

# INSTRUMENTS OF EXPENDITURE CONTROLLING IN THE MANAGEMENT SYSTEM OF UKRAINIAN AGRICULTURAL ENTERPRISES

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## Introduction

The control system has a large number of various instruments. The instruments used are traditionally mainly focused on optimization of business expenditures. With the expansion of functions of controlling and the complication of activities of economic systems of agricultural industry, a need emerged to apply not separate, but all the instruments, which are most important for the enterprise. There also emerged the problem of lack of coordination in various, applied control functions, that is why there appeared an inevitable need to improve the of expenditure management system of agricultural enterprises by applying specific instruments of expenditure control.

Any crisis, both on the worldwide scale (for example the one in Ukraine, which occurred in 2008) and on the company level, requires high alert of managers to eliminate the negative effects caused by such phenomena. Today, it is important to establish ways to overcome the economic crisis that exists in Ukraine in order to create effective mechanisms of production rise in domestic enterprises. Therefore, a search for new methodological approaches is conducted in order to maximize efficiency (through the implementation of measures to reduce/optimize costs). For this purpose, the diagnosis of causes of increased production costs, the cost of agricultural products, prices, were conducted in years 2008–2012, when the government moved away from the active combating of the domestic production decline in Ukraine. The data used in the article illustrates the examples of years as the justification for the need to use modern accounting methods and cost calculation.

Expenditure management should cover the set of instruments (methods), which in advance influence the structure and dynamics of expenditures towards their decrease or effective execution. In the modern world practice, various instruments (methods) are used to determine and regulate expenditures of the enterprise. The substantial contribution in the field of controlling and classification of its instruments (methods) had such researchers as: R. Borowiecki, E. Wysocka (2012), R. Borowiecki et al. (2013), E. Bojar, M. Kwietniewska-Sobstyl (2016), E. Bojar et al. (2016), S. Nowosielski

(2015), A. Jaki (2014). The publications considered using certain features which, in our opinion, require an integrated use with the aim of providing an effective expenditure management.

The purpose of this research is strategic expenditure management. Controlling in this sense – is a tool to achieve this purpose. For the reason of comprehensive research, we will conduct the economic evaluation of main indicators of farm management of Ukrainian agricultural enterprises.

## Ukrainian farm management

Agriculture is one of the most important productive industries of Ukraine, which is intended to satisfy the ever-growing consumer demand for food and drinks and raw materials – the food and consumer goods industry of Ukraine. Agricultural products (with the products of the food industry) form a substantial part of Ukrainian export. Thus, for example, in 2012, Ukraine exported such products worth 17.9 billion US dollars, which represents 26.0% of the Ukrainian export value (versus 18.7% in the 2011 year) (State Statistics Service of Ukraine, 2016).

The contribution of agriculture to Ukrainian GDP from the 2001 to 2012 year was in the range of 29.1 million UAH – 111.8 billion UAH, which indicates that agriculture over 11 years created GDP of 3.8 times higher (Fig. 1).

At the same time, the reduction of weight of agriculture in Ukrainian GDP was observed in the years 2001–2007. Thus, in 2002, in comparison with 2001, the weight of industry in GDP decreased by 1.4% and represented 13.0%, in 2003 – by 2.1% and represented 10.9%, in 2004 – by 0.1% and was equal to 10.8%, in 2005 – by 1.6% and represented 9.2%, in 2006 – by 1.7% and was equal to 7.5%, in 2007 – by 0.9% and was equal to 6.6%. In the years 2008–2011 the tendency of increase in the weight of agriculture in GDP of Ukraine was observed: in 2008 – by 0.3% and was equal to 6.9%, in 2009 – by 0.3% and was equal to 7.2%, in 2010 – by 0.4% and was equal to 7.6%, in 2011 – by 0.9% and was equal to 8.5%. In 2012 there again the increase by 0.6% was noticed

which meant that the contribution of agriculture to GDP of Ukraine was at the level of 7.9%. Thus, in the years 2001–2012 agriculture generated from 6.6% to 14.4% of gross value added of all economy sectors.

Development trends of agriculture in the years 2008–2012 were characterized by the growth of net income of revenues from agricultural products sales (crop and animal products) by 72.9 billion UAH or 2.6 times (Table 1), which was equal to 118.9 billion UAH in 2012. The greatest part of the net income was provided by crop products – about 78.7% (in the year 2012).

In the structure of net income (revenues) from agricultural products sales the weight of net income from sales of crop products increased up to 60 billion UAH, i.e. 2.8 times. In 2012 the net income from sales of animal products, in comparison with the year 2008, decreased to 12.4 billion UAH, i.e. by 6.7%.

The analysis of the expedience of products in agricultural enterprises (by the level of profitability (loss) of products) showed that during the 2001–2012, generally, it increased all over Ukraine (from 18.3% in 2001 to 20.5%

in 2012 – by 2.2%). Over the studied period, the level of profitability of crop products decreased by 13.5%, and the level of profitability of animal products increased – by 20.9% (Fig. 2). In total, manufacturing of crop products was always in the zone of profitability. In 2005 and from 2008 (till 2012), it was recorded that manufacturing of animal products stopped to be in the red – the level of profitability of 5.0% and 0.1% correspondingly was achieved.

The level and dynamics of profitability were influenced by a combination of various factors: production organization and management; expenditure management system; price policy; self-sufficiency in means and sources of their generation, amount, range and quality of products; the cost of manufactured and sold products, etc. (Brzozowska et al., 2015a; 2015b). We will try to determine the influence of the first order factors (the price and prime cost) on the profitability of specialized business processes: business process «Crop growing», business process «Animal husbandry» (Table 2).

Data from the Table 2 shows that in the year 2012, in comparison with the year 2011, the indicator of crop

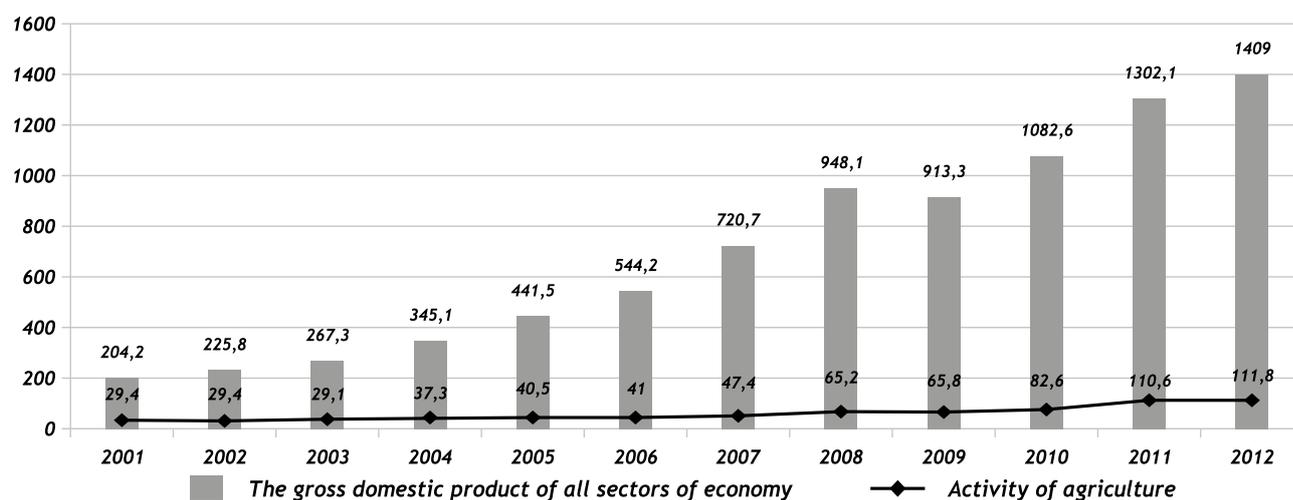


Figure 1. The tendencies of generating GDP by Ukrainian agriculture in the years 2001-2012, in billion UAH  
Source: own elaboration based on: State Statistics Service of Ukraine, 2016

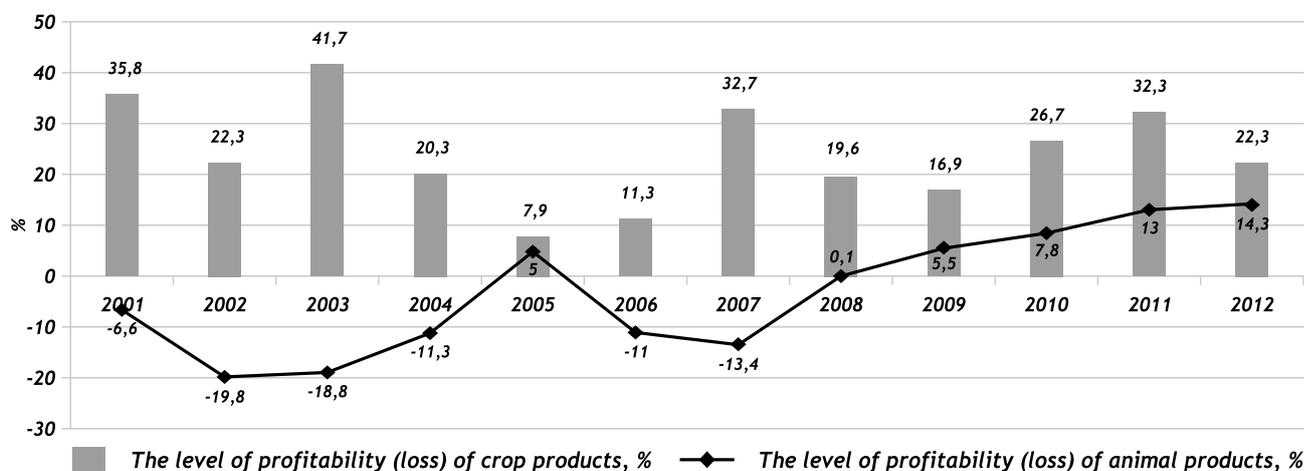


Figure 2. The level and dynamics of profitability (loss) of agricultural products of Ukraine in the years 2001-2012  
Source: own elaboration based on: State Statistics Service of Ukraine, 2016

Table 1. Dynamics and structure of net income (revenues) from sales of products by agricultural enterprises of Ukraine in the years 2008-2012

Indicators	2008		2009		2010		2011		2012		Changes (+, -) in 2008-2012		
	The amount, bln. UAH	in% of the total	The amount, bln. UAH	in% of the total	The amount, bln. UAH	in% of the total	The amount, bln. UAH	in% of the total	The amount, bln. UAH	in% of the total	The amount, bln. UAH	of the weight	in% to the 2008 year
The total – products	46	100.0	58.8	100.0	73.2	100.0	93.7	100.0	118.9	100.0	+72.9	x	2.6 times more
Crop products	33.1	72.0	43.8	74.5	54.1	73.9	71	75.8	93.6	78.7	+60.5	+6.7	2.8 times more
Animal products	12.9	28.0	15	25.5	19.1	26.1	22.7	24.2	25.3	21.3	+12.4	-6.7	+96.0

Source: own elaboration based on: State Statistics Service of Ukraine, 2016

Table 2. The influence of the first order factors on profitability of specialized business processes of agricultural enterprises of Ukraine in the years 2011-2012

Type of products	Sales, bln. UAH		Total cost, bln. UAH		Level of profitability, %			Variance of 2012 and 2011		
	2011 (base)	2012 (accounting)	2011 (base)	2012 (accounting)	2011 (base)	accounting by the basic prime cost	2012 (accounting)	total	including the ones on account of	
									price	prime cost
Crop products	71	93.6	53.7	76.5	32.3	74.2	22.3	-10.0	+41.9	-51.9
Animal products	22.7	25.3	20.1	22.2	13.0	26.3	14.3	+1.3	+13.3	-12

Source: own elaboration based on: State Statistics Service of Ukraine, 2016

Table 3. Dynamics of prime cost of main types of crop and animal products of Ukrainian agricultural enterprises in the years 2008-2012, UAH/c\*, UAH/ thousands of pieces

Crop products					
Years	Wheat	Sugar beet (factory)	Sunflower seeds	Potatoes	Field vegetables
2008	51.99	17.62	97.19	76.32	59.73
2009	68.41	29.65	117.77	93.24	62.60
2010	89.01	33.65	157.41	117.11	94.57
2011	93.72	31.95	166.49	122.36	81.17
2012	129.99	33.88	223.53	126.48	79.18
Variance of the 2012 year from the 2008 year (in %)	2.5 times greater	+92.3	2.3 times greater	+65.7	+32.6
Animal products					
Years	Cattle meat (in live weight)	Meat of the pigs (in live weight)	Poultry meat (in live weight)	Milk	Hen's eggs
2008	1267.60	1028.83	643.52	148.12	305.53
2009	1388.92	1108.23	668.02	155.26	343.58
2010	1658.69	1191.52	695.47	199.64	363.00
2011	1867.33	1277.19	735.62	232.79	355.79
2012	2056.63	1336.00	816.96	242.63	378.84
Variance of the 2012 year from the 2008 year (in %)	+62.2	+29.9	+27.0	+63.8	+24.0

\*c – centner = 100 kilograms

Source: own elaboration based on: State Statistics Service of Ukraine, 2016

products profitability decreased by 10.0%, the indicator of animal products profitability increased by 1.3%. Considering the crop products, this occurred due to the growth of price, but an increase of prime cost negatively affected the profitability and blocked the positive price influence (Kalinichenko et al., 2015). Considering the animal products, the increase was achieved thanks to the price, and also thanks to a notable decrease of the prime cost. Such consideration of influence of factors on the change in profitability stipulates the need for agricultural enterprises to conduct planning the optimum manufacturing by the types of products, their amounts, becoming attached to the positive financial result, demand for products, their prime cost and prices (Minkova et al., 2016).

The existing product cost defines the production efficiency of agricultural enterprises (Table 3).

The analysis of the prime cost of main types of crop and animal products of Ukrainian agricultural enterprises showed that generally during the studied period its continuous growth was observed.

The average prices of sale by agricultural enterprises on crop products, which prevailed in the 2012 year, grew versus 2008, for the wheat – by 2.1 times, for sugar beet (factory) – by 92.0%, for sunflower seeds – by 2.6 times, for potatoes – by 2.1%. At the same time, the prices for field vegetables dropped by 11.8%. Besides, the price of cattle meat rose (by 48.0%), and also the meat of the pigs (by 37.4%), the poultry meat (by 44.1%), milk (by 54.3%) and hens' eggs (by 65.2%) (Table 4).

According to the presented above results, the out-running growth of prime cost for the majority of types of products could be noticed. Therefore, to determine the causes of cost supplement, we will consider the cost structure by the elements which the prime cost of crop and animal products consist of (Table 5).

The analysis of the structure of production costs of crop and animal products by the elements shows that the main part of the expenses in the considered period, not only in the area of crop growing but also in the area of animal husbandry, is concentrated in material

Table 4. Dynamics of average prices of sales of the main types of products by agricultural enterprises (except the small) in the years 2008-2012, UAH/c, UAH/ thousands of pieces

Crop products					
Years	Wheat	Sugar beet (factory)	Sunflower seeds	Potatoes	Field vegetables
2008	75.64	22.40	138.95	113.15	93.43
2009	79.63	41.81	189.75	127.87	87.54
2010	109.12	48.73	302.80	225.30	130.25
2011	132.70	51.92	322.49	205.04	108.16
2012	155.51	43.00	359.09	115.58	82.36
Variance of 2012 year from the 2008 year (in %)	2.1 times greater	+92.0	2.6 times greater	+2.1	-11.8
Animal products					
Years	Cattle meat (in live weight)	Meat of the pigs (in live weight)	Poultry meat (in live weight)	Milk	Eggs
2008	835.53	1160.11	778.11	176.80	381.77
2009	830.57	1405.44	843.71	176.03	407.67
2010	896.08	1220.40	989.29	269.81	471.86
2011	1196.68	1364.79	1037.97	313.12	520.72
2012	1236.94	1594.11	1120.97	272.74	630.81
Variance of 2012 and 2008 (in %)	+48.0	+37.4	+44.1	+54.3	+65.2

Source: own elaboration based on: State Statistics Service of Ukraine, 2016

Table 5. The structure of costs of Ukrainian agricultural enterprises for production of crop and animal products by elements during 2008-2012, %

Elements of cost	Crop products					Animal products				
	Years					Years				
	2008	2009	2010	2011	2012	2008	2009	2010	2011	2012
Labor costs	10.2	9.3	8.6	8.8	9.5	11.8	10.7	10.0	9.7	9.2
Benefits-related deduction	2.5	2.8	3.1	2.9	3.5	2.8	3.2	3.6	3.6	3.4
Material costs	67.9	65.5	65.9	68.2	64.7	75.9	76.6	78.4	78.8	79.1
Amortization	5.6	6.6	5.9	5.4	5.7	3.9	4.2	3.9	3.6	4.1
Other costs	13.8	15.8	16.9	14.7	16.7	5.6	5.3	4.1	4.3	4.2

Source: own elaboration based on: State Statistics Service of Ukraine, 2016

$$\begin{aligned}
 & \text{The minimum price of material procurement for manufacture of products} + \\
 & \text{The amounts of indirect taxes on procured materials, which are not refunded to the enterprise} + \\
 & \text{Transportation and procurement costs} + \\
 & \text{Other costs on material procurement, which in priority should be minimum} = \\
 & \text{Cost of acquired materials}
 \end{aligned}$$

Figure 3. The model of formation of initial cost of materials acquisition (authoring)

Source: own elaboration

costs, labor costs and other costs (payment for the rent of land and property shares) (Patyka, 2016). During the period from 2008 till 2012, the essential changes in the cost structure of Ukrainian agricultural enterprises took place: the share of the material cost for the production of animal goods increased (from 75.9% in 2008 to 79.1% in 2012), the share of the material cost for production of crop goods decreased (from 67.9% in 2008 year to 64.7% in 2012). The share of the material cost in the area of animal husbandry is at the level of 75 – 80% and in the sector of crop growing – it is at the level of 65–70%.

The increase of the weight of material costs on agricultural products production is explained, mostly, by the growth of the price factor for material and technical means of industrial production, which are used in agriculture (purchased feeding stuffs, nitrogen, phosphate and potash fertilizers, crop and animals' protection products, automotive gasoline, diesel oil, the electrical power, spare parts, etc.), or payments for the works and services of external organizations of production character (Chekhlatyi et al., 2016; Kalinichenko et al., 2016).

### ***The instruments of expenditure controlling in agricultural enterprises***

Having conducted the economic evaluation of the main indicators of economic management of Ukrainian agricultural enterprises, there occurs a need to develop the conceptual approach to improve the competitiveness of enterprises in the sphere of agriculture, efficiency of their activity by means of reduction of expenditures, in other words, the need of improvement of the expenditure management system. One of the promising solutions to this problem is implementing instruments of expenditure control at agricultural enterprises.

Therefore, the development of a material supply plan should become a significant task for agro-manufacturers, which will become a real reserve of material costs reduction, which are a part of the manufacturing cost of products. At the bottom of such planning there should be logistic decisions concerning the choice of materials distributors (on the basis of price, delivery cost and other delivery costs) that should be made by the economic planning department or an individual who will perform similar functional duties (Brzeziński et al., 2014). The initial cost of the acquired materials should be calculated by the totality of minimum costs of their acquisition (Fig. 3).

Such a search for materials distributors will provide an essential decrease in the material costs and will increase the efficiency of activity of agricultural enterprises in general.

Of course, we may adapt an opposite approach, in other words, consider the targeted profit on sales of products and the price as invariable values (the pre-defined constants), and to obtain the planned prime

cost as necessary (Prime cost = Price – Profit). It is necessary to conduct the cost optimization (decrease) at the stage of planning manufacturing of products and at the stage of their manufacturing. For this purpose, we suggest introducing methods of cost management developed by international practice which support the lowering of the costs (the reduction of product cost) as the target costing and Kaizen costing. Because the reduction in expenditures is the most important reserve of profit optimization (at the possibility of an increase in product pricing), a reserve of capturing the market (at the possibility of a decrease in product pricing), and, consequently, the reserve of increase in competitiveness and financial stability of enterprise.

In the literature one can notice various approaches to the definition of «target costing» and «Kaizen costing» methods. It is possible to meet in Ukrainian sources the following characteristics of their guidelines: «Modern methods of product cost determination the target costing and the Kaizen costing are focused, first of all, on external factors of enterprise activity, and allow to predict the possible demand for products and the profit, which manufacturing enterprise can receive.... in practice the target costing and the Kaizen costing methods are used in parallel. This is due to the fact that both methods have the common main goal – the achievement of the targeted prime cost».

According to the opinion of the scientists L.V. Kuzmenko and V.A. Maksimenko, these methods pursue the achievement of the targeted prime cost at various stages: at the stage of the new product designing (target costing), at the stage of product manufacturing (Kaizen costing). L.V. Kuzmenko and V.A. Maksimenko consider the Kaizen costing method as a more organized method, which is the continuation of the target-costing and involves continuous improvement of quality of processes at the whole enterprise with participation of all its workers (Kuzmenko, Maksimenko, 2010).

Together both systems provide the enterprise with a rather valuable competitive advantage, which consists in the achievement of lower, in relation to the competitors, level of prime cost and also in the opportunity to choose the convenient price policy for capturing and retaining the corresponding market sectors (Yefremov, 2011).

Similar opinions are often given in other Ukrainian scientific publications, and also in the publications of the neighboring countries (Russian, Belorussian). The authors' model of cost management by the target costing and the kaizen costing methods is given in Figure 4.

The target costing method was founded in Japan and for the first time got the practical application in 1947 in the company General Electric, and then in Toyota corporation (in 1965). In the 1980s it spread in USA (Feil et al., 2004.). Nowadays, the target costing method is actively used by Japanese companies (Toyota, Nissan, Sony, Cannon, etc.), and also by the companies of Europe and the USA (former Daimler, Chrysler, ITT

Automotive, Caterpillar, Procter & Gamble, etc.). These companies deal with the automobile construction, machine construction, electronics, digital technologies, etc. The targeted prime cost, the so-called planned prime cost is calculated by this method. The target costing system provides the calculation of the targeted prime cost of the product on the basis of the previously established selling price (the target price) (Sani, Allah-verdizadeh, 2012).

The main condition for the calculations is the price at which sale may be performed in the planned volumes, and the profit, the reduced amount of which defeats the purpose of working on this product. The result of the calculations is the prime cost, into the development of which it is necessary to incorporate, manufacturing, and promotion of the product (Kosinova, 2007).

The realities of activity of Ukrainian agricultural enterprises provide an evaluation of manufactured during the year crop and animal products not by the planned prime cost, but by the fair value which is reduced by estimated expenditures at the place of sale (in particular, commissions to the sellers, brokers, indirect taxes, which are paid at sales of products).

Besides, in case of initial recognition of products by the fair value, it is necessary to recognize the difference between the fair value of agricultural products and the actual costs of their production as a part of income or expenditure. In these conditions, for each enterprise, which conducts operations of production and sales of agricultural products, there arise the logical questions: «What is the main purpose of enterprise creation which provides the bulk of its profit? What is the contribu-

tion of each product to the total value of profit?». What happens in this case is artificial under declaration of expenditure or income. It results in the recognition of profit (loss) as late as at the stage of manufacture. The incorrect product evaluation of agricultural enterprises takes place. In our opinion, the top priority should be the evaluation of crop and animal products with their placing in the property by the manufacturing cost – by expenses, connected with the biological transformations of plants and animals, and with their sales – by the prices of the active market. It appears that traditional practice of price formation at agricultural enterprises, which is based on the calculation of product cost (Prime cost + Profit = Price), at its evaluation by the fair value became the equality: Market price (actual) + Profit = Market price (expected). In fact, the basic indicators of the methodology of price calculation changed, which began to include the expenses of competitors, their margin (profit per unit) and the expected profit of particular enterprise from sales of products.

To solve the specified contradictions, and also for the purpose of bringing the need of evaluation of agricultural products to the planned manufacturing cost, we will turn to the question whether the targeted prime cost differs from the fair value, which is applied in the economic practice of Ukrainian agricultural enterprises. While searching for an answer, we found the distinction, which mainly lies in the fact that the fair value is determined upon the termination of manufacturing processes by means of researchers of the permanent commission on the measurement of the fair value of agricultural products, in other words, it is

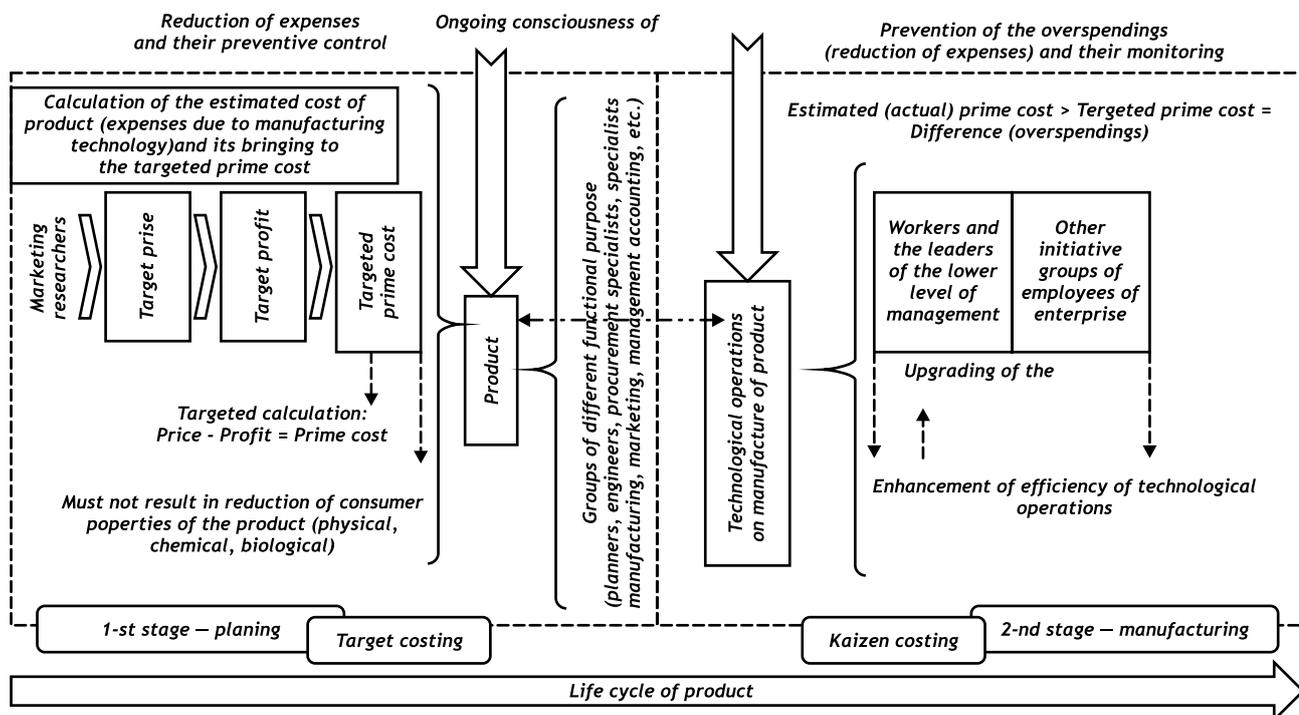


Figure 4. Complex model of manufacturing costs management by the target costing and kaizen costing systems (authoring)  
Source: own elaboration



actually the market price of the product. The targeted prime cost is established at the stage of manufacturing planning and is expected in the size by the articles and elements. The fair value cannot become the instrument of control, or cannot become the basis for planning and budgeting.

Thus, the application of the target costing method forces the agricultural enterprises of Ukraine to return to the evaluation of products by the planned manufacturing cost which takes into account the existing sequentially conducted technological operations at crop products manufacturing (the main soil cultivation, fertilizer treatment, secondary tillage, seeding-down, crop tending, harvesting) and at animal products manufacturing (technological stages of breeding the cattle, pigs, poultry, sheep, goats, rabbits, animals, etc., which are caused by the features of animal biological transformations).

The calculation of the planned prime cost should be conducted with the use of planning sheets (flow sheets), in which on the basis of the list of the scheduled technology works, edaphic-climatic conditions, the established output standards, the standards of labor costs,

the physical and other manufacturing resources (with taking into account the rational use of land, fixed assets, the application of progressive agricultural and zoo technical and organizational measures), the planned costs of maintenance of animals of different age-sex groups and the costs of cultivation of crops are in the physical and value terms.

It should be noticed that in agriculture the objects of calculation (the types of products) are various, and they are dependent on belonging to the corresponding cropper (a group of croppers) or the type (group) of animals. In particular, crop growing should include calculating grain, sunflower seeds, chaff, hay, sugar beet, potatoes, melons and gourds, fruits, berries, tobacco leaves, products of the medical essential oil plants, vegetables of protected ground, etc. At the same time, it is intended to apply one of the methods of calculation: method of the direct allocation of costs to the objects, the method of elimination of sideline products, combined, the proportional division of the cost of sale, natural indicators, etc.

The calculation of the planned manufacturing cost of particular agricultural products will provide the deter-

Table 6. Key positives and potential risks from the target costing application

Positives	Potential risks
Concept of the method: achievement of strategic aims of enterprise activity – earning the profit and provision of enterprise competitiveness	
Supports the strategy of expense reduction (reduction of expenses by the individual articles and, consequently, by the prime cost of the final product). Prime cost of the product is formed at the design stage (manufacturing planning)	Arising of logistic problems (a possibility of conflicts occurrence between the groups of specialists and excessive pressure on workers, which are connected with the constant aspiration to gain the targeted prime cost)
Determined expedience of manufacturing individual types of products (business units) at various cultivation technologies	The actual cost may exceed by the results of technology the targeted prime cost as early as at the stage of manufacture
Accomplished mechanism of motivation of the manufacturing process participants and managers, which is conditioned by the need to correspond with the targeted prime cost	If the products (business unit) are such, by which it is difficult to gain the targeted prime cost without the quality worsening, a decision of abstention from the manufacture can be made
All production activity of enterprise is coordinated in compliance with the targeted prime cost	There may be required a lot of time or serious investments for the targeted reduction of expenses
Implemented function of planning the manufacturing of new products	Technical capabilities of enterprise do not always allow to reduce the prime cost to the specified level
Implemented function of preventive control of expenses (established restrictive factors in expenditures and analyzing every article of expenditure, in other words, the need to remember constantly about the targeted prime cost shields the managers from application of more expensive technologies or materials)	
There exists an opportunity to choose the convenient price policy	
Promotes the rational use of resources	
It is combined with budgeting, profit planning, logistic delivery of materials, various strategies, management accounting	
Provides the increase in the level of satisfaction of consumers	

Source: own elaboration based on (Lyuban, 2010; Popivniak, 2008; Khryniuk, Vernyhora, 2012; Kiettyka, 2013)

mination of requirements for the labor objects (materials), which are intended for the use in manufacture, for internal budgeting. Therefore, the control over the use of material, labor, and other manufacturing resources, in other words, the early detection of the facts of variances in the occurrence of expenditures, the reasons for their occurrence, must happen with the application of budgeting. It will provide the understanding of future expenditures on the activity of the separate divisions of the enterprise, in other words, it will bring the need to achieve the targeted prime cost – prime cost, at which the products should be made.

The budgeting of expenditures, as one of the most important instruments of expenditure control, and which reveals in itself the technology of planning of the flows of expenses of enterprise functioning, is intended to create the effective system of expenditure management, at the bottom of which is cost minimization and its control. The obligatory rules of the budgeting of expenditures include its automation.

More than a dozen of software products of the budgeting processes automation are present at Ukrainian market. Among the modern software products worth noticing are «1C Enterprise 8: Management of agricultural enterprise for Ukraine» and «INTALEV: Corporate finance», which allow to organize a unified information system for expenditure management, and also the specialized automated system of budgeting «Forecast. Budgeting» from the company «Forecast». Among the western products, the most known on the market are Oracle Financial Analyzer (OFA), Hyperion Pillar, Adaytum e-Planning Analyst, EPS Prophix Budgets, Comshare MPS.

In our opinion the «target costing» method in combination with other instruments of expenditure control at agricultural enterprises will replace the scheme: «Manufacture → Prime cost → Profit or loss?» by the scheme: «Prime cost → Manufacture → Prime cost → Profit».

The key positives and potential risks from the target costing application are reflected in Table 6.

If the estimated prime cost exceeds the targeted prime cost only by 3 – 5%, then it is not the impediment to making the decision on manufacturing. Such a difference is successfully covered using the Kaizen costing at the manufacturing stage (Lysa, 2014). The Kaizen costing implements the mechanism of expense reduction, starting from the actual prime cost of the preceding year which becomes the basis for the current year. What happens in this case is the targeted decline in the prime cost against the basic prime cost – the conducted Kaizen-tasks to overcome overspending. The Kaizen costing lies between the desire of reducing the expenditures and provision of achieved in the previous year result. In our opinion, the «Kaizen costing» method produces the big effect in reducing manufacturing expenditures (prime cost of agricultural products) by enterprises. For this purpose, we will consider the key positives and potential risks from the Kaizen costing application (Table 7).

Generalizing the issues mentioned above, it may be affirmatively stated that the «target costing» and «Kaizen costing» methods have the prospects of application in the agricultural production of Ukraine. The target costing method can be used at the stage of manufacturing planning. The Kaizen costing method can be used at the manufacturing stage. The successful

Table 7. Key positives and potential risks from the kaizen costing application

<i>Positives</i>	<i>Potential risks</i>
Concept of the method: improvement of activity by means of internal reserves without attracting large investments from the outside	
Supports the strategy of reduction of expenses. Prime cost of the product is revised at the stage of manufacture of products	There is the need of staff motivation, and also of corporate culture, which promotes the direct involvement of the staff in execution of challenging tasks, that were set by the executive management to optimize every workplace at the enterprise
There exists the opportunity to choose the convenient price policy	
Provides upgrading of the quality of relationships, improvement of the production state of enterprise, in general – it provides continuous improvement to liquidate the difference between the gained (actual) and targeted (planned) prime cost	At the initial stage, the enterprises may face lack of support from the staff for such innovations
Provides the increase in the level of satisfaction of consumers	
It results in the elimination of losses of time, money resources, materials, efforts, etc.	

Source: own elaboration based on (Hrytsai, 2011; Kachalaj, 2013; Popivniak, 2008; Romanowska, 2015)



combination of the principles of the two methods in developing and manufacturing products will allow to reduce the prime cost of agricultural products. Their use is also substantiated by the possibility of coordinating the manufacturing process (at the stage of its setting and implementation) in order for the actual cost of products to be maximally close to the planned prime cost (targeted). The planned prime cost will act as the preventive measure for unreasonable expenses.

## Conclusions

Having researched the activity of the agricultural sector enterprises of the Ukrainian economy, we come to the conclusion that the use of individual instruments of expenditure control will lead to the improvement in the expenditure management system, and consequently, to the effective functioning of agricultural enterprises. Therefore, the top-priority task of improving the expenditure management system is the provision of the following prerequisites:

First of all, it is necessary to accept the logistic parameters of formation of the cost of purchased materials by means of development and application of material procurement plan in the practical activity of agro-enterprises, whose usage in the manufacturing process will provide the formation of reserve of material expenses reduction.

Secondly, it is necessary to accept by means of consolidation in the information system of the enterprise, through the order on accounting policy, as the basis for assessment, the planned manufacturing cost, which usage will provide the existence of the effective mechanism of preliminary expenditure control.

Thirdly, it is necessary to organize the implementation of the budgeting mechanisms, which will provide an effective monitoring system over the expenditures and the continuous coordination of the manufacturing process of plant cultivation and animal breeding.

Fourthly, for the purpose of the target costing stimulation and the Kaizen costing implementation, it is necessary to include them in the methods of calculation, through the approval of a separate section in the methodological recommendations on planning, accounting and calculation of the prime cost of products (works, services) of agricultural enterprises № 132, existing nowadays in Ukraine.

The organizational regulations, offered by us, will allow to use a combination of the separate instruments of expenditure control effectively, which will help to achieve the main objective of the enterprise activity – profitability of manufacture. Such combination, in our opinion, will form the new principle of the manufacturing system of agriculture of Ukraine: to manufacture in such a way, so that the profit is ensured.

The main objective of developing the production costs system of agricultural enterprises in Ukraine is to meet the requirements of production materials with

a maximum possible efficiency in appearance of the convenient price policy to reduce expenses.

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## References

- [1] Bojar E., Bojar M., Bojar W. (2016), *Cluster Initiatives in Eastern Poland: Good Practices in Agriculture and Food-processing Industry*, [in:] *Food Security and Industrial Clustering in Northeast Asia*, Springer, Japan, pp. 227–240.
- [2] Bojar E., Kwietniewska-Sobstyl M. (2013), *Spoleczna odpowiedzialność biznesu w dobie globalizacji-badanie porównawcze małych i średnich przedsiębiorstw województwa lubelskiego*, „Studia Ekonomiczne”, Nr 156, s. 35–50.
- [3] Borowiecki R., Jaki A., Rojek T. (2013), *Contemporary Economies in the Face of New Challenges: Economic, Social and Legal Aspects*, Foundation of the Cracow University of Economics, Cracow.
- [4] Borowiecki R., Wysłocka E. (2012), *Analiza ekonomiczna i ocena ekspercka w procesie restrukturyzacji przedsiębiorstw*, Difin, Warszawa.
- [5] Brzeziński S., Brzozowska A., Korombel A. (2014), *Tools for Integrating Enterprises in a Supply Chain*, Part 2, „Logistyka”, Nr 5, s. 28–30.
- [6] Brzozowska A., Kalinichenko A., Kabus J. (2015a), *Analyzing The Strategies Used In Media Discourse Management*. „Eastern-European Journal of Enterprise”, 5/3(77), pp. 10–14, DOI: 10.15587/1729–4061.2015.51397.
- [7] Brzozowska A., Kalinichenko A., Minkova O. (2015b), *Ecological Perspective of IT in Environmental Management*, Poltava State Agrarian Academy, Poltava.
- [8] Chekhlatyi O., Galych O., Kalinichenko A. (2016), *The Creation of the Modern System of Informational-advisory Support as a Necessary Condition for the Development of Rural Areas*, Zeszyty Naukowe Politechniki Częstochowskiej, Zarządzenie, 21, pp. 80–87, DOI: 10.17512/znpocz.2016.1.08.
- [9] Feil P., Yook K.H., Kim I.W. (2004), *Japanese Target Costing: A Historical Perspective*, „International Journal of Strategic Cost Management Spring”, pp. 10–19.

- [10] Hrytsai O.I. (2011), *Usage of Methods of Expenditure Management in Business Innovation Activity*, Bulletin of National University Lviv Polytechnic „Management and Business Activity in Ukraine: Stages of Establishment and Problems of Development”, No. 720, pp. 9–16.
- [11] Jaki A. (2014), *Mechanizmy rozwoju paradygmatów zarządzania*, „Przegląd Organizacji”, Nr 2, s. 8–13.
- [12] Kachalai V.V. (2013), *Kaizen-Costing: Experience and Perspectives of Introduction at Industrial Enterprises of Ukraine*, „Business-Inform”, No. 8, p. 273–277.
- [13] Kalinichenko A., Minkova O., Sakalo V., (2015), *Main Directions in Development of Organic Industry in Ukraine and Experience of Innovation Implementation: A Comprehensive Analysis*, „Technology Audit and Production Reserves”, No. 5/3(25), pp. 10–14 (in Ukrainian), DOI: 10.15587/2312–8372.2015.50677.
- [14] Kalinichenko A., Minkova O., Sakalo V., Vakulenko Y. (2016). *Managing Integrated Systems of Information Streams within Agrarian Enterprises*, Zeszyty Naukowe Politechniki Częstochowskiej, Zarządzanie, Nr 21, s. 150–158, DOI: 10.17512/znpcz.2016.1.15.
- [15] Khryniuk O., Vernyhora N. (2012), *Modern Systems of Prime Cost Management. Economic Analysis*, Proceedings of TNEU, No. 10(4), pp. 402–408.
- [16] Kiełtyka L. (2013), *Wykorzystanie systemów eksperckich w zarządzaniu wiedzą*, „Organizacja i Zarządzanie”, Nr 1148(5), s. 119–130.
- [17] Kosinova Ye.L. (2007), *Tselyevoye upravlyeniye syebyestoimostyu v kontseptsii target costing (Target management of prime cost in the concept of target costing)*, „Vestnik Taganrogskogo instytutu upravlyeniya i ekonomiki”, 1, pp. 33–37 (in Russian).
- [18] Kuzmenko L.V., Maksimenko V.O. (2010), *Methodological Approaches to Selection of the System of Prime Cost Calculation under Market Conditions*, „Bulletin of National Technical University «Kharkiv Polytechnic Institute»”, No. 56, pp. 1–17.
- [19] Lysa O.V. (2014), *Opportunities for Optimization of Volumes of Business Current Assets According to Gradual Reduction of Direct Material Expenses*, <http://www.economy.nayka.com.ua/index.php?operation=1&iid=169>, (in Ukrainian), access date: 29.06.2016.
- [20] Lyuban V.V. (2010), *Upravlyeniye zatratami promyshlennykh predpriyatiy kak instrument povysheniya konkurentnosposobnosti otychestvennoy produktsii (Cost Management of Manufacturing Enterprises as the Instrument of Improving the Competitiveness of Domestic Products)*, „Ekonomika i upravlyeniye”, Nr 4, pp. 41–49 (in Russian).
- [21] Minkova O., Kalinichenko A., Galych O., (2016). *Trends in the Development of Organic Agricultural Production in Ukraine*, „Actual Problems of Economics”, No. 1(175), pp. 76–82 (in Ukrainian).
- [22] Nowosielski S. (2015), *Koncepcja Lean management w małym przedsiębiorstwie. Możliwości i ograniczenia zastosowania*, „Przedsiębiorczość i Zarządzanie”, Nr 16 (3, cz. 2), s. 69–80.
- [23] Patyka V., Buletsa N., Pasichnyk L. et al. (2016), *Specyfics of Pesticides Effects on the Phytopatogenic Bacteria*, ECE S. 23(2), pp. 311–331.
- [24] Popivniak, Yu. M. (2008), *System of Target Calculation: Peculiarities and Advantages of Introduction into National Business Practice*, „Scientific and Theoretical Journal «Science and Economy» of KhEU”, No. 3(11), pp. 147–151.
- [25] Romanowska M. (2015), *Innowacyjne przedsiębiorstwo w nieinnowacyjnej gospodarce*, „Przegląd Organizacji”, Nr 8, s. 4–8.
- [26] Sani A.A., Allahverdizadeh M., (2012), *Target and Kaizen Costing*, „International Journal of Social, Behavioral, Educational, Economic, Business and Industrial Engineering”, No. 6(2), pp. 171–177.
- [27] *State Statistics Service of Ukraine*, <http://www.ukrstat.gov.ua/>, access date: 27.06.2016.
- [28] Yefremov A.V. (2011), *Upravlyeniye i uchet zatrat pri izmenenii kachestva produktsii na predpriyatiyakh po sistyemam target-kosting i kaizen-kosting (Management and Cost Accounting at the Change in Product Quality at Enterprises by the Target Costing and the Kaizen Costing Systems)*, „Vestnik APK Stavropolya”, No. 3(3), pp. 91–94 (in Russian).

### **Instrumenty kontroli wydatków w systemie zarządzania przedsiębiorstwami rolnymi na Ukrainie**

#### **Streszczenie**

Celem badania jest rozwój koncepcyjnego podejścia w celu zwiększenia konkurencyjności przedsiębiorstw w obszarze rolnictwa, efektywności ich działalności poprzez zmniejszenie wydatków. Jednym z obiecujących kierunków realizacji tych zadań jest implementacja określonych instrumentów kontroli kosztów w przedsiębiorstwach rolnych. Cel badania stanowią warunki organizacyjne optymalnego systemu zarządzania kosztami produkcji ukraińskich przedsiębiorstw rolniczych. Teoretyczno-metodyczną podstawą przeprowadzonych badań stały się prace ukraińskich i zagranicznych naukowców dotyczące zarządzania kosztami. W opracowaniu wykorzystano następujące główne metody: abstrakcyjno-logiczną (podczas studiowania najnowszych publikacji naukowych oraz osiągnięć w zakresie praktyki w odniesieniu do przedmiotu badań, podczas oceny wyników własnych na tle znanej już wiedzy, podczas wyboru nierozwiązanych problemów oraz opracowania celów badania), analizę systemu, metodę graficzną (sporządzenie wykresów) oraz statystyczną (przy określaniu czynników wpływu na uzyskany wskaźnik). Badanie opiera się na danych pochodzących z oficjalnych materiałów Państwowego Urzędu Statystycznego Ukrainy, wynikach badań i obliczeniach własnych oraz na materiałach pochodzących z publikacji na temat zarządzania kosztami, ukraińskich i zagranicznych naukowców.

#### **Słowa kluczowe**

rachunek kosztów docelowych, rachunek redukcji kosztów Kaizen, koszt własny, planowanie, budżetowanie