Azhar Z. Nurmagambetova[1]
METHOD OF EXPRESS-ANALYSIS AND FORECASTING OF FINANCIAL STATUS OF A BORROWER BY A COMMERCIAL BANK

The analysis and evaluation of solvency of an organization-borrower by a commercial bank is carried out on the basis of the system of financial ratios. A research objective was to develop a method for solvency evaluation of an organization to enable the express-analysis of solvency. This would allow making a principle decision towards the feasibility of granting a loan to an organization, especially under the conditions of further economy transformation, as in Kazakhstan.

Keywords: solvency of a borrower; financial analysis; coverage ratio; refinancing rate; commercial bank.

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МЕТОД ЕКСПРЕС-АНАЛІЗУ ТА ПРОГНОЗУВАННЯ ФІНАНСОВОГО СТАНУ ПОЗИЧАЛЬНИКА КОМЕРЦІЙНИМ БАНКОМ

У статті показано, що аналіз та оцінювання комерційним банком платоспроможності організації-позичальника здійснюється на основі системи фінансових коефіцієнтів. Для цього розроблено метод оцінювання платоспроможності організації для надання можливості провести експрес-аналіз платоспроможності. Такий результат дозволяє прийняти принципове рішення щодо можливості надання кредиту для організації в умовах трансформації економіки на прикладі Казахстану.

Ключові слова: платоспроможність позичальника; фінансовий аналіз; коефіцієнт покриття; ставка рефінансування; комерційний банк.

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МЕТОД ЭКСПРЕСС-АНАЛИЗА И ПРОГНОЗИРОВАНИЯ ФИНАНСОВОГО СОСТОЯНИЯ ЗАЕМЩИКА КОММЕРЧЕСКИМ БАНКОМ

В статье показано, что анализ и оценка коммерческим банком платежеспособности организации-заемщика осуществляется на основе системы финансовых коэффициентов. Для этого разработан метод оценки платежеспособности организации, чтобы дать возможность провести экспресс-анализ платежеспособности с конкретным результатом. Такой результат позволяет принять принципиальное решение в отношении возможности предоставления кредита для организации в условиях трансформации экономики на примере Казахстана.

Ключевые слова: платежеспособность заемщика; финансовый анализ; коэффициент покрытия; ставка рефинансирования; коммерческий банк.

Introduction. The notion of "solvency" could be defined as a presumed ability to meet the agreed deadlines related to repaying credit and interest accrued without affecting the vitality of a borrower, i.e. the repayment process should be based on the income received in the process of borrower's usual activity, without affecting adversely its financial status, financial outcomes, as well as other business entities.

Solvency analysis involves the preliminary study of factors and prerequisites which can affect adversely the duly repayment of credit (Stoyanov, 2008: 43). It is of

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high importance that bank specialists demonstrate competence and conscientiousness. Banks have at their disposal various ways for choosing suitable borrowers to be financed and for exercising control over the special purpose of credit resources and their expedient and efficient spending.

The indepth study of the financial status of a loan applicant does not harm good relations between him and a bank. Establishing firm grounds for credit relations is seen as an inherent characteristic element of any credit activity. The study of financial situation, carried out by qualified and experienced bank experts, may disclose a number of shortcomings which until that moment have been unknown to administrative and managerial staff and in this way the study can turn out to be extremely useful for the loan applicant too (Feschijan, 2008: 274).

Credit business of tier two banks in difficult economic situation is complicated due to the lack of a proven method for solvency evaluation of organizations, insufficiency of information base required for adequate analysis of the financial status of an organization which applied to a bank for a loan.

Latest research and publications analysis. A number of local authors such as A. Chelek-bay et al. (2004), K. Dyusembayev and B. Satenov (2002), R. Kamshibayev (1991), S. Myrzhakypova (2007) and others have devoted their works to solvency analysis based on financial status of organizations.

Moreover, the problems of financial condition of an organization as the basis for analysis of solvency have been discussed in the works of such foreign specialists as J. Bannister (2000), J. Ciby (2013), M. Glautier and B. Underdown (2000), D. Land (2004), A. Sandstrom (2010), and others.

Also, in the process of our analysis, works and methodological developments in the field of financial analysis have been studied. Among them are such Russian authors as V. Edronova and E. Mizikovskiy (1996), M. Kreinina (1994), I. Lavrushin (2006), A. Sheremet and E. Negashev (2008) etc.

Despite a large number of scientists and experts who work in this area, there are a lot of **unrecolved issues**. One of them is the assessment of solvency by a potential borrower of the commercial bank and the evaluation of borrower's creditworthiness on the basis of financial ratios.

The purpose of the study is to improve methodological aspects of solvency analysis under volatile market conditions in order to minimize credit risks of tier two banks. Moreover, we are going to show the practical example of these methodology at financial materials of the LLP "Jalyn"[2].

Key research findings. Addressing solvency analysis at the present stage of the credit market development in Kazakhstan is of great interest for banks. Today this problem is especially acute: economic difficulties seriously affect banks activities. At the moment the situation in banking is as follows: after 3 years of decline of the lending market in Kazakhstan positive activity has begun since the beginning of the last year. Still in 2010 a fall was recorded in the rate of granting loans which constituted 9.2%. In 2011 credit activity has been fully restored − the volume of loans grew by 52.2%, while the total loans reached 5.8 trln KZT[3] (Annual report of the National

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[2] As an example, we are going to use the financial data of LLP "Jalyn", which is an active borrower.
[3] Equal to 37 bln USD.

Bank of the Republic of Kazakhstan for the Year, 2011). Statistics of 2012 is also quite positive. In July, the National Bank of Kazakhstan published the data showing that the total amount of loans granted by banks to domestic economy, increased from the beginning of the year by 5.4% and equaled 9289.3 bln KZT (Statistical bulletin of the National Bank of Kazakhstan, 2012).

According to the Committee for Financial Supervision, by the end of 2011 doubtful and loss loans in categories 4 and 5 have constituted 40% of the total loans (Annual report of the the Agency of the Republic of Kazakhstan on Regulation and Supervision of Financial Market and Financial Institutions, 2011).

A. Chelekbay, N. Khamitov and S. Rakhmankulov consider that creditworthiness of a borrower as "the ability of the entity (corporate or individual) to pay off its debts in whole or in time in accordance with the conditions of loan agreement. In assessing creditworthiness it is taken into account credit history and reputation of the borrower, presence and composition of its assets, the state of economy and market conditions, the stability of financial condition and other indicators of company's activities" (Chelekbay et al., 2004: 14).

E. Stoyanov (2004: 141) and other Russian scientists point out that "high creditworthiness is the worthy ability to recover loans along with interest and other financial costs". Goals and objectives of credit analysis, according to V. Kolesnikov and L. Krolivetskaya (2006: 313), are to determine the ability to repay loans timely and fully, the degree of risk that a bank is ready to take over, the size of a loan, which may be granted under the circumstances, and, finally, the conditions of its granting. A similar definition was given by O. Lavrushin (2006: 374), who considers that "creditworthiness of the borrower means the ability of the borrower to repay timely its liabilities (principal and interest). Creditworthiness of the borrower, in contrast to the ability to pay does not record defaults in the past period or on a date, and predicts the ability to pay debt in near future".

According to A. Tavasieva (2006: 442): "when assessing the creditworthiness of the borrower the bank tries to find answers to two fundamental questions: 1) how to assess borrower's solvency in future? That is, to make sure whether the borrower is able to meet its financial obligations under the loan at the time of expiry of a loan agreement; 2) how to estimate to what extent the borrower is ready to fulfill above obligations, i.e. whether he wants to repay debts? Can you trust him?".

O. Yoshiaki (2010) shows that a bank is just ready to reduce interest rates in order to get access to customers' private information.

In our study, it is proposed that the method of express-analysis and forecasting of financial status of an organization on the basis of theoretical justification and application of the limited number of financial ratios. For analysis of creditworthiness it is proposed to use a system of financial ratios. Such system includes 3 indicators:

1) general coverage ratio;
2) ratio of debt to equity;
3) rate of provision from current assets.

The content and emphasis of financial analysis of an organization depends on the purpose for which such analysis is carried out (Sheremet and Saifullin, 2000: 211). General coverage ratio shows the sufficiency of short-term assets in an organization that can be used by it to pay off short-term liabilities. The coverage ratio is actually the

only indicator which allows sufficient judgement whether the organization is able to pay its current liabilities (Savitskaya, 2000: 198). Standard level of this ratio is in the range of no less than 1—1.5. lower bound is due to the fact that short-term assets of the organization should be sufficient to cover current liabilities. The excess of current assets over current liabilities by more than twice is also considered undesirable because of irrational placing by the organization of its resources and inefficient their use.

The ratio of debt to equity shows how much debt the organization attracted to 1 KZT invested in equity assets; characterizes the financial stability of the organization. The ratio of debt to equity is calculated as the ratio of all liabilities of the organization (credits, loans and accounts payable) to equity (own capital).

The ratio of debt and equity funds of the organization should be maintained at the level lower than 0.7. The excess of specified limits means dependence of the organization on external financing, the possibility of financial stability (autonomy) loss. The minimum value of the index tends to zero in the cases when an organization is funded entirely from its own funds which increase the guarantee of its obligations repayment.

The rate of provision from current assets shows how reserves are funded from sources of equity; characterizes the financial stability of an organization. The rate of provision from current assets is calculated as the ratio of reserves to equity, less the organization's long-term assets.

For relatively raw material intensive organizations the optimal variant of the coefficient is the one which is close to 1. If the coefficient is greater than one, then the organization has no internal funds to finance inventories, if the ratio is less than 1, it is an obvious surplus of own funds invested in current assets and we can say that own funds of the organization are used inefficiently (they finance receivables, therefore, foreign current assets).

After the calculation of actual values of proposed financial ratios, they should be compared with the standard values. Usually in practice the standard value is taken as constant for all organizations. However, the feature of the proposed methodological approach to assessing creditworthiness of an organization is to compare the actual values to their normal values, derived specifically for the organization being assessed by special methods presented in this study.

Let's consider the order of calculation for normal values of coefficients in the proposed system for determining creditworthiness.

Calculation of the normal level of total coverage ratio is as follows: material cost item should be released from production cost and divided by the number of days in the period. By this we obtain the value of material costs of the organization per day. Next, we proceed from the assumption that short-term assets can be defined as short-term liabilities plus current assets in financing them at the expense of equity. By calculating the ratio of suitable short-term assets of the organization to short-term liabilities we obtain the general coefficient of coverage, the normal figure for the organization.

$$K1 = STA / STL \text{ by definition;} \qquad (1)$$

$$STA + LTA = STL + E \text{ as one of the balance equations;} \qquad (2)$$

$$STA = STL + E - LTA, \qquad (3)$$

where *STA* are short-term assets; *STL* — short-term liabilities; *E* — equity; *LTA* — long-term assets; *E − LTA* — current assets financed by equity.

The example of calculation of liquidity is presented in Table 1.

Table 1. **Calculation of coverage ratio**

Indicator	At the beginning of the period	At the end of the period
1. Actual coverage rate (on balance sheet)	1.507	1.804
2. Normal level of coverage rate (calculated)	1.007	1.005
3. Solvency level (page 1/ page 2), %	149.61	179.42
4. Regulatory level (by)	2.00	2.00

Developed on the basis of the actual data of the LLP "Jalyn".

Ideally, when at the expense of own capital the organization's finances short−term assets, particularly, in the part of stock of materials. Consequently, *E − LTA* = stock materials, financed at the expense of equity.

For calculation of the normal level of *K1* we believe that an organization must maintain a reasonable amount of material assets.

Short-term assets should be adjusted to the amount of bad debts.

Then, $$STA − BD = STL + RMA, \tag{4}$$

where *BD* — bad debts; *RMA* — reasonable amount of material assets; *STA = STL + BD + RMA*.

$$K1norm = (STL + BD + RMA) / STL. \tag{5}$$

From the calculation we have the following: *STA = STL + RMA*.

On the other hand, *STA = STL + E − LTA*, *E − LTA* = current assets, financed by equity => Normal ratio is calculated as the value of reasonable amount of material assets covered by equity to the actual amount of reserves.

$$K3 = MR / (OF − LTA) \text{ by determination,} \tag{6}$$

where *MR* — material reserves.

Then, $$K3norm = MR / RMA. \tag{7}$$

Rather sophisticated calculation is given for use in the calculation of the value of current capital to cover necessary reserves. In particular, for the following calculation we use the current assets indicator, calculated in Table 2 to cover the organization's material assets:

$$CA \text{ for reserves in } \% = MR / [1 + (RMA − MR) / MR], \tag{8}$$

where *CA for reserves in %* — current assets to cover required reserves, in %.

Table 2. **Calculation of the rate of coverage by current assets**

Indicator	At the beginning of the period	At the end of the period
1. Actual rate of coverage by current assets (on balance sheet)	0.577	0.738
2. Normal rate of coverage by current assets (as calculated)	0.990	0.990
3. The ratio of actual coefficient to normal coefficient (p. 1 / p. 2), %	58.24	74.54

Developed on the basis of the actual data of the LLP "Jalyn".

In calculation of the normal level of the ratio of the debt to equity we assume that, ideally, own funds should be used by the organization for making long-term

assets, and partially be financed for current assets formation in the part of covering material costs.

$$K2 = Borrowed\ Funds\,(BF)/OF, \tag{9}$$

On the other hand, OF = current assets financed by equity + LTA. In a normal situation current assets financed by equity = Working Capital (WC) for 3, then

$$OF\ in\ \% = WC\ for\ 3\ in\ \% + LTA\ in\ \%. \tag{10}$$

The value of assets = $OF + BF$ by definition.

If the value of assets is 100%, then 100 = OF in % + BF in %, hence BF in % = 100 − OF in %.

$$K2\ norm = (100\ -\ OF\ in\ \%)\ /\ OF\ in\ \%. \tag{11}$$

Thus, the actual values of indices, calculated by known methods, are compared with normal values. The calculation is presented in this study. On the basis deviations the conclusion on creditworthiness of the organization is made (Table 3).

Table 3. **Calculation of the financial stability of the organization**

Indicator	At the beginning of the year	At the end of the year
1. Actual ratio of debt to equity (on balance sheet)	0.857	0.646
2. Normal ratio of debt to equity (as calculated)	0.416	0.398
3. Rate of normal coefficient to actual coefficient (page 2 / page 1), %	48.54	61.61

Developed on the basis of the actual data of the LLP "Jalyn".

Next, a bank can improve the approach to credit rating, giving each indicator a weight depending on the industry sector of the organization being assessed and performance grading on the category of borrowers (or classes).

Another important aspect in determining whether to issue a loan is organization profitability (Sheremet and Saifullin, 2000: 194).

If there is profit, and the losses of the previous years are completely covered, we propose to calculate the effect of financial leverage in order to determine whether it is reasonable from the economic efficiency perspective to grant a loan to the organization.

Thus, the inclusion into the methodology of assessing creditworthiness of the principle of economic feasibility is a necessary element of the proposed approach and this is reflected in the methodological decision on the estimation of the effect of financial leverage.

Under current conditions, only those organizations, with the levels of return on assets higher than the refinancing rate, have a chance to receive additional benefits from bank loans. Otherwise, the use of paid debt leads to further deterioration of the financial condition of the organization and the waste of their resources (Selezneva and Ionova, 2001: 52−53). Another component of the financial leverage effect takes into account the structure of own funds and debts and characterizes the strength of the impact of financial leverage. This is called shoulder leverage. There is a false impression that the higher organization's debts are and the higher is the shoulder leverage, the greater is the effect of financial leverage. However, with a negative differential, the effect of financial leverage is negative. So it is reasonable not to increase financial leverage, and adjust it according to the differential (Stanislavchik, 2004:

39—40). Let's consider the calculation of the effect of financial leverage on the example (Table 4).

Table 4. **Calculation of the financial leverage effect**

Indicator	Unit	Value
1. Borrowings net of payables	ths KZT	5213.0
2. Own funds	ths KZT	61689.0
3. Shoulder leverage (page1 / page2)		0.085
4. Balance profit	ths KZT	8818.0
5. Interests on loans for the analyzed period	ths KZT	266.7
6. Asset balance net of payables	ths KZT	66902.0
7. Economic profitability (page 4 + page 5) / page 6	%	13.58
8. Average estimated interest rate (page 5 / page 1)	%	5.12
9. Differential (page 7 – page 8)	%	8.46
10. Income tax rate		0.3
11. Leverage effect ((1 – page 10) x page 9 x page 3)		0.5034

Developed on the basis of the actual data of the LLP "Jalyn".

Based on the factors specified in Table 4, we can draw a conclusion on feasibility of granting a loan to the analyzed organization. These are theoretical concepts and methodological solutions, underlying the methodology of credit assessment of an organization. Below is given a description of practical application of the method.

$$DFL = (1 - rate\ of\ corporate\ tax) \times (ROA - EARI) \times BF/OF, \qquad (12)$$

where *DFL* — degree of financial leverage; *ROA* — return on assets; *EARI* — the estimated average rate of interest.

The initial data are the financial statements of the organization: the balance sheet and profit and loss report, as well as additional data required for calculation. These are the following indicators:

1. Material costs, in monetary terms. These are organization's costs for raw materials, purchased semi-finished products, fuel, container and spare parts.

2. Uncollectible accounts receivable in monetary terms. It involves organization assessment, according to the financial account, the quality of its receivables and separation of the amount of overdue uncollectible receivable.

3. Stocked in days. Necessary transport, preparation, running and safety stock in days. This takes into account the number of days required for the organization during the period of raw materials transportation, manufacturing process for their preparation and direct production cycle, as well as for making reserves in case of emergency.

After this, the method provides a comparison of actual and normal values of financial ratios presented in tabular form, as well as the estimation of normal values of the coefficients for the organization. In conclusion, it is assumed the calculation of the effect of financial leverage and the presentation of results as given in Table 5.

Table 5. **Main financial indicators by the end of the financial period**

Indicator	Actual	Normal level
1. Coverage ratio	1.804	1.005
2. Ratio of coverage by current assets	0.738	0.990
3. Leverage ratio	0.646	0.398

Developed on the basis of the actual data of the LLP "Jalyn".

If collection of reliable data for calculation of normal levels of performance or for making some normative values, which are differentiated across sectors and

regions, in coefficients analysis is difficult, it is recommended not only to compare the estimates with formal criteria, but to assess development trends of the organization, i.e. review these estimates in dynamics.

For making a final decision on a loan organization attractiveness should be assessed in terms of profitability degree for a bank, i.e. consider not only the field of lending, but other alternatives, such as cash management, foreign exchange, working with securities and etc.

According to the results of study the following **conclusions and recommendations** were made. Based on the analysis of the existing methodologies for assessing creditworthiness of organizations, a method was proposed founded on the theoretically proved choice of criteria for evaluation. The system of financial ratios includes 3 indicators:

- general coverage ratio;
- leverage ratio;
- ratio of coverage by current assets.

Limitation of the number of the estimated coefficients is due to the lack of a bank need to conduct a detailed financial analysis.

On the other hand, the choice of each of these indices is justified from theoretical positions and due to close link of studied coefficients with the concept of creditworthiness of the organization. The paper presents the concept of the effect of financial leverage and recommends to calculate the effect of financial leverage in making a final judgment on organization creditworthiness.

The advantages of the proposed approach are as follows:

- non-traditional solution to the problem of comparative levels of estimates;
- accounting of economic feasibility of granting loans to organizations.

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