis of their mechanism of action shows that the development of production cooperatives is hindered by their inherent violation of the principle of justice in the distribution of income and the establishment of democracy. For this reason, the number of production cooperatives in Azerbaijan has significantly decreased. It is believed that focusing on service cooperatives and stimulating their development can play a decisive role in eliminating the productivity paradox and increasing the competitiveness of agricultural producers not only in the domestic market, but also in foreign markets.

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