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Financial rehabilitation of agricultural enterprises

Introduction

Activity of enterprises in the competitive market environment under reformation of the economic system, formation of the new economic and financial relations in the country stipulates for the appearance of a real threat of bankruptcy almost for each enterprise despite its financial state and status among competitors.

In this connection the problem of rehabilitation as a system of actions, directed towards extricating agricultural enterprises from the financial crisis, is becoming more actual nowadays. Inefficiency and incompleteness of legislative and normative basis on the issue of rehabilitation, as well as lack of the only consistent methodological approach to its financial essence and mechanism of its use restrain the introduction of rehabilitation into the Ukrainian enterprises.

The individual aspects of the issue of rehabilitation of enterprises as well the agrarian sector are highlighted in modern economic literature. The basis for the further scientific researches was formed owing to the works of the leading Ukrainian and foreign scientists, such as O. Tereshenko, S. Salyha, A. Podderyohin, A. Cherep, P. Sabluk, M. Demyanenko, P. Stetsyuk, N. Zdravomyslov, A. Sheremet and others. Emphasizing the importance and practical meaning of the workings in theoretical and methodological base on the issue of enterprise's rehabilitation, one should admit that some theoretical, methodical and practical aspects of the financial rehabilitation of agricultural enterprises, depending directly upon the natural resources, are not explored.

Research goals, tasks, objects and methods

Goal of the research is related to substantiation of the development of anti-crisis management and financial rehabilitation of agricultural enterprises. Implementation of this goal is associated with the solution to the following *tasks*:

- to identify the essence of financial rehabilitation of agricultural enterprises with regard to ecological ingredient;
- to make the ways of government support for the financial rehabilitation of agricultural enterprises more exact;
- to substantiate the application of mathematical model of financial rating and bankruptcy forecasting adapted for agricultural enterprises;
- *the following methods were used in the research:* monographic, abstractly logical, calculation-structural and comparisons, generally accepted statistical methods.

Financial rehabilitation of agricultural enterprises with regard to ecological ingredient

The development of competitive market relations compelled close attention of scientists to the problems of adjustment of bankruptcy as an integral part of market economy, one of which is the problem of financial reorganization – enterprises' rehabilitation.

Rehabilitation is examined by a great majority of the Ukrainian scientists in the context of institution of enterprises' bankruptcy as one of the methods of restoration of paying capacity and impermission of going out of business. Some foreign authors separate rehabilitation institution from bankruptcy, but examine this issue in the system of anti-crisis management along with the problem of bankruptcy. The others suggest that rehabilitation be examined separately from bankruptcy as the methods of reorganization of each enterprise.

One may distinguish the following forms of rehabilitation: rehabilitation by means of financial measures (financial rehabilitation) and rehabilitation by means of other measures (organizational, social, industrial, etc.).

Financial rehabilitation is restoration of enterprise's paying capacity by taking financial measures: assets and liabilities restructuring, which provides in order to increase balance liquidity by business capital as a rule and is not going to introduce fundamental changes to the organizational, technological and production structures of enterprise. The goal of financial rehabilitation is to cover current losses and eliminate the cause of their springing up, to restore and maintain liquidity and solvency of enterprises, to reduce indebtedness, to improve the structure of current assets and to raise the financial funds which are essential for providing industrial rehabilitation [Podderyohin 2004, p. 305].

When drawing a general conclusion from the modern theoretical and methodological approaches to the definition of "financial rehabilitation", we suggest

that financial rehabilitation of agricultural enterprises be examined as restoration of paying capacity, coverage of losses, formation of the financial potential for the growth on the basis of ecologization of production technologies, ecologically sound output, preservation of high-quality parameters of agrosystem.

Analysing the situation in the agrarian sector of Sumy region during 2005––2009, one should admit that agricultural enterprises as major agricultural producers have to operate in the difficult crisis conditions which can't be still improved. The amount of loss-making agricultural enterprises is still high during this period of time (Figure 1).
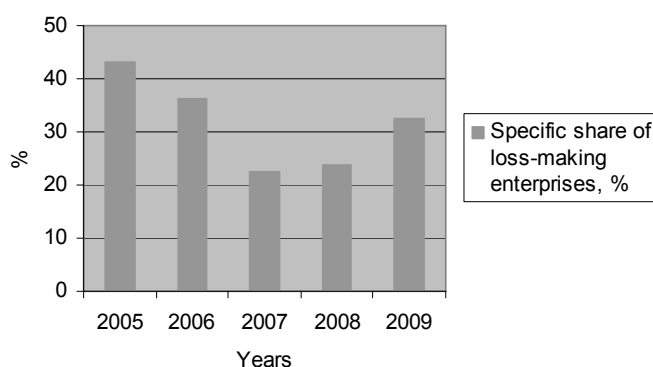

Figure 1
Specific Share of Loss-Making Agricultural Enterprises of Sumy Region, 2005–2009
Source: According to the Data of the Chief Board of Statistics in Sumy Region: http://www.sumystat.sumy.ua

From our point of view, the important effect of introduction rehabilitation into the particular enterprise is ecological effect, the essence of which lies in preservation and restoration of natural resources, particularly land, which are at the disposal of the enterprise.

Carrying out rehabilitation of agricultural enterprises should be connected with land protection as a means of agricultural production and natural resource. The firm basis for rational land use in agriculture would be formed when proving rehabilitation of agricultural enterprises with regard to ecological ingredient. One of the principle of economic mechanism of regulation of land relations is obligatory restoration of ecological and production losses.

If agricultural enterprise goes into liquidation, the abandoned land suffers from damage. Sometimes liquidators are unable to sell property of enterprises: buildings, constructions, and the land, on which they are situated, is neglected and gradually destroying.

The future expenditure should be projected to save the government from financing the actions on land renewal in a certain period of time.

Rehabilitation with regard to ecological ingredient may be provided with the existence of proper financial provision for ecological measures. Money, needed for land restoration when providing rehabilitation or after liquidation of enterprise and its property, should be accumulated in the off-budget regional ecological fund, to which payments for environment pollution and other ecological payments are paid. Money, being accumulated in the state or local budget, is likely to go on other needs. The same thing may be forecasted with creation of special fund for restoration of natural resources directly at the enterprise. A sum of deductions to the fund can be calculated according to the following formula:

$$F = \frac{S \times Q \times T}{100\%}$$

where:
F – size of deductions,
S – area of land,
Q – money for one hectare of land,
T – size of insurance rate on the particular territory.

Ways of government support for financial rehabilitation of agricultural enterprises

Alternative to ecological payments to the regional off-budget fund may be introduction of insurance of land resources. The insurance case would be making decision about rehabilitation or liquidation of enterprise, insurance rates and payments would be determined according to the cost of land on the particular territory [Borisova 2003, pp. 168–171]. Measures of the government support for financial provision for reproduction of natural environment when carrying out rehabilitation of enterprise may be reformation of enterprise's tax by decentralization of payments for using natural resources.

From our point of view it must be determinative to take into consideration ecological ingredient when providing rehabilitation of enterprise. The appropriate government support is needed to carry out reorganization with regard to ecological and economic factors. So, it is expedient for ecologization of the financial mechanism of rehabilitation:
– to simplify mechanism of payments for environmental pollution and their coming to proper budgets;
– to work out effective system of checking accuracy of accounts documents of nature users;

–   to interest nature users either in counting off to the natural protection funds or in taking the natural protection measures;
–   to produce legal and normative documents which determine mechanism of economic benefits in the form of loans without interest or free of charge, tax reduction and procedure of their use;
–   to simplify the system of financing the natural protection actions from the regional natural protection funds;
–   to use resource payments for solution to ecological problems, restoration of natural resources and improvement of their quality.

Hence, restoration of the natural resources which are at the disposal of enterprises, along with reproduction of paying capacity provide reformation of system of enterprises.

Influence on the development of enterprise and stimulation of its activity is made on two levels – on the government level (macrolevel) and on the level of specific enterprise (microlevel).

Macrolevel of management contains elements of regulation of mechanisms: government regulation of market processes, legal regulation of business activity, social regulation, political regulation, etc.

We believe it is microlevel (the level of the specific enterprise) that plays the decisive role in management of the processes of regulation and support for enterprises' rehabilitation. Microlevel makes actions of the specific enterprises to find the way out of crisis more exact: development of their own pricing policy, improvement of the internal organizational structure, provision of financial stability by improving financial mechanism of enterprises, elimination of loss-making production, introduction of new technologies, etc.

The issue of the government regulation of rehabilitation is a subject for discussion of the foreign and Ukrainian scientists. The analysis of practice of administrative influence on rehabilitation shows that in order to receive complex government support, insolvent enterprises have to meet the following terms:
–   use of the new effective resource saving and ecologically safe technologies;
–   export of competitive produce;
–   replacement of import products and raw materials by domestic ones;
–   solution to the problem of energy provision;
–   solution to the problem of energy conservation;
–   conservation of the scientific and technical potential;
–   the existence of domestic and foreign markets;
–   the high level of management at the enterprise.

We consider that the importance of enterprise for the rational economy should be added to the given criterions (percentage of the local budget revenue, percentage of employees among rural and urban inhabitants, partnership with

regional enterprises, availability of employment provision in the case of enterprise's liquidation). Consideration of this factors is essential for the quantitative and qualitative evaluation of the results of enterprise's liquidation for local economy and social sphere.

The investigators of the problem of the government support for enterprises' rehabilitation emphasis that this support is primarily oriented towards the enterprises, which are able to provide maximum return when using it and increase production that might have a positive influence upon budget income.

The enterprises are independent in making business decisions. That's why they have to shoulder the real economic liability for the results of their business activity and towards their partners: providers, buyers, investors, employees and the government as well. A high probability of crisis in enterprise's activity stipulates a need for anti-crisis management.

Anti-crisis management is one of the functional directions of the enterprise's management. This is a constant process of determination of the signs of crisis phenomena and realization of the grand plan aimed at their inadmissible spreading [Plaksin 2003, p. 5].

So, the crucial stage in anti-crisis management is external and internal environment rating of enterprise. In this regard, there is a need to carry out the qualitative effective analysis of the financial state which is the indicator of enterprise's capability to operate profitably at the market.

Determination of indications of enterprise state's becoming worse enables to prevent enterprise from going bankrupt and find the optimal ways of increasing financial stability. So, the analysis of the financial state of enterprise is essential stage in anti-crisis management.

Generalization and systematization of indicators which are used to foresee the crisis phenomena at the enterprise enable to distinguish the following groups:
– indicators of profitability;
– indicators of business activity;
– indicators of liquidity and solvency;
– indicators of financial stability.

But, the obtained results of the financial analysis unable to give a definite answer concerning possibility of enterprise's bankruptcy, because some indicators are reliable only in usual financial situation, the other – in critical zone. Hence, there is a need for creation of a specific combination of indicators and analysis of the obtained model.

Mathematical Model of financial rating and bankruptcy forecasting, adapted for agricultural enterprises

H. Springate, E. Altman (the USA), R. Leese, R. Taffler, H. Tishow (the Great Britain), M. Holder, Connan (France) and others used the discriminant analysis of financial rating. Function is built on the basis of empirical researches of financial indicators of a great majority of enterprises with different level of stability, and integral index which enables to foresee enterprise's bankruptcy with some degree of accuracy is calculated by means of mathematical and statistical methods. This integral index contains a series of financial coefficients, multiplied by their weight. The limit value of coefficients and their weight, can be determined individually, depending on specificity of business activity of enterprise and macroeconomic situation in the country as well.

The shown models were made for the conditions, different from those in which the Ukrainian enterprises operate. The difference is in the inflation rate, in the phases of business cycle, in tax rate, in the peculiarities of production organization (its fund ~, energy ~, work capacity). So, for their being used by the Ukrainian enterprises, these models should be considerably adjusted. There is no hindrance for it from methodical view. Problems occur in the information base for creation of such model, because in each case characteristic of domestic enterprises – bankrupt has more individual, specific features than common indications which would form the basis for this model.

The use of methodology of multifactor discriminant analysis in the domestic practice is limited enough; that is conditioned by these main factors:
– firstly, inability to make their own discriminant functions because of lack of qualified specialists;
– secondly, lack of money for purchase and adaption of the foreign methods for the domestic conditions;
– thirdly, insufficient level of reliability of indexes, shown in the accounting of enterprise (the problem with double accounting).

The Ukrainian scientists created the two-factor model of calculation of bankruptcy probability for agricultural enterprises, which operate in the terms of economic instability. This model calculated bankruptcy probability with its own value of coefficients. It was assumed that the fact of bankruptcy would be determined by value of the tree indicators:
1) capital turn-over ratio (correlation between current assets and short-term liabilities);

2) financial reliance ratio (correlation between borrowed and invested resources and the total cost of assets);
3) absolute liquidity ratio (correlation between money, its equivalent and sum of payment at a fixed date).

The first index shows financial stability, the second one – financial reliance; both of them describe the quantitative side of factor indication. The third index describes enterprise's capacity to take liabilities and is accepted as an effective indication.

Because of the absence of bankruptcy precedent at that time (1999) in agriculture, a starting point for it was taken at 0.00 level.

It is obvious that under the other equal conditions the higher capital turn-over ratio is, the lower financial reliance ratio is, the less bankruptcy probability is. And on the contrary, enterprise is likely to go bankrupt with low capital turn-over ratio and high financial reliance ratio. If absolute liquidity ratio is equal to zero, enterprise is going to become bankrupt. The situation is getting worse by the fact that it can't be managed to use overdue debts for complying with sanctions. Besides, considerable doubt exists as to possibility of quick and profitable realization of property, represented by worn-out means of production. In this plan the main task of financial service of enterprise should be financial rating and bankruptcy preventing without waiting for reorganization.

The scientists made bankruptcy model, adapted for agricultural enterprises rating on the basis of information about 70 agricultural enterprises of Sumy region with unstable financial indicators. The following formula was obtained as a result of computer processing of original information:

$$Z = -1,3496 - 0,6183R_1 + 0,6867R_2$$

where:

R_1 – capital turn-over ratio,
R_2 – financial reliance ratio.

If $Z = 0$, we have equation of discriminant limit. For enterprises where $Z = 0$, bankruptcy probability is equal to 50%. If $Z < 0$, bankruptcy probability is less than 50% and is coming down along with Z. If $Z > 0$, bankruptcy probability is more that 50% and is increasing along with Z.

In order to check reliability of the proposed model, 15 profitable and 15 loss-making agricultural enterprises of Sumy region were selected and bankruptcy probability was calculated for each enterprise according to these methods. The obtained indexes were compared with the financial results of enterprises' pro-

duction and business activity. It was discovered that there's a direct connection between an increase in the financial reliance ratio and bankruptcy probability and a reverse connection – with an increase in capital turn-over ratio.

So, the main task of bankruptcy forecasting and preventing may be performed by method of discriminant analysis and division of enterprises into two groups: the most probable bankrupts and the enterprises which are able to avoid bankruptcy procedure. With the help of the suggested model one could not only rate financial state of their enterprises, but also make 'express-rating' of financial situation of potential counter-agent. It might promote a reduction in the amount of active debts in the assets debts in the assets of enterprise and in risks of being faced with crisis.

Conclusions

Economic precondition of enterprise's rehabilitation is the arising of crisis situation which has a negative influence on its business activity. In case of delaying or arising of objective inability to overcome crisis phenomena, enterprise's indebtedness is increasing and there is a threat of bankruptcy and liquidation. But timely reacting to appearance of any sings of financial state's changing for the worse, timely financial rating and forecasting, providing financial rehabilitation with regard to ecological ingredient would help enterprise avoid going bankrupt without breaking business cycle. When determining the importance of market mechanisms of economy regulation, we consider that certain branches of economy need the government support, especially the agrarian sector, successful operation of which promotes an increase in provision safety of the country.

Literature

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14

Sanacja finansowa przedsiębiorstw rolniczych

Streszczenie

Badanie dotyczyło teoretycznych i metodologicznych zagadnień sanacji finansowej przedsiębiorstw agrarnych; zaproponowano definicję sanacji finansowej z uwzględnieniem ekologicznej składowej; określono kierunki pomocy publicznej na sanację finansową przedsiębiorstw sektora agrarnego; uzasadniono zastosowanie zmodyfikowanego na potrzeby przedsiębiorstw agrarnych matematycznego modelu diagnozy sytuacji finansowej oraz prognozowania bankructwa. Przeprowadzona analiza stanu sektora agrarnego obwodu sumskiego w latach 2005–2009 umożliwiła oszacowanie udziału przedsiębiorstw rolniczych, który w 2005 roku wynosił 43%, a w 2009 roku – 32,4%. Uzasadniono, że terminowa diagnoza oraz prognozowanie, a także przeprowadzenie sanacji finansowej z uwzględnieniem ekologicznej składowej umożliwi przedsiębiorstwu uniknięcie procedury bankructwa oraz zachowanie cyklu gospodarowania.