Changing Paradigm in
Economics & Management System

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PREFACE

The world around is a trinity of social, economic, ecological systems, the balance of which for humans has become the basis for the development and implementation of the concept of sustainable development. Accordingly, appropriate management turned out to be in demand, which is characterized by behavioral and technological innovations in economic development. Current trends of change associated with the processes of globalization, informatization, intellectualization of the economy and society have strengthened the role of information, digital and professional transformation tools, thus providing a management process at the micro and macro levels. Recently, scientists have not ignored the issue of modifying the economy and making proposals that contribute to innovations for the development of economic concepts.

The presented book is a scientific work, in which the authors posed the urgent task of innovative development of the economy and made proposals for its solution. A distinctive feature of this study is the availability of developments that contribute to the realization of the potential of the economic system, considering the latest methods, principles and procedures.

The authors have formulated a sufficient number of conclusions and ideas that are innovative in nature. Their position on innovation in economic development and the priority of ideas, knowledge, technologies, intelligence in conducting business and strengthening the business reputation of entrepreneurial structures has been convincingly proven. A number of authors' proposals are not limited only to the innovative aspect of the development of instruments of economic development, but are holistic in nature and relate to Inflation; Economic Growth; Economics of nature Management and Environmental Protection; Monetary Policy; Management; Human resource; Finance; Marketing; Information technology; Accounting and Taxation; Entrepreneurship; Sustainable Finance, HR, Marketing and other. In total, the results of scientific research have allowed to form a new concept of innovative development of the modern economy in all aspects of globalization, integration and technologicalization.

The material of the book is set forth clearly, contains interesting proposals and is characterized by a non-standard approach to solving the issue of developing the economic system and its components, for which theoretical and practical aspects

of innovation are involved. The results of the scientific research presented in the book will be of interest to everyone involved in the development of economic science, management practice, the relationship between formal and informal institutions. The book is equally useful for theorists and practitioners, leading and young scientists conducting research to achieve a common goal – the development of science, economic systems and society as a whole.

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The development of market relations in agriculture determines the structuring of the market. Demand and supply, which are the driving force of the market, ensure that every demand for goods and services finds its supply. In other words, it means that producers of goods are faced with the need to sell them, which they cannot carry out on their own. Finally, the search for one who can do it begins. As a result, the market is in demand. On the other hand, there are individuals who are good at selling. They, in turn, offer their services on the market and, accordingly, form an offer. At the moment when supply and demand meet, there is an agreement. When such agreements appear enough, a market situation is formed and then the market price of the product or service is determined.

The principles of this relationship remain unchanged. Although

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in different industries, in particular in agriculture and industry, there are specific features. Most of these features are limited to the formation of market prices both in the production of products and in services for its realization. That is, there is a redistribution of profits at every stage from production to final consumption. This means that at each link some part of the profit is left to the manufacturer, the processor, the intermediary and the seller.

In many cases, the cost of production of the manufacturer's products is not properly calculated. Many articles are not included in the calculations. In addition, very often, in particular on farms, the cost of goods and materials purchased on the market, which have a clear market value (mainly for industrial products) are included in the cost calculation. Many items, such as costs for improving the fertility of the land, remuneration of the farmer's family, etc., may not be included in the cost calculation. Therefore, even when pricing agricultural products, which should also occur under the formula "cost + margin" (which is the basis of future profit), the price can be formed in advance as a loss [1].

Many agricultural enterprises do not declare their profitable activity, they try to give the impression that the loss of agricultural production is an objective reality of Ukraine. This is the basis for receiving additional benefits and financial assistance from the state, which in the end creates obstacles to the formation of a stable market price for agricultural products that would ensure profitable agricultural production. Recently, there is no formation of "floor prices" below which it is impossible to fall. Added to this is a low level of economic knowledge in economics and marketing, which leads to the fact that the agricultural producer does not try to defend the price [1].

Consider further the chain of position of the intermediary or trader. This group of market agents aims to profit from the provision of their services. Therefore, when an element appears in the chain that does not clearly assert its position on the profit share, then that element receives another element of profit. The redistribution of profits occurs, starting from the intermediary and above, the producer in this case mostly only agrees with the situation. Accordingly, he is not an equal participant in the negotiations at this stage.

Similar processes have taken place all over the world. There are two ways to solve them. The first is political, the second is economic. Political is reduced to the state regulation of the agrarian sector through the administrative regulation of prices, subsidies from the

state budget, the provision of tax benefits and the establishment of customs tariffs. In this case, agricultural producers shift the function of asserting their profit rights to the shoulders of the government. Economic, when agricultural producers are actively involved in the formation of intermediary, processing structures and the like. In practice, this means that they buy fully (or partially) a share of the trader, the processor. In this case, the profits of the trader and the processor become the profits of their owners, that is, farmers through the farming cooperative. In this case, all stakeholders are involved in the profit-sharing negotiations. The question is, where do farmers get so much money when they do not have enough even for their own production. In world practice, this issue is solved with the help of farmer marketing cooperatives.

The laws of the market are such that the greater the share of a particular market entity, the greater its impact on market pricing. Therefore, when the cooperative reaches a higher organizational level, bringing together most farmers and agricultural producers, the situation changes completely. In this case, the cooperative dictates its prices, and all the last members of the chain are forced to adjust to these prices. That is, the situation on the market is changing dramatically - the participants of the marketing chain become dependent on the cooperative. As a result, cooperatives without any complications buy a stake or completely these enterprises.

One of the main reasons for the lack of profit for agricultural producers is their poor awareness of marketing, which does not give them a complete understanding of pricing processes in the market. The other is the lack of effective pricing centers in Ukraine, including agrarian exchanges. This does not mean that there are no such structures in Ukraine. The existing structures of the domestic market do not fulfill the functions for which they were created.

Consider several features of the pricing process and ways to increase the profitability of agricultural production. One of the factors of increasing the profitability of production is the use of marketing system and involvement of producers directly in pricing in the agricultural market. The question arises as to how a particular commodity producer can influence pricing if the price is shaped by the market itself. The market is a natural mechanism, the pricing of which occurs under the influence of a whole set of factors. No market entity is able to fully master the mechanism of their action, and therefore actively influence the pricing process. On the other hand, in practice, there are methods of regulating the market that

influence the pricing process. This regulation can be done through legislation, through the introduction of customs barriers, through licensing, quotas, protectionism, etc. Such functions are performed by the state.

The question arises as to how the agricultural producer can influence the pricing process. Taking into account the situation when the market entry of the producers takes place individually, each farm looks for distribution channels individually, then under such conditions the possibility of influence of the individual producer on the pricing process is minimal. In these circumstances, they cannot affect the pricing process. There are no effective pricing centers in Ukraine that would give a complete picture of objective information in agricultural markets. In advanced market economies, the pricing process is based on the formula "basis + percentage", where "basis" is the price formed in the exchange trades, and "percentage" is the percentage on which the price of the basis needs to be adjusted, taking into account the local conditions of the individual the producer, his economic capabilities, the transportation costs he incurs in the production process. Accordingly, the farmer communicates periodically via the Internet with exchanges informing about prices for agricultural products in different regions of the world. This price is the basis. Adding a percentage set for their area, farmers know the price of their produce [1].

In Ukraine, the lack of a basis, as well as the lack of knowledge of the pricing mechanisms in the market, leads to the fact that the agricultural producer does not know how much his products are really worth on the market and in most cases agrees with the price offered to him by the intermediary. This situation stimulates an increase in the number of intermediary structures, which, using the lack of access of agricultural companies. to the producer of information on prices on each chain of passage of goods to the end consumer, to themselves to itself that part of the profits which the producer himself could receive. Therefore, it is necessary to teach producers the basics of marketing, which will increase the profitability of their activities.

The fact that a producer enters the market by himself creates a situation where he cannot gain a significant share of the market. It is well known that the market and a firm or producer with a large share of the market can directly influence the pricing process. These processes are most characteristic of the industry. Let's analyze what is happening in the market. Energy is virtually 100% market control by one company. All other resources consumed by agriculture, such

as machinery, fuel, fertilizers, etc., come from agriculture companies that control most of the domestic and global markets. Hence the increasing disparity in prices for industrial products consumed by the agricultural sector and agricultural products [1, p. 4].

Solution to this problem has been found by agricultural producers in almost all developed countries. Their experience can be drawn to solve problems that have arisen in the domestic market. Service cooperatives can become a panacea in such a situation. It is the creation of marketing cooperatives that will solve the problem of increasing the profitability of producers by influencing the pricing process of the agricultural market. Marketing cooperative allows you to track processes and trends in the market. Qualified specialist will determine the base price (the "basis", which is determined abroad on exchanges). By determining the correction factor for a particular locality, it will receive a market price for the products grown by the producer. One of the goals of such a specialist will be to track the most effective marketing channels for agricultural products, as well as to search and purchase the necessary resources and services at reasonable prices for the producers.

When a large number of producers are combined, the cooperative can immediately claim a relevant market share by forming a large batch of products. The greater the cooperative's share in the product market, the greater the opportunity to defend the interests of the producer directly. At the same time, the dictates of prices from supply and processing companies are moving into the negotiation of prices for the purchase of products by agricultural processors and prices for the resources supplied by the companies. This process ensures that the commodity producer enters the pricing process, namely the formation of prices for agricultural products. The creation of such marketing cooperatives forms the prerequisites for equitable functioning in the market, defending the interests of each participant, and thus increasing the profitability of agricultural production.

The strategic direction of development of agro-industrial production for both the developed western countries and for Ukraine is the development of agricultural cooperatives, creation of effective cooperative associations on a private basis and with high direct interest of producers and enterprises, as well as state support of priority directions of management and use of productive , resource-saving and high-tech. In order to prove the validity of this statement, let's look at a model that explains why agricultural cooperatives are displacing vertically integrated enterprises.

The price in such a model is considered as a linear function of the aggregate supply (p = a-Q, where a is a positive value and a Q is the aggregate supply). The cost of each farmer (whether he is a member of a cooperative or not) is given by the formula:

$$c(q) = \frac{1}{2} q^2$$

The marginal cost is positive and rising. Suppose, for simplicity, that all farmers are the same. There are two businesses, and farmers sell their produce through one of them. Let's call the first of these enterprises a cooperative, and the second - an enterprise that maximizes profit. Let nc be the number of farmers who join the cooperative and let nf = n - nc be the number of farmers who supply their produce to the enterprise.

Each producer makes his own decisions about the volume of his own production. The cooperative itself does not make a profit, and its production costs for simplicity are taken to be zero. QC is a cooperative offer, a Qf = Q-QC is an enterprise profit maximizing offer. In this case, each self-managed commodity producer will be forced to solve the following problem:

$$\max_{q} [a - (Q^f + Q^C_{-1} + q] q - \frac{1}{2} q^2$$

where is the offer of the cooperative without this producer;

q is his own suggestion.

It is likely that its maximum value q will reach at

$$a - (Q^f + Q^C_{-1} + 2q) - q = 0$$

Then the offer of each farmer who is a member of the cooperative will be equal to:

$$q = \frac{a - Q^f}{(n_c + 1) + c}$$

and the cooperative offer as a whole —

$$Q^c = \frac{n_c\left(a - Q^f\right)}{(n_c + 1) + c}$$

The task facing a profit-maximizing enterprise (it is it who decides the production volume) is as follows:

$$\max_{Q^f} [a - (Q^c + Q^f)] \, Q^f - n_f \frac{1}{2} c\left(\frac{Q^f}{n_f}\right)^2$$

Its solution:

$$Q^f = \frac{a - Q^c}{2 + \dfrac{1}{n_f} c}$$

Further, the equilibrium output of the cooperative

$$Q^{c*} = a_c (n_f + c)K,$$

and accordingly the equilibrium output of the enterprise maximizing profit

$$Q^{f*} = a_f (1 + c)K,$$

where

$$K = \frac{1}{n_f n_c + n_c c + 2n_f + c + 2a_f + c^2}$$

Consequently, the output and, accordingly, the market share per farmer per cooperative will be higher provided that nf> 1. The profit of each producer will be equal,

$$\pi^{\tilde{n}} = (a - [a_f (1 + c)K + a_c (n_f + c)K] \times a(n_f + c)K - \frac{1}{2}c(a[n_f + c]K)^2$$

and the profit of each farmer who supplies his produce to a profit-maximizing enterprise, respectively:

$$\pi^f = (a - [\mathbf{n}_f(1+c)K + \mathbf{a}_c(n_f + c)K] \times (a[1+c]K) - \frac{1}{2}c(a[1+c]K)^2$$

Condition is fullfilled when

$$(2 + c)(n_f + c)^2 > (1+c)^2(c + 2n_f)$$

or

$$2n_f^2 + \mathbf{a}_f^2 > c + 2n_f$$

Therefore, it is likely that for all nf> 1 the profitability of the cooperative will be higher than the profitability of the maximizing profit enterprise. However, in the model under consideration, each farmer's costs are a function of sales volume. This is indeed the case when it comes to dairy cattle, for example. The situation is changing when it comes to agriculture. Here, most of the costs are for the period preceding the harvest, so the cost should be considered not as a function of production but as an independent variable. Therefore, the task facing agricultural producers is also changing dramatically: it is necessary to calculate not the optimum volume of production, but what quantity of produced should be sent for sale, calculating that the price, as in the previous case, is related to the sales of linear dependencies.

Add to the terms of the model one more thing: total production costs (as well as unit costs) are the same for all farmers. Then the task facing each cooperator will look like this:

$$\max_{q} (a - [Q^f + Q_{-1}^c + q] q - C,$$

where C is the total unreimbursed costs of the i-th cooperator. The maximization conditions in this case are as follows:

$$a - Q^f - Q_{-1}^c - 2q = 0$$

then

$$q = \frac{a - Q^f}{n_c + 1} \qquad Q^c = \frac{n_c(a - Q^f)}{n_c + 1}$$

For an enterprise that maximizes profit, the optimal sales volume is:

$$Q^f = \frac{a - Q^c}{2}$$

and the equilibrium sales volumes of the cooperative and the enterprise will be respectively:

$$Q^{c*} = \frac{n_c}{n_c + 2} \quad Q^{f*} = \frac{a}{n_c + 2}$$

Then the profit of each member of the cooperative will be equal to:

$$\pi^c = \left(a - \frac{a(n_c + 1)}{n_c + 2} \right) \times \frac{a}{n_c + 2} - C = \frac{a^2}{n_c - 2} - \frac{a^2(n_c + 1)}{(n_c + 2)^2} - C,$$

and the profit of each supplier that maximizes the profit of the enterprise is:

$$\pi^f = \left(a - \frac{a(n_c + 1)}{n_c + 2} \right) \times \frac{a}{(n_c + 2)n_f} - C = \frac{a^2}{(n_c - 2)n_f} - \frac{a^2(n_c + 1)}{(n_c + 2)^2 n_f} - C,$$

Then condition is fullfilled when

$$\frac{a^2(n_c + 2) - a^2(n_c + 1)}{(n_c + 2)^2} > \frac{a^2(n_c + 2)n_f - a^2(n_c + 1)}{(n_c + 2)^2 n_f}$$

or

$$n_c < \frac{1 - n_f}{n_f - 1}$$

In other words, in order for the condition to be fullfilled , it is necessary that for any nf> 0 (given that nf and nc are natural numbers), nc must be less than zero. Under such conditions, the cooperative loses in competition to the enterprise that maximizes its profit. In the best case, by coordinating the actions of the members

of the cooperative, its production function becomes identical to the production function of the enterprise. However, such coordination has to do with transaction costs - the costs of negotiating and entering into agreements, collective decision making, opposition to opportunistic behavior, etc. These models do not touch on such an important aspect as profit sharing.

One of the most important tasks of the former Soviet economy was to achieve maximum economies of scale in virtually all sectors of economic activity. The result of this in a market economy was, in particular, the situation of the actual monopoly in the agricultural processing market. Providing expected future profits, experience shows, practically negates the incentives for outsiders to make long-term investments in an industry that actually freezes this.

In monopsony, the buyer, if he wants to obtain maximum profit, is obliged to purchase such quantity of goods that the marginal revenue received from its purchase is equal to its marginal cost [2, p. 518-519]. Therefore, the monopsonist purchases less goods than those purchased under conditions of perfect competition. Thus, monopsony, under other things being equal, reduces the common good.

However, another aspect of the problem of monopsony in the agricultural processing market is of interest. On the one hand, the expected future earnings of all economic entities, including the monopolist in question, are depreciated. On the other hand, the volume of the i-th crop can be represented as a function of the investments made in the past years, and the latter as a function of the profits received by the farmer in the respective years. While this approach is unlikely to take into account the many accidental factors in agriculture, the mere presence or absence of which is in many cases determined by the amount of investment made in previous years. Yes, the size of the crop of the i-th year can be represented as a static series:

$$H^i = k y_{i-1} + k^2 y_{i-2} + k^3 y_{i-3} + ... + \sum_{n=1}^{i} k^n y_{i-n}$$

where k <1, and the zero year is considered to be one whose investments do not have a significant impact on the size of the crop of the i-th year.

Then, in order to ensure at least a simple reproduction, the profits received by the farmer in the year and must be invested in the crop (m - i) of the following years:

$$y^i = k_{i+1} + k^2 y_{i+2} + k^3 y_{i+3} + \ldots + \sum_{n=1}^{i} k^n y_{i+n}$$

,

where (i + m) is the first year in which the crop is not a function of the profit of the year and. Let us present the situation in a graphical way (Fig. 1.3).

Fig. 1.3. Profits and investments in agricultural production
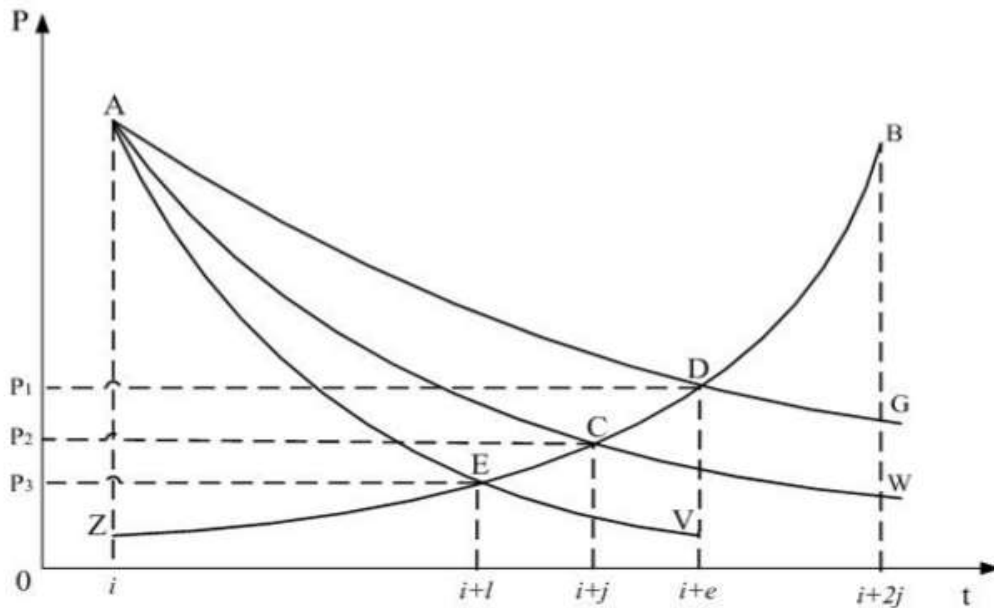
Here, the BZ curve reflects the amount of investment that must be made from year to year (i + 2j) in the crop year (i + 2j + l) to ensure easy reproduction. The AW curve reflects the distribution of profits for the next year's (1 st) investment year. In other words, the profits of the year (i - 1) to ensure simple reproduction must be numerically equal to the area of the triangle AWZ, and the amount of investment in the yield (i + 2j + l) -ro of the year must be equal to the area of the triangle BWZ. Therefore, to achieve equilibrium in simple reproduction, investments made from the (i - 1) year profits in the crop (i + j) -ro year must be equal to the investments made from the profit (i + j) -ro years in the crop (i + 2j + l) year. Note that with simple reproduction, the area of the triangle AWZ and BWZ are equal.

In the case where the investment curve for the profit (and −1) year in the next year's crop shifts upwards (the FS curve in the figure), the condition for extended reproduction is provided. Otherwise, when the curve shifts down (AV curve), we are dealing with a disinvestment situation.

Consequently, the agricultural processing market operates in monopsony. The sole buyer in this market has enough economic

power to distribute the profits at his discretion, but it should be noted that the profits of the monopsonist received in the i-th year are a function of the profits of agricultural producers obtained in the past (and - 1) years:

$$Y^i = \sum_{n=1}^{i-1} f(y_n)$$

Thus, given that the monopsonist expects to continue to profit from his activities in the future, the distribution should provide him with appropriate revenue streams in the coming years. However, in the conditions of a market economy, a depreciation of expected future profits arises, so it becomes possible and the situation presented in Fig. 1.4.

Fig. 1.4. Investment in agricultural production is needed and the expected income of the monopsonist
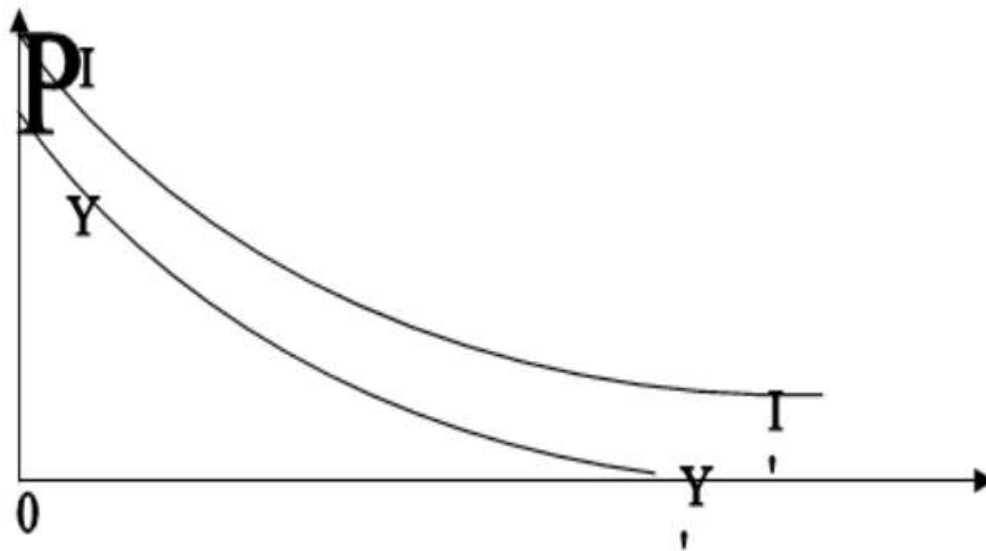
Curve II 'reflects the farmers' investment in future crop yields needed to ensure easy reproduction. YY 'curve is the monopsonist's expected earnings curve. In the latter case, there would be no incentive to provide for a cost-sharing of the i-th year that would allow at least a simple reproduction of agricultural products in the following years. The degradation of agricultural production in this case becomes inevitable.

Thus, research has shown that agricultural cooperation has a key advantage: when an agricultural cooperative operates, the degradation of the industry becomes virtually impossible. This

happens for two reasons. First, manufacturers distribute all net income among themselves, which makes sufficient investment possible in the future.

Secondly, a significant proportion of agricultural production in Ukraine is attributable to enterprises owned directly by those who work directly on the land, so their profits, as is the case in a conventional production cooperative, are partly related to the owner's income and partly to labor costs. Owners' earnings, which depend on labor costs, have a significant impact on their incentives. As a result, cooperative production continues to exist in conditions of high uncertainty, where entrepreneurial enterprises cannot exist.

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