Establishment of the differentiated economic mechanism of company bankruptcy prevention as a basic element of sustainable development of rural areas

E V Ternovykh and L V Durova
Voronezh state agrarian university after the Emperor Peter the Great, 1, Michurina str., Voronezh, 394087, Russia
E-mail: evled@yandex.ru

Abstract. The article considers the economic essence, gives a subordination of the concepts of “financial insolvency” and “bankruptcy” of a company, and suggests the definition based on the self-regulating financial system. A criterion matrix of interconnection and identification of the stages of financial insolvency and bankruptcy has been developed and tested, which sets the system of key financial and economic indicators as its basis. A differentiated economic mechanism is proposed to prevent the bankruptcy of agricultural companies, depending on the stage of financial insolvency and bankruptcy. The target and functional orientations are justified in the structure of the differentiated mechanism, that allow effective planning the measures of prevention of the insolvency and bankruptcy of companies in order to ensure long-term sustainable development of agricultural territories.

1. Introduction
Under the conditions of the current economic crisis, numerous financial risks and limitations arising in front of Russian agricultural companies, the latter increasingly often face the problem of insolvency and bankruptcy and, as a result, the issues of developing an adequate mechanism for its prevention are of particular relevance [1]. This matter is particularly important for the long-term sustainable development of agricultural areas. Knowledge and practical use of modern principles and methods for designing this mechanism will ensure its effectiveness in resolving the negative consequences of financial insolvency, overcoming bankruptcy, and thus the coordinated functioning of the self-regulating system of company finances [2].

The performed studies have found that bankruptcy is identified by modern economists through the company’s inability to pay its debts [3, 4]. We have suggested that the sources of insolvency and bankruptcy should be associated with the economic inefficiency of a company. A self-regulating financial system is being formed at each company. The uninterrupted production process, the timeliness of payments to the national budget and extra-budgetary funds, the fulfillment of other obligations, as well as the possibility of accumulating the necessary funds to support current and investment activities and the social sphere depend on the clear and seamless organization of the links of the self-regulating finance system. A financial system of a company operates without disrupting the interrelationships of its units if the efficient economic activity of the company is ensured on the terms of self-sufficiency and self-financing. Accordingly, its financial viability is ensured. In the absence of
the company’s ability of realizing the principles of self-sufficiency and self-financing, it moves to the path of developing financial insolvency and bankruptcy.

On this basis, the concepts of “bankruptcy” and “financial insolvency” of a company are subordinated and the authors’ definition for them is proposed. Financial insolvency is the degree of inefficiency of economic activity, when the generated own financial resources are inadequate for self-sufficiency and self-financing, which causes the imbalance in the financial relations system of a company. A manifestation of this imbalance is the loss of financial stability and the insolvency of the company. In turn, bankruptcy is the extreme degree of financial insolvency, manifested through the imbalance of the links of the self-regulating finance system, when it is unable to carry out economic activities in the regular mode.

The detected interrelationship and interdependence of bankruptcy and financial insolvency allowed us to clarify the stages of their development at a company, and it formed the basis for the design of a differentiated mechanism for their prevention.

2. Results

The empirical base for this research was the materials of agricultural companies of Liskinsky district of Voronezh region dated 2013-2018.

Based on the cumulative results of the theoretical and analytical studies of financial insolvency and bankruptcy of agricultural companies [5-7], we defined and systematized the typical financial and economic indicators to identify the stages of financial insolvency and bankruptcy (Figure 1). In order to design the criterion matrix, the following indicators were selected as the basic ones: economic efficiency (profitability), solvency and liquidity, financial stability (assessed by using a system of absolute indicators based on the availability of stocks and costs with regular sources of their formation) [8-10].

The researches have found that the majority of agricultural companies are at the stage of financial insolvency initiation / hidden bankruptcy or the development of financial insolvency / financial instability.

For instance, the stage of the development of financial insolvency / financial instability is indicated by the following features of the financial and economic conditions. At the initial stage of the transition to this stage an agricultural company may form negligible profits, thus providing extra low production profitability level and assets (at about the level of interest rate for bank deposits). This profit is usually generated in the company due to governmental support (in such a case the positive balance of non-regular activities is typical). The differential characteristic of a company being at this stage is also incidental unprofitability of such company, which, however, remains close to breakeven point.

Despite the fact that the company provides its long-term solvency (determined on the basis of the balance sheet liquidity assessment), systematic current non-payments are observed, the values of liquidity indicators are at the level (concerning the current ratio) and lower (concerning absolute liquidity ratio and quick assets ratio) values than their recommended levels.

The distinctive features of the company’s position at this stage also include lack of working capital, excess of short-term loans over the total of the stock and finished products, negative effect of financial leverage (as a result, borrowing is not profitable for such company, and further increase in the loan volume is extremely dangerously).

The development of financial insolvency / financial instability at the later phase determines the already systemic unprofitability of an agricultural company with pronounced tendency to reduction of the efficiency of statutory activities. The amount of the equity capital is insufficient to ensure the financial independence of the organization, and it has no own working capital. Stocks and costs are compensated by long-term sources of working capital and accounts payable. Due to the permanent illiquidity and insolvency of the company, the amount of overdue debt obligations increases sharply. The financial insolvency of the organization is critical; however, it still remains avoidable.
| Financial insolvency stage                          | Economic efficiency (profitability) | Solvency and liquidity | Financial stability type                                                                 | The bankruptcy stage                                                                 |
|----------------------------------------------------|------------------------------------|------------------------|-----------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Financial solvency                                | Profitable (production profitability level sufficient for self-financing) | Current and long-term solvency, all liquidity ratios are at or higher than the recommended values | Defined based on the indicators of stocks and costs provision by their regular formation sources | Crucial indicators, specifying the financial stability type and simultaneously identifying the financial insolvency stage and the bankruptcy stage |
|                                                   | Profitable (production profitability level sufficient for self-sufficiency) | Long-term solvency, incidental current non-payments, liquidity ratios are below (R_{d,1}, R_{quick,1}) or at / higher level (R_{d,2}) than the recommended values | Absolute stability (SC < WC + STL) | Stable financial situation (absence of the bankruptcy threat) |
|                                                   | break-even point                   | Unstable financial position (acceptable) (SC ≥ WC + STL + SRFS, with PS + FP ≥ STL) | Normal stability (conditionally good financial situation) WC + STL ≤ SC < WC + STL + SRFS | Sufficient provision with working capital at the minimum sufficient level (K_w ≥ 0.1, but <0.5) |
|                                                   | Unprofitability                    | Crisis financial position (with practicable financial restructuring) (SC > WC + STL + SRFS, with SC < LTSWA + AP) | The working capital value is below the minimum acceptable level (K_w < 0.1). Short-term loans do not exceed the total of production stock and finished products. The degree of financial leverage is negative | Hidden bankruptcy stage |
|                                                   | Permanently insolvent              | Permanent insolvency, some payments are settled after more than three months, all liquidity ratios are below the recommended values | Negative value of working capital. Short-term loans exceed the total of production stock and finished products. The degree of financial leverage is negative | Financial instability |
|                                                   | Bankruptcy                         | Crisis financial position (financial restructuring impractical) (SC > WC + STL + SRFS, with SC > LTSWA + AP) | Negative values of working capital and by long-term sources of working assets. There are overdue debts | Obvious bankruptcy |

Figure 1. Criterion matrix of interrelation and identification of the financial insolvency stages and bankruptcy of a company.
The legend for Figure 1: SC – stocks and costs; PS – production stock; FP – finished product; WC – working capital; LTSWA – long-term sources of working assets; STL – short-term loans; SRFS – sources reducing financial strains (Reserve for future expenses and payments + Unearned revenue + Accounts payable (AP) (in date)); Kw.c. – working capital sufficiency coefficient; Rabs.l. – absolute liquidity ratio; Rquick.as. – quick assets ratio; Rw.c. – working capital ratio.

In order of making management decisions on countering and preventing bankruptcy, a bankruptcy prevention mechanism was developed and proposed for use, taking into account the interrelation between the stage of financial insolvency and bankruptcy, the objectives of preventing bankruptcy and financial methods to achieve them, which allows planning the measures to ensure financial solvency.

It is proposed that the economic mechanism for preventing bankruptcy of a company shall be understood as a set of methods, levers, and instruments of influence on the company’s finance system, and through it on the entire production and commercial activity in order to ensure high economic efficiency as a necessary condition for preventing financial insolvency.

The model of the economic mechanism to prevent bankruptcy of a company is presented in Figure 2. The model of the economic mechanism to prevent bankruptcy of a company includes four parts. The first part of the model reflects the stage of financial insolvency and bankruptcy of an agricultural company based on the assessment of economic efficiency, financial stability, solvency, and liquidity. The second part is devoted to setting the objectives of preventing / overcoming financial insolvency and bankruptcy, corresponding to the stage of crisis development of the agricultural company. The third part reflects means and measures to achieve the objectives of preventing / overcoming financial insolvency and bankruptcy. The fourth part shows the possible expected results of the implementation of the mechanism of preventing the bankruptcy of an agricultural company.

After testing the management decisions through the example of agricultural companies of Liskinsky district of Voronezh region that are at the stage of developing financial insolvency / financial instability, we proposed the adequate financial methods to influence the self-regulating system of company’s finance.

The studies have shown that the financial recovery plan in this case should include not only the development of measures aimed at ensuring solvency, improving liquidity, increasing its technical creditworthiness, but also eliminating unprofitability and ensuring profitability through technological improvement of production and commercial activities, including use of innovation, closure of unprofitable branches, perhaps even the conversion of production, the restructuring of accumulated debts.

Thus, in relation to this stage, the company recovery plan, implemented as part of the economic mechanism of bankruptcy prevention, will have an important financial, and, possibly, organizational and technological aspect.

The functional orientation of the mechanism of insolvency and bankruptcy prevention in the practice of agricultural companies is implemented using certain methods. Let us dwell on some of them in a little more detail.

It is found that it is advisable to use the following financial methods for the elimination of unprofitability of production and commercial activities of agricultural companies.

It is necessary to ensure development for the coming year with breakdown by quarters and months, of the plans for expenses, incomes and financial results using effective methods: margin analysis, economic and mathematical modeling, technical and economic calculations, etc. It is important, based on the marginal analysis methodology, to plan the breakeven point, which would ensure coverage of all costs for the production and sale of products and, thus, avoid the formation of losses.

If certain types of agricultural products are unprofitable based on marginal analysis, it is necessary to evaluate the possibility of their preservation in the assortment or, on the contrary, exclusion from it, by the criterion of marginal profitability, as well as based on their share in the total marginal income. For example, it is advisable to identify and justify the possibilities of expanding the acreage for profitable crops and, on the contrary, reducing the share of insufficiently effective / unprofitable crops, etc.
I. Stages of financial insolvency and bankruptcy of companies, their typical financial and economic features

| Financial solvency / Stable financial situation | Financial insolvency initiation / Hidden bankruptcy | Financial insolvency development / Financial instability | Financial insolvency / Obvious bankruptcy |
|------------------------------------------------|--------------------------------------------------|------------------------------------------------------|------------------------------------------|
| Solvent, liquid, financially independent, profitable company. The parameters are high and stable | Solvent, liquid, financially independent, profitable company. It has imbalance between own and credit sources, desynchronization between solvency and financial stability. The parameters are moderate of close to insolvency and bankruptcy | Insolvent, liquid, financially dependent, profitable or unprofitable company. The minimum reserve of total liquidity still remains, profitability is extra low or already in the unprofitable interval. The parameters are extremely low or correspond the insolvency and bankruptcy | Insolvent, illiquid, financially dependent, unprofitable company. The parameters completely correspond the insolvency and bankruptcy |

II. Target orientation of the economic mechanism of company bankruptcy prevention

| Preparation for insolvency and bankruptcy | Impeding insolvency and bankruptcy or preparation for insolvency and bankruptcy | Overcoming insolvency and bankruptcy or impeding insolvency and bankruptcy | Crisis recovery |

III. Functional orientation of the economic mechanism of company bankruptcy prevention

| Synchronizing the cash-flow (income and outcome) in terms of periods and amounts. Optimizing the cash balance. Maintaining profitability at the level sufficient for self-financing | Profitability growth up to the level sufficient for self-sufficiency. Growth of own working capital. Reduction of financial dependence. Growth of current liquidity or Synchronizing the cash-flow (income and outcome) in terms of periods and amounts. Optimizing the cash balance. Maintaining profitability at the level sufficient for self-sufficiency and higher | Loss liquidation. Recovery of the lost own working capital. Elimination of financial dependence or Profitability growth. Replenishment of the own working capital. Reduction of financial dependence. Growth of current liquidity | Prevent bankruptcy proceedings |

IV. Expected results of the implementation of the economic mechanism of company bankruptcy prevention

| Financial solvency / Stable financial situation | Financial solvency / Stable financial situation | Financial insolvency initiation / Hidden bankruptcy | Financial insolvency development / Financial instability |

**Figure 2.** The model of the economic mechanism of company bankruptcy prevention.

To replenish the lost own working capital and eliminate the financial dependence of the company, it is necessary to ensure effective capital management. It should be focused on increasing equity capital (and, above all, working capital), on the one hand, and reducing borrowed and attracted capital, on the other. To achieve these goals, it is important to prevent the founders leaving the company,
paying the actual value of the stake, paying dividends, receiving or issuing loans (credits), issuing guarantees, as this will further aggravate the unstable financial condition of the company.

In order to ensure solvency, it is advisable to provide for the payment of shares in the registered capital in cash, excluding payment for securities, other material values or property rights, or other rights having monetary value, since creditors’ claims are satisfied only in monetary form.

It should be noted that companies have limited opportunities to increase their registered capital, therefore, the more important task at this stage is eliminating their financial dependence on creditors by reducing liabilities

The methods of reducing the company obligations include obtaining various kinds of concessions from creditors. Instead of concessions, a company may offer new forms of debt agreements that are more attractive to creditors from the standpoint of increasing the likelihood of debt repayments, or one of the forms of exchanging debts for the company’s assets (finished goods, inventories, fixed assets, non-productive assets, etc.), desirable in the activity of creditors or such as cannot be sold at a reasonable price by the company itself.

In order to prevent overdue payments, companies should develop payment calendars for both individual types of cash flow and for the company as a whole, payment calendars for payments to suppliers, payment calendars for debt service, etc.

However, practical experience shows that settlement of the accumulated debts does not guarantee the repetition of insolvency cases in the future. The long-term and current solvency of the company is ensured by the steady formation of a positive balance of not only cash but also financial flows. Therefore, the primary important task is to take effective anti-crisis measures to neutralize existing losses and prevent the formation of new ones. In addition, it is advisable to ensure a proper distribution of profits, directing its necessary part to the formation of its own working capital.

At the stage “development of financial insolvency / financial instability” in parallel with the replenishment of own working capital, it is also necessary to carry out a number of measures aimed at assets optimization. First of all, non-current assets should be optimized as the least liquid. An agricultural company, for example, may sell part of the property: real estate, including unused process and other buildings, agricultural and other machinery and equipment, vehicles, inventory, lease rights for the land plot belonging to the company, etc. However, such sale of property should not lead to the impossibility of the company carrying out its economic activities.

In turn, the optimization of the current assets of an agricultural company involves the implementation of the following financial and economic measures. It is advisable to consider the possibility of selling unused inventory. It is necessary to form the current need for production current assets of the company to the amount of recommended scientifically grounded standards ensuring the continuity of the production and commercial cycle. Along with rating, such modern and effective methods as the “economically reasonable order size” model, the “ABC” model, etc. can be applied.

The expected result of the implementation of all measures at the stage “development of financial insolvency / financial instability” is the financial recovery of the company and its transition to a more prosperous stage - “initiation of financial insolvency / hidden bankruptcy”.

3. Conclusion
So, the proposed interpretation of the essence of the category “financial inconsistency” and “bankruptcy” of a company, the expansion of the possibility and quality of diagnosing its staging on this basis, will allow:

Firstly, to develop an economic mechanism for preventing bankruptcy of agricultural companies differentiated depending on the stage of financial insolvency;

Secondly, to justify the target and functional orientation in the structure of the differentiated mechanism allowing coordination of the objectives of bankruptcy prevention and financial methods to achieve them;
Thirdly, in order to ensure the long-term sustainable development of agricultural areas it is necessary to form the basis for effective planning of measures of company insolvency and bankruptcy prevention.

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