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ENHANCING THE STABILITY OF A VERTICALLY
INTEGRATED AGROINDUSTRIAL COMPANIES
UNDER UNCERTAINTY

The paper presents an analysis of the main provisions of uncertainty and its relation to the category of risk. On the basis of empirical research major uncertainties and risks, and their impact on agricultural enterprises, processing plants and vertically integrated structures are defined.

Keywords: uncertainty; risk; agriculture; processing plants; vertically integrated structures.

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ПІДВИЩЕННЯ СТІЙКОСТІ АГРОПРОМИСЛОВИХ
ВЕРТИКАЛЬНО ІНТЕГРОВАНИХ ФОРМУВАНЬ
В УМОВАХ НЕВИЗНАЧЕНОСТІ

У статті проаналізовано основні положення невизначеності та її зв'язки з категорією ризику. На базі проведених емпіричних досліджень сформульовано основні види невизначеності і ризику та визначено їх вплив на сільськогосподарські, переробні підприємства, а також агропромислові вертикально інтегровані структури.

Ключові слова: невизначеність; ризик; сільське господарство; переробні підприємства; вертикально інтегровані структури.

Табл. 1. Літ. 16.

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ПОВЫШЕНИЕ УСТОЙЧИВОСТИ АГРОПРОМЫШЛЕННЫХ
ВЕРТИКАЛЬНО ИНТЕГРИРОВАННЫХ ФОРМИРОВАНИЙ
В УСЛОВИЯХ НЕОПРЕДЕЛЕННОСТИ

В статье проанализированы основные положения неопределенности и ее связь с категорией риска. На базе проведенных эмпирических исследований сформулированы основные виды неопределенности и риска и определены их влияние на сельскохозяйственные, перерабатывающие предприятия, а также агропромышленные вертикально интегрированные структуры.

Ключевые слова: неопределенность; риск; сельское хозяйство; перерабатывающие предприятия; вертикально интегрированные структуры.

Problem statement. External factors, in relation to agricultural companies, are forcing their top management to find new ways to resist the aggressive environment. The most influential factors of environment is political instability in the country; and also – increasing tax load; raider attacks; absorption by competitors etc. Under these conditions only adapted and strongest enterprises can survive. They develop and implement a number of crisis management measures and other programs that take into account all potentially possible situations.

Recent research and publication analysis. The concept of uncertainty in economy is used in several ways (Lopatnikov, 2003):

- 1) "the uncertainty of nature" (external environment in relation to the system under consideration);
- 2) the uncertainty of goals;

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3) the uncertainty of enemies (in case of a conflict, severe competition).

According to F. Aralbaeva et al. (2002), continuous emergence of new circumstances significantly affects the processes occurring in it. In most cases a manager has to deal with the situation of alternative decisions availability.

V. Kapustin (1993) considers that uncertainty is the totality of information needed for decision-making in the absence of information about coming of certain events.

P. Jovanovic (1999) and R. Fatkhutdinov (2002) also studied investment decision-making under uncertainty and risks.

When firms deal with investment projects, many factors are uncertain. Uncertainty analysis is usually performed as part of a decision-making (DM) process, and nowadays it is included in most business software or in software packages as the one discussed in (Winston, 1998). Through uncertainty propagation, the decision maker is able to understand his/her degree of confidence in the decision (Apostolakis, 1995), and to assess the risks related to various favorable and adverse scenarios (Bodie et al., 2001; Helton, 1993; Winston, 1998).

Managers in the agricultural sector make decisions in a risky, ever changing environment. Consequences of their decisions are generally not known when decisions are made, and outcomes may be better or worse than expected. Changes in technology, legal and social concerns, and the human factor also contribute to the risky environment in agriculture. The above problems were studied by many scientists (Alizadeh and Nomikos, 2005; Anton and Giner, 2005; Blandford and Currie, 1975; Hardaker, 2000; Sanders et al., 2008).

The research objective is the exposure of principal types of uncertainties and their impact on economic stability of agroindustrial vertically integrated companies.

Methodology. Theoretical and methodological basis for the study is considering symptoms and the development of the crisis situations and their solutions under uncertainty. The methods of empirical research, analysis and synthesis, historical, abstract and logical methods have been used in this research.

Results and discussion. In vertically integrated companies the level of uncertainty on some factors may be reduced. As a rule, these companies have a constant flow of raw materials from their own farmlands, perennial plantations, cattle farms. They can also buy raw materials for processing from other farmers. The optimal way depends on sales prices. The sale prices depend on the channels, volumes, quality of raw materials, timing etc. Vertically integrated enterprises can compete with intermediary structures, establishing long-term relationships with primary producers, concluding contracts on very favorable terms.

There are situations, which have unpredictable influence on the development and performance of integrated companies. Diversification strategy, promotes the absorption by vertically integrated companies in other sectors of agriculture due to the quota system of production and sales at domestic and foreign markets. For example, in March 2011 the holding "Kernel" acquired the majority share (71%) of the group of companies "Ukrros".

The problem of the sugar industry is not as much competition among producers, but the price for the key product. In 2012 it dropped to the level of 2009. The sugar price was 5910 UAH/ton, while its production cost was about 7000 UAH/ton. At the London Stock Exchange (May contract) on April 2, 2012 the cost of white was

643.60 USD/ton. The change from the previous day of trading amounted to 9.50 USD/ton upwards (Mirovoi rynek..., 2012). Thus in Ukraine, the wholesale price of sugar was higher than at London Stock Exchange by 100 USD/ton approximately. This makes the export of sugar quite difficult.

The current situation at the sugar market (surplus production, high wholesale prices and production quotas) indicates serious losses in this business. That is why "Kernel" wants to get out of the sugar business and sold all its plants (together or separately) during 2012–2013 (Kernel produet..., 29.11.2012).

In the fiscal year 2012 the agricultural holding "Sugar Union "Ukrros" had losses in the amount of 59.388 mln UAH.

As a result, its strategy refocused on the category of risk. In other words, there is a lowering of economic benefits associated with the implementation of specific solutions (planned options) under the conditions other than those for which the solution would be optimal.

This example shows the relationship between the concepts of uncertainty and risk. Uncertainty is seen as a shortage or absence of certain information necessary for making strategic decisions or as the impossibility of a single choice of effective option. Risk is the result of uncertainty expressing losses which exceed the targets.

When farmers due to climatic conditions (winter icing, flood, drought, hurricane, etc.) have losses and cannot cover them from other sources of income, vertically integrated companies, on the contrary, can cover these losses by purchasing raw materials from other producers and manufacturing the final product.

Modelling and interpretation of various situations for the future by using economic and mathematical tools enable reducing the level of uncertainty and risk, but not avoiding it. A variety of factors can always have negative impacts. In turn, enterprise management can take poor decisions that lead to unnecessary losses.

The entry strategy for new market segments of the mentioned above company ("Kernel") was uncertain. Major options considered (a good source of raw materials – "Ukrros" factories for the production of sugar, molasses and bagasse) provided the preconditions for an optimistic forecast, but sugar overproduction and quotas introduction have led to enormous losses.

Table 1 shows uncertainties and risk for different agroindustrial companies.

As can be seen from the comparisons in Table 1 farms are more vulnerable to exogenous factors. Next go processors. Vertically integrated companies are the least sensitive to these factors.

What is the advantage of these structures in comparison with other types of agroindustrial companies?

First, these structures have their own raw material base and can also purchase resources from other agricultural producers. While processing plants do not have the resource base and completely depend on external suppliers. As to farms, there are difficulties with selling products due to market monopolization by intermediary structures which are not interested in fair cooperation.

Second, farmers have fixed agricultural tax, and processing plants are subject to common taxation. The increase of tax burden decreases efficiency. Vertically integrated companies are able to optimize the level of taxes by transferring activities or other measures inside them.

Table 1. **Uncertainties (U) and risks (R) of the agroindustrial companies functioning in Ukraine, authors'**

Types of uncertainties and risks		Type of agroindustrial companies		
		Farm	Processing company	Vertically integrated company
Production of raw materials	U	Lack of markets or their monopolization	Lack of raw material suppliers	Self-supply and purchase of raw materials
	R	Losses or short-received income	Underutilized production capacity, production stop, competition, monopolization of the market, losses	Competition, monopolization of the market, reducing the efficiency, losses
Raiding	U	Transfer of ownership (full or partial) to another (natural or legal) person		
	R			
Tax burden	U	The growth of tax burden		
	R	Decrease in economic efficiency	Load optimization by transferring to one of the activities	
Managers' competence	U	Absence or lack of needed information	Higher administrative staff costs	
	R	Unreasonable management decisions	Reduction in quality	
Acquisition by competitors or agricultural holdings	U	Acquisition is possible		
	R	Loss of control		

Third, any joint venture company cannot be confident that competitors will not acquire them, expanding the scale of operations and diversifying activities.

"Kernel" is pursuing an aggressive expansion policy aimed at increasing the market share of land, production facilities for sunflower oil, providing its own sea port terminals, elevator capacities etc. At the same time, the company has entered the markets of neighboring countries – in Russia it bought 100% of the shares of the company "Russian Oil" (the producer of sunflower oil) and provided its own export oil produced by LLC "Grain Terminal Complex "Taman" (purchased with Renaisco BV, a subsidiary of Swiss holding company Glencore International plc), received a 50% share of the assets. The Group of companies "Kernel" also includes the sub-holdings, such as JSC "Eurotech", Enselko, Sugar Union "Ukros", Stiomi-Holding, Inter-Agro, Druzhba Novaya and other processing plants.

And finally, as to the competence of managers we should note the following. At farms most functions are performed by their heads. In case of lacking specific information needed for efficient managerial decisions this can bring the farm down. The same situation exists at small and medium-sized processors. Vertically integrated companies and large processors have appropriate management staff responsible for different aspects of functioning. At the same time, the growing size of an enterprise results in the increasing of expenses on personnel. This can increase the share of these costs in the total production cost and reduce the final management result. The example of "Kernel" is the evidence of the increasing complexity of organizational and management structure and of the growth of expenses on management staff.

Any agroindustrial company cannot be protected from raider attacks. As a result, a share or all of the property are transferred to new owners. Large national vertically integrated agroholdings now often register their legal address outside Ukraine. For example, the assets of agricultural holding "Ukrlandfarming" are registered in Cyprus, Kernel Holding SA and MHP S.A. – in Luxembourg, Astarte-Kiev (Astarta Holding NV) – in the Netherlands etc. In this way companies are protecting themselves from raiders.

Conclusions. Dynamic conditions of the environment, in which vertically integrated companies operate, change the traditional "rules of the game" and put forward new requirements to various business aspects.

Uncertainty of development results in increased business risk. This can bring in increased spending on maintenance of company's management, reduction in the quality of management, decline in efficiency, loss of control, transfer of ownership on a part or all property to another (natural or legal) person etc.

In order to increase the resistance to exogenous factors, vertically integrated companies may use the following:

- consulting services;
- marketing services;
- hiring managers (including foreign) with relevant work experience in different sectors and areas of activity;
- diversification of activities into new regions and new activities scope.

Improving the sustainability of companies in relation to internal factors requires attracting new managers from outside, and training of company's employees, including both training and retraining (for a new specialty). This will lead to more effective decisions at all management levels.

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Стаття надійшла до редакції 1.03.2016.