

Efficiency of the Construction Branch Enterprises in the Conditions of Market Economy Restrictions

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Abstract: Research is devoted to questions of increase in activity efficiency of the enterprises by use optimization of the available resources. Market conditions staticize problems of increase in efficiency of financial resources use of the enterprises, increases in efficiency of realization of production function limited financial resources of the enterprises of the construction sphere. Special attention is paid to identification and influence assessment of various financial resources on amount of completed work by the form of activity “construction”. On the basis of creating the economical and statistical model characterizing influence of separate factors on amount of works by the form of activity “construction” the prevailing extent of influence of accounts payable as a part of financial resources is defined on a productive indicator of amount of works by the form of activity “construction” in the Saratov region.

Key words: Efficiency, financial resources, amount of works, construction, investments, receivables, accounts payable, optimization, economical and statistical model

INTRODUCTION

To problem of activity assessment efficiency of the enterprises for the last decades it is paid much attention as the matter has great practical value for a growth in prosperity of the economic agents functioning in all sectors of economy. Recently, in connection with the global financial crisis and instability of external enterprise environment the attention is focused on use optimization of the available resources for increase in efficiency of business.

Efficiency is multidimensional and still has no standard interpretation that speaks, including various approaches to strategy and tactics of business based on aspiration to the maximum growth of welfare of subjects of economy on the basis of effective use of limited resources.

Technical or operational efficiency (operational efficiency) (Debreu, 1951; Farrell, 1957) reflects a possibility of maximizing profit of the organization of the production capabilities which are rather available for it. Efficiency of distribution allocative efficiency (allocative efficiency) (Debreu, 1951; Farrell, 1957), shows ability to use in an optimum combination resources, in view of the applied production technology and their relative price, for the purpose of the maximum satisfaction of the existing demand. Allocative efficiency reflects, how effectively the organization buys and places resources and technical

efficiency defines as far as these resources the organization effectively uses. In total they make economic efficiency (Kumbhakar and Lovell, 2000).

H-efficiency considers conditions when resources are not redistributed in system and the set set of resources is used for production (Leibenstein, 1966, 1978). It does not consider a possibility of the best use of these resources in other spheres of action. As we understand a situation when the expenses suffered by the company exceed the expenses minimum necessary for maintenance of production volume at the current level. Thus, activity efficiency of the organization is connected with optimum formation and use of the available resources.

The created concept of ERP (English Enterprise Resource Planning, planning of resources of the enterprise) consists in integration of production and operations, managements of a manpower, financial management and management of assets, focused on continuous balancing and optimization of resources of the enterprise, on the basis of use of information technologies

Focusing attention on operational efficiency, i.e., the efficiency of use of the available resources in the conditions of their restrictions generated, including crisis economy and inexpediency of accumulation of resource potential, it is important to define what change from the available resources is the most optimum.

In the conditions of crisis sharply there is a question of optimization of different types of resources of the organization: labor, material, financial, etc. Non-payments turned into one of the most important and most complex problems of the modern Russian economy. In these conditions the importance of financial resources by means of which formation of optimum structure and accumulation of production capacity of the enterprises and also financing of the current economic activity is carried out increases. Quality and quantity of the capital used by economic entity, an optimality of its structure and its transformation in the fixed and revolving funds define financial wellbeing of the enterprise and efficiency of its activity.

Traditionally efficiency of financial resources use of the organization, along with other types of resources, is estimated by comparison of quantity and quality of resources to quantity and quality of the results received from their use. The purpose of assessment of efficiency of financial resources use of the organization consists in increase in efficiency of its work on the basis of introduction of more perfect ways of management of financial resources.

First of all, financial resources are an instrument for ensuring of production of the organization, a factor of its production. This statement is based that a main objective of the enterprise production of material benefits for satisfaction of details of people. Proceeding from it, one may say, that the main function of financial resources is production function. In this case the rational decision will be necessary ensuring reproduction process with financial resources of all stages and here it is about various financial resources. This function is the most priority of all others and it is caused by the fact that receipt of own financial resources and, so both rates and efficiency of economic development of the enterprise in many respects depends on efficiency and a continuity of production activity of the organization.

Financial resources it is always the money intended for formation of assets necessary for it for implementation of all kinds of activity as at the expense of own income, accumulation and the capital and at the expense of various type of the receipts necessary for implementation of financial liabilities of the enterprise and financing of the current expenses. Therefore, the embodiment of financial resources at the enterprise is own and loan capital. In this regard in the conditions of market economy financiers operate more often with the concept "capital".

In the theory of financial management there is a number of the theoretical concepts reflecting various approaches to optimization of structure of the capital: the traditionalist concept (cost of equity is always higher than the cost of the loan capital; the concept of indifference (it is impossible to optimize structure of the capital by

criterion of minimization of the average cost of the capital, by criterion of maximizing market value of the organization since the structure of the capital does not exert impact on formation of these indicators (Modigliani and Miller, 1958, 1963); the compromise concept (the choice of optimum structure of the capital as a compromise between benefits and losses of loan financing (Myers, 2001); the concept of a contradiction of interests (alignment of distinction of interests and level of knowledge of owners, investors, creditors and managers in process of management of efficiency of its use, causes increase in cost of separate elements of structure of the capital (Gordon, 1959; Jensen and Meckling, 1976; Masulis, 1980, 1983), etc.

Modern theories of structure of the capital form rather extensive methodical tools of its optimization at each concrete enterprise. Act as the main criteria of such optimization: the acceptable level of profitability and risk in activity of the enterprise; minimization of the average cost of the capital of the enterprise; maximizing market value of the enterprise.

The priority of concrete criteria of optimization of structure of the capital defines the enterprise independently. Proceeding from it, it is possible to draw a conclusion: there is no uniform optimum structure of the capital not only for the different enterprises, but even for one enterprise at different stages of its development. Process of optimization assumes establishment of target structure of the capital, i.e., a ratio of sources of formation of the capital of the enterprise which allows to provide achievement of the chosen criterion of optimization fully.

Construction branch one of the most dynamic, perspective subjects of the market of which nearly 6% of GDP of the country are the share. The quantitative statistics of Rosstat monthly fixes decrease in amount of works, executed by the form activity "Construction", by the corresponding period of previous year >2 year (26 months in a row). It is possible to refer considerable decrease in such industrial index as the average level of utilization of capacity to the negative moments of the I quarter 2016. By results of poll its value made 61% that is lower than assessment of the last quarter on 4 pct. At the same time 11% of the organizations had loading level no >30%. The greatest share (26%) of the construction organizations used from 51-60% of capacities. Under pressure of the developed production environment at the beginning of 2016 in branch negative dynamics of estimates of such financial performance of activity of the construction organizations as own financial resources, profit, credit and borrowed funds, investment activity proceeded. As for housing construction, the decrease in the real located monetary income of the population continuing sixteen months in a row, including the real salaries became extremely negative moment.

In these conditions urgent is an efficiency of realization of production function limited financial resources of the enterprises of the construction sphere and optimization of the capital of such enterprises and organizations. Such domestic and Foreign authors as the I.A. Form deal with problems of optimization of the capital of the enterprises., Y. Brighem, T.V. Head, R.V. Rozanov, S.V. Sagova, L.K. Saenko, M. Serov, M. Erhard, etc.

Now there is a set of methodical approaches to the solution of problems of optimization financially of resources (capital) of the construction organizations. First, it is optimization of sources of formation of financial resources of the enterprise on the basis of financial leverage that allows to realize one of the main tasks of formation of the capital optimization of structure of the capital taking into account the set level of its profitability and risk (Golovko, 2002).

Secondly, it is optimization of financial resources (capital) in system of strategic tax controlling as in the conditions of the existing system of the taxation unrealized potential a source of increase in own financial resources of the enterprise takes place (Fomina, 2007; Rozanov, 2009).

Thirdly, it is a technique of optimization of financial resources (capital) which main scientific idea is diversification of the available assets of the organization with primary investment of capital in profitable.

Fourthly, it is the optimization of structure of financial resources (capital) of the organization based on the analysis of coefficients: profitability of own capital; economic profitability; capitalization (financial leverage); level of financial risk; indicator "profitability risk"; speeds of return of the invested capital (payback period), etc.

The research of the existing approaches on a problem of optimization of financial resources allows to draw a conclusion that there are no universal criteria. Approach to each enterprise has to be individual and consider both branch specifics of business and a stage of development of the enterprise. However, in works of domestic and foreign researchers the insufficient attention is paid to application of economical and statistical methods of optimization of structure of financial resources of the enterprises and organizations which are carrying out activity in the sphere of construction.

In the conditions of modern economy of restriction of accumulation of resource financial capacity of the enterprises of construction branch demand optimization of the capital by criterion of its influence on the volume of construction works. Such direction of optimization will lead to relative reduction of expenses, maximizing arrived and as a result, to increase in efficiency of the functioning capital.

In this regard in work it is offered to investigate activity with use of tools of economical and statistical modeling influence of financial resources of the enterprises and organizations which are carrying out activity in the sphere of construction on amount of works by the form "construction" and to define reserves of increase in economic efficiency of production activity of the construction organizations of the Saratov region.

MATERIALS AND METHODS

Information, system of indicators and methods of justification of administrative decisions in general act as instruments of management at the enterprises, in branches, economy sectors, kinds of activity, in regions and the state. They allow to optimize administrative activity and, therefore, to improve management of difficult social and economic systems including in the sphere of functioning of the construction enterprises and organizations.

For identification of interrelations and regularities of development of a kind of activity "construction" it is possible to use the parameters of economic models and other statistical characteristics received as a result of the multiple-factor correlation and regression analysis.

Based on allocation of the main thing and abstraction from minor, the method of economical and statistical modeling allows to determine the main consistent patterns of development on the basis of the available primary information. It gives the chance of receiving such conclusions which it is impossible to receive by traditional methods of statistical processing of initial information (Sidorova, 2002). The economical and statistical model has to meet the following requirements:

- To be rather abstract to allow a variation big but not excessive number of variables
- To meet the conditions limiting time of the solution of objectives
- The possibility of its realization has to be carried out by means of modern computer facilities
- To provide useful information on the studied problem
- A possibility of check of importance of the received results

The main stage of statistical modeling is the economic problem definition assuming definition of variables and assessment of a measure of their participation in a variation of the studied indicator. It is known that many economic processes have probabilistic (stochastic) character. It is possible to investigate such

regularities on the basis of creating the economical and statistical models allowing to open the stochastic nature of the studied indicators. Most often such models represent a set of the classical equations of regression (one or several) and a number of auxiliary statistical characteristics (averages, dispersions, correlation coefficients, etc.). However, also other types of statistical models can be used (recurrent, classification, piecewise and linear, etc.). The main criterion of quality of statistical models their adequacy, compliance to the studied real phenomenon.

The choice like model (continuous regression, classification, piecewise and linear, etc.) should be carried out on the basis of the analysis of degree of structural uniformity of the studied set. At rather high degree of uniformity (proximity of distribution of signs to the normal law at which the majority of units of population can be referred to one class) continuous regression function is most expedient and at some violation of conditions of a normality more difficult regression functions.

In uniform sets at their studying separate classes are allocated, the classification model in the absence of an essential variation in classes and piecewise and linear is under construction (a combination classification and continuous) at preservation of an essential variation and various nature of dependence in classes. Also the third type of models a combination classification and piecewise and linear is possible. Their application is lawful in the presence of information on work of rather large number of objects (Shelobayev, 1999).

In the course of the research of dependences the cause and effect relations between the phenomena are opened that allows to reveal factors (signs) exerting the main impact on a variation of the studied phenomena and processes. The cause and effect relations are a communication of the phenomena and processes when change of one of them the reason leads to change of another the investigations.

The social and economic phenomena represent result of simultaneous influence of a large number of the reasons. Therefore, when studying these phenomena it is necessary to establish the main, main reasons, abstracting from minor. The qualitative analysis of the studied phenomenon connected with the analysis of the nature of a social or economic event by methods of the economic theory, sociology, concrete economy is the cornerstone of the first stage of statistical studying of communication. At the second stage creating the model of communication is carried out.

If causal dependence is shown not in each separate case and generally (on average), at a large number of observations, then such dependence is called stochastic.

A special case of stochastic communication is correlation communication at which change of average value of a resultant sign is caused by change of factorial signs. The correlative and regression analysis as a research technique includes measurement of narrowness and the direction of communication, establishment of analytical expression (form) of communication (the regression analysis), assessment of importance and reliability of communication.

Correlation analysis has the task the quantitative definition of narrowness of communication between two signs (at pair communication) and between a resultant and set of factor signs at multifactorial dependence. Coefficients of correlation, submitting the quantitative characteristic of narrowness of communication between signs, give the chance to define "usefulness" of factor signs at creating the the equations of a multiple regression. The size of a coefficient of correlation serves also as assessment of compliance of the equation of regression to the revealed relationships of cause and effect.

The regression analysis consists in definition of analytical expression of communication in which change of one size (called dependent or a resultant sign) is caused by influence of one or several independent sizes (factors) and the set of all other factors which are also affecting at a dependent size is accepted to constants and mean values.

As a result of realization of correlation analysis for assessment of narrowness of communication coefficients of pair correlation pay off. Pair dependences allow to estimate the isolated communications between the studied factor signs and a productive index. The choice of the equation of regression which is best describing communications between the studied signs is carried out by the following criteria of approximation: the minimum sum of squares of deviations, a minimum relative error of approximation, lack of autocorrelation in the oddments.

Rather complete economic interpretation of the equations of regression allows to reveal regularities of formation and interrelation between the studied phenomena, to estimate reserves of development and increase in business activity of the economic entities functioning in economic systems. Special value such studying has for the sake of appearances activity "construction".

RESULTS AND DISCUSSION

As subject of economical and statistical model operation time series of amount of works by the form of activity "construction" and the factors influencing them,

Table 1: Assessment of pair correlation

Variables	Amount of works by the form activity construction	Accounts payable of the enterprises	Receivables of the enterprises	Number of the enterprises and organizations	Investments into fixed capital	Quantity of mortgage loans
Amount of works by the form activity construction	1	0,878915	0,846594	0,832416	0,979476	0,712874
Accounts payable of the enterprises	0,878915	1	0,985924	0,650545	0,877441	0,667457
Receivables of the enterprises	0,846594	0,985924	1	0,677655	0,856565	0,745717
Number of the enterprises and organizations	0,832416	0,650545	0,677655	1	0,900734	0,69056
Investments into fixed capital	0,979476	0,877441	0,856565	0,900734	1	0,693216
Quantity of mortgage loans	0,712874	0,667457	0,745717	0,69056	0,693216	1

across the Saratov region from 2010 for 2015 were used. On the basis of empirical data the non-linear nature of multifactorial regression dependence of amount of completed work by the form of activity “construction” from the factor size which general view is expressed by a power function was revealed:

$$y = a_0 \cdot \prod_{i=1}^n x_i^{a_i} \quad (1)$$

where, a_0 the constant term, in it definitely is reflected average influence of unaccounted factors; a_1, a_n the regression coefficients characterizing influence of the corresponding factors of resources on the studied dependent indicator (Grishin, 2005); x_1, x_2, x_n numerical characteristic of factors. As the defining factors influencing construction volumes the following is:

- Accounts payable of the enterprises
- Receivables of the enterprises
- Number of the enterprises and organizations
- Investments into fixed capital
- Quantity of mortgage loans

These factors are complementing each other and lack of one or several of them negatively influences production in the sphere of construction in general. The functional dependence in essence can include some factors, however, actual value as a rule have no >2-3 which explain about 70-90% of changes of a resultant factor, in our case amount of completed work by the form of activity “construction”.

Some of the listed factors directly or are indirectly bound with each other. In this regard there is a danger that impact of each of such factors on result will be distorted by presence of other factors. For verification of such danger we carried out the analysis of the complete correlation matrix containing values of coefficients of pair correlation between productive and each of factor signs and between factor signs pairwise (Table 1).

The received matrix of coefficients of pair correlation shows that the effect variable has a close feed-forward

with the considered factors. The most weigh-able factors of production were as a result selected: sizes of creditor and debit debts and investment into fixed capital; coefficients are checked for a statistical significance, results of check are positive. Set of the received factors defines financial resources (capital) of the enterprises of structural branch and cause need of optimization of their use.

Calculation of parameters of a power function (Eq. 1) is made by a pro-taking the logarithm of the equation and on a way of least squares, leading its condition to the fact that the sum of squares of deviations of theoretical levels of logarithms of a dependent index from the actual levels has to be minimized:

$$S = \sum (\ln a_0 + a_1 \ln x_1 + a_2 \ln x_2 + a_3 \ln x_3 - \ln y)^2 \rightarrow \min \quad (2)$$

During realization of a task of determination of parameters of the multifactorial degree equation systems of normal equations on the basis of initial information were made. All calculations were carried out with use of the firmware Microsoft Excel functions. The regression analysis allowed to remove a type of the functional dependence modeling a variation of amount of works by the form of activity “construction” (y) depending on accounts payable of the enterprises (x_1), receivables of the enterprises (x_2) and investments into fixed capital (x_3):

$$y = 40.90152 \cdot x_1^{0.000378149} \cdot x_2^{0.000001} \cdot x_3^{0.70330342} \quad (3)$$

Calculation of a set of equations allowed to define regression coefficients (elastances) of the received functional dependence which show that with increase in quantity of accounts payable of the enterprises by 1% amount of works by the form of activity “construction” will increase on average by 0.000378149% or 202710 rub. The one-percentage increase of investments into fixed capital will cause increase in a productive sign by 0.70330342% or 377012714 rub. Analytical characteristics confirm slight influence of the size of receivables of the enterprises on amount of works by the form of activity “construction” (Table 2).

Table 2: Analytical characteristics of variation ranks and correlative dependences of amount of works by the form activity “construction” from the used resources

Indicators	Values
Coefficient (index) of correlation	0.96
Coefficient of multiple determination	0.93
Alienation coefficient	0.07
Average quadratic deviation, million rubles:	
Investments into fixed capital	6196.569811
Accounts payable of the enterprises	12720.03347
Receivables of the enterprises	12194.13877
Range of a variation, million rubles:	
Investments into fixed capital	19732.6
Accounts payable of the enterprises	31061.1
Receivables of the enterprises	32152.1
Variation factor:	
Investments into fixed capital	0.228
Accounts payable of the enterprises	0.497
receivables of the enterprises	0.523

Value of an index of correlation of regression dependence of amount of works by the form of activity “construction” from the used resources is at the level of 0.96 that testifies to close connection of a productive index with financial resources (Table 2). The coefficient of multiple determination reaches nearly 93%, i.e., the amount of investments into fixed capital, creditor and debit debts 93% of all variations of amount of works by the form of activity cause “construction”. Therefore, 93% of all variations of amount of works by the form of activity “construction” are caused by changes of the studied resources and only 7% of fluctuations are explained by influence of unaccounted factors.

The average quadratic deviation of investments into fixed capital, creditor and debit debts makes 6196.569811; 12720.03347 and 12194.13877 mln. rub., respectively. Variation factors testify to a variability of financial resources: investments into fixed capital at the level of 22.8%, creditor and debit debts of the enterprises 49.7 and 52.3%, respectively.

In practice of the economic analysis the specific indexes of a product yield which are most precisely reflecting change of results of production are as a rule, used. However, such problems as collecting and the accounting of statistical data are bound to a research of the structural enterprises and organizations. In this regard objective need of carrying out the limiting economic analysis evolves from calculation of effectiveness of resources.

Effectiveness of a resource the economic category meaning the quantitative and qualitative response from use of any financial resource. Calculation and the analysis of effectiveness of resources can be made on the basis of the functional dependence modeling dependences of the

end results on a number of factors. Let’s define, how effectively existing production of construction works in the Saratov region and the available financial and economic resources are how rationally used.

Average effectiveness of accounts payable of the enterprises of the multifactorial exponential law modeling amount of works by the form of activity “construction” from the available resources is defined by the Eq. 4:

$$\bar{\varepsilon}_1 = 40.90152 \cdot x_1^{-0.999621851} \cdot x_2^{0.000001} \cdot x_3^{0.70330342} \quad (4)$$

The marginal efficiency of a resource is determined as the first derivative of statistic-economic dependence by the corresponding factor. On the basis of the functional dependences (Eq. 3 and 4) the extreme effectiveness of separate resources characterizing the terminating speed of change of a dependent sign was calculated:

$$\varepsilon_1 = 0.01546687 \cdot x_1^{-0.999621851} \cdot x_2^{0.000001} \cdot x_3^{0.70330342} \quad (5)$$

The revealed formulas for definition of average and marginal efficiency of financial and economic resources of the structural organizations promote carrying out the limiting economic analysis (Table 3).

Heads of the structural organizations and enterprises make decisions, proceeding from the aspiration to receive the maximal benefit as a result of production activity. A number of the functions defining the marginal efficiency of resources promote scheduling of activity on the basis of finding of best value of variable resources. Comparison of the actual results with calculated showed that during the analyzed period works by the form of activity “construction” in the Saratov region was carried out is non-rational (Table 4).

So, at decrease in the amounts of investments into fixed capital by 1.4% and increase in the size of accounts payable by 12% amount of works by the form of activity “construction” practically does not change. Thus, using the received results, it is possible to draw a conclusion that the deviation of theoretical levels from empirical allows to find reserves of increase in economic efficiency of production activity of the structural organizations of the Saratov region. The optimizing task is a problem of the choice of the best option which can be solved by calculation of a set of options and the choice of the best of them. Let’s consider various options of creating the a production system of objects of a research:

Table 3: Average and marginal efficiency of financial resources

Indicators	Resource effectiveness	
	Medium	Limit
Accounts payable of the enterprises	$\varepsilon_1 = 40.90152 \cdot x_1^{-0.999621851} \cdot x_2^{0.000001} \cdot x_3^{0.70330342}$	$\varepsilon_1 = 0.01546687 \cdot x_1^{-0.999621851} \cdot x_2^{0.000001} \cdot x_3^{0.70330342}$
Receivables of the enterprises	$\varepsilon_2 = 40.90152 \cdot x_1^{0.000378149} \cdot x_2^{-0.999999} \cdot x_3^{0.70330342}$	$\varepsilon_2 = 0.00004090 \cdot x_1^{0.000378149} \cdot x_2^{-0.999999} \cdot x_3^{0.70330342}$
Investments into fixed capital	$\varepsilon_3 = 40.90152 \cdot x_1^{0.000378149} \cdot x_2^{0.000001} \cdot x_3^{-0.29669658}$	$\varepsilon_3 = 28.766179 \cdot x_1^{0.000378149} \cdot x_2^{0.000001} \cdot x_3^{-0.29669658}$

Table 4: Comparison of economic indexes of production activity of the structural organizations of the Saratov Region

Indicators	On average on the region	Actual indexes	Design value
Amount of works by the form activity "construction" (mln. rub.)	53605.98333	64625	64625
Accounts payable of the enterprises (mln. rub.)	11830.3	42891.4	48050
Receivables of the enterprises (mln. rub.)	23335.1	36668.9	36668.9
Investments into fixed capital (million rub.)	27214.47667	35600	35118.47

Table 5: Options of a combination of the resources necessary for works by the structural enterprises of the Saratov region

Indicators	Option 1	Option 2
Accounts payable (mln. rub.)	48050	42891.4
Receivables (mln. rub.)	36668.9	36668.9
Investments into fixed capital (mln. rub.)	35600	35118.47
Amount of works by the form activity "construction" (mln. rub.)		
Theoretical level	65246.95	64622.23
Empirical level	64625	64625
The relation of theoretical level to empirical (%)	101.0	99.0
Amount of works is at 1 rub of investments into fixed capital (rub.)		
Theoretical level	1.83278	1.84012
Empirical level	1.81531	1.84019
The relation of theoretical level to empirical (%)	100.96	99.0
Amount of works is at 1 rub of accounts payable (rub.)		
Theoretical level	1.3579	1.5066
Empirical level	1.3449	1.7624
The relation of theoretical level to empirical (%)	100.96	85.49
Amount of works is at 1 rub of receivables (rub.)		
Theoretical level	1.7794	1.7623
Empirical level	1.7624	1.7624
The relation of theoretical level to empirical (%)	100.96	100.0

Option 1: Calculated Value of the size of accounts payable of 48050 mln. rub. and the actual values of receivables and investments into fixed capital at the level of 36668.9 and 35600 mln. rub., respectively;

Option 2: Calculated Value of the amount of investments into fixed capital of 35118.47 mln. rub., actual sizes of creditor and debit debts 42891.4 and 36668.9 mln. rub., respectively (Table 5).

So, most the best option for production of construction works by the enterprises of area is Option 1 which promotes an intensive way of development of production activity. On all analyzed indicators of theoretical level option 1 above empirical for 1% while at other options excess of the actual indexes is observed. The carried-out analysis of the limiting influence of financial and economic resources at a size of amount of works showed that the greatest impact on the size of its possible increase in the structural organizations of the explored region is exerted by body height of accounts

payable: having increased this resource by 1.12 times or on 5158.6 mln. rub. the structural organization has an opportunity to increase amount of works by the form of activity "construction" by 1% that in absolute expression makes 621.95 mln. rub.

CONCLUSION

Normal functioning and competitiveness of the enterprises of the structural industry requires enough financial and economic resources which will provide their solvency and financial stability. However, as the practical real shows, most economic entities lack the material and financial resources and use them is non-rational that contradicts requirements of the modern market.

The efficient system of optimization of financial and economic resources as the optimum structure of formation and placement has them decisive Value in the organization of activity of the structural organization, increase in its effectiveness and financial results allows to exclude this contradiction.

Now the complex techniques of optimization of financial resources of the enterprises of structural branch based on use of economical and statistical methods and models are not rather developed. Lack of the modern evidence-based strategy of branch in this direction makes impossible formation and the choice of steady optimizing models in constantly changing managing conditions.

In work on the basis of the analysis of a statistical data set during 2010-2015 about financial and economic resources of the enterprises and organizations which are carrying out activity in the sphere of construction in the territory of the Saratov region the economical and statistical model characterizing influence of separate factors on amount of works by the form of activity "construction" was constructed. As the defining factors influencing construction volumes the following was defined:

- Accounts payable of the enterprises
- Receivables of the enterprises
- Number of the enterprises and organizations
- Investments into fixed capital
- Quantity of mortgage loans

SUGGESTIONS

It was suggested that these factors are complementing each other and lack of one or several of them negatively influences production in the sphere of construction in general. For elimination of a collinearity we carried out the analysis of the complete correlation matrix containing values of coefficients of pair correlation between productive and each of factor signs and between factor signs pairwise.

The most weigh-able factors of production were as a result selected: sizes of creditor and debit debts and investment into fixed capital; coefficients are checked for a statistical significance, results of check are positive. For the purpose of definition of effectiveness of the existing production activity of the structural organizations and rationality of use of the financial and economic resources which are available in them the limiting economic analysis on the basis of calculation of effectiveness of resources was carried out, average and extreme their effectiveness is defined.

Comparison of the actual results of activity of the structural organizations with calculated showed that during the analyzed period works by the form of activity "construction" in the Saratov region was carried out is non-rational. We defined reserves of increase in economic

efficiency of production activity of the structural organizations of the Saratov region which promote an intensive way of development of branch. The model developed by us is universal for all economic entities of structural branch and its application will allow to optimize financial security of activity of such enterprises.

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REFERENCES

- Debreu, G., 1951. The coefficient of resource utilization. *Econometrica*, 19: 273-292.
- Farrell, M.J., 1957. The measurement of productive efficiency. *J. R. Stat. Soc. Ser. A*, 120: 253-290.
- Fomina, O.A., 2007. Mechanism of optimization of financial resources of the enterprise in system of strategic tax controlling. *Mountain Inf. Anal. Bull.*, 9: 197-202.
- Golovko, T.V., 2002. *Strategic Analysis: Manual*. KNEU Publisher, Kiev, Ukraine, Pages: 198.
- Gordon, M.J., 1959. Dividends, earnings and stock prices. *Rev. Econ. Stat.*, 41: 99-105.
- Grishin, A.F., 2005. *Statistical Models: Construction, Assessment, Analysis; Studies*. Springer, Berlin, Germany,.
- Jensen, M.C. and W. Meckling, 1976. Theory of the firm: Managerial behavior, agency costs and capital structure. *J. Financial Econ.*, 3: 305-360.
- Kumbhakar, S. and C.A.K. Lovell, 2000. *Stochastic Frontier Analysis*. 1st Edn., Cambridge University Press, New York.
- Leibenstein, H., 1966. Allocative efficiency vs X-efficiency. *Am. Econ. Rev.*, 56: 392-415.
- Leibenstein, H., 1978. *General X-efficiency Theory and Economic Development*. Oxford University Press, Oxford, England,.
- Masulis, R.W., 1980. The effects of capital structure change on security prices: A study of exchange offers. *J. Financial Econ.*, 8: 139-178.

- Masulis, R.W., 1983. The impact of capital structure change on firm value: Some estimates. *J. Finance*, 38: 107-126.
- Modigliani, F. and M.H. Miller, 1958. The cost of capital, corporation finance and the theory of investment. *Am. Econ. Rev.*, 48: 261-297.
- Modigliani, F. and M.H. Miller, 1963. Corporate income taxes and the cost of capital: A correction. *Am. Econ. Rev.*, 53: 433-443.
- Myers, S.C., 2001. Capital Structure. *J. Econ. Perspectives*, 15: 81-102.
- Rozanov, R.V., 2009. Economic mathematical optimization of scheduling of finance and economy of the construction company in the conditions of multi project management. *Audit Financial Anal.*, 2: 102-116.
- Shelobayev, S.I., 1999. *Mathematical Methods and Models in Economy, Finance and Business*. Monograph Publisher, Donetsk, Ukraine, Pages: 367.
- Sidorova, A.V., 2002. *Economical and Statistical Methods in Management of a Services Sector*. Monograph Publisher, Donetsk, Ukraine, Pages: 239.