

Regulation of the Competitiveness of Financial Business Structures

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Annotation

Improving the competitiveness of management system is one of the most complex and topical tasks of any financial enterprise structure, which is logically driven by transitions in the field of innovation, technology, globalization and the liberalization of market relations. The subjects of entrepreneurship constantly need to develop existing approaches to the formation of new tools for generating solutions to ensure a high level of competitiveness in the long run. This article defines the directions, causes and factors that influence the regulation of the system for managing the competitiveness of financial business entities. On the basis of this, the order of realization of these directions is determined, taking into account the priority of their implementation. Priority is chosen based on the cost and complexity of adjusting deviations in a particular direction. The reasons and factors mentioned in the article directly indicate which direction of regulation should be implemented. The deviation of the values of this indicator from the planned or the normative does not directly indicate in what direction should be

regulated by the deviations in the system of management of the competitiveness of the financial enterprise structure.

Keywords: competitiveness, financial enterprise structure, management strategy.

Introduction

The current state of the Ukrainian economy provokes the immediate introduction of an innovative component in the system for managing the competitiveness of the financial business structure (FBS). Particular attention should be paid to such a component of the control system as regulation. Regulation is the final stage of the management process that takes place when managing business processes of the FBS. The regulation of the FBS's competitiveness management system is based on the elimination of deviations, deficiencies in its activities and improvements to this system. Provided that if the goals selected are not achievable, unreasonable or formed insufficiently clear, it is advisable to change the objectives and reorganize the management system.

Research Results

The regulation of the FBS Competitiveness Management System on the basis of ensuring the growth of their competitiveness is to eliminate deviations and to improve the interaction of control and control systems in order to achieve the most achievable increase in their competitiveness. The decision to regulate the management system is taken when there are sufficient grounds for this, in particular: the prevalence of growth of spending time and time over growth rates of target indicators, the growth of which corresponds to the growth of competitiveness; unpredictable deviations or opportunities for improving the competitiveness of the FBS; changes in market structure due to changes in the number of participants, entry into the market of new players, etc.; competitiveness of rival enterprises is growing faster; the goals and objectives set at the stage of the formation of the management system are unattainable, unannounced or insufficiently precisely measured; the impact of unpredictable and / or temporary factors on the management system, which leads to the emergence of new threats or opportunities.

The calculation of the integral indicator of the effectiveness of the FBS Competitive Management System implementation allows us to judge the level of effectiveness of this system application and the influence of subjective factors, due to the unique features of managers that form and maintain a management system. Despite this, the indicator does not fully reflect specific problems, it only proves that the growth of the competitiveness level is "slower" than the growth of time and money expenditures, which indicates an inadequate level of its economic efficiency and, accordingly, rationality. Values obtained with this indicator are the basis for making a decision on the appropriateness of regulation. Despite this, they do not focus on problems that need to be addressed. In order to detect abnormalities or opportunities to improve FBS competitiveness management, a thorough analysis of the tendencies inherent in the targets and the value of the cost and duration of the FBS functioning Competitiveness Management System is necessary.

In the process of using a particular control system, the theoretical features of its application are embodied at the application level, which creates opportunities for the proposals formation to improve the specifics of the functioning of this system. Thus, gaining new experience and experimenting with planned operations within a certain system of management will allow us to judge the possibilities of improving it or eliminating the deviations that can be detected during practical activity. An example of such deviations might be a non-rational employee motivation system, a high level of conservatism in managerial decisions, a low level or lack of examples of innovative technologies application, the use of outdated control methods, etc. Therefore, the practical use of the FBS Competitive Management System may result in new opportunities for improving or eliminating deviations. It is often impossible to anticipate the emergence of these opportunities and / or deviations at the stages of the formation of the FBS Competitiveness Management System, since it is highly unlikely that neglecting or ignoring factors the influence of which may be significant.

Since this article deals with the regulation of FBS's competitiveness management systems, it is important to take into account the factors of the environment of the organization under investigation or the group of organizations. One of the most important is the structure and concentration of the market in which a certain FBS operates. The emergence of new entrants or leaving of the old ones, the stage of the industry's life cycle, technology development, information leakage, migration of labour and capital between the FBS and many other factors predetermine the need to revise the management system for its suitability for achieving its goals and objectives.

It is rational to assume that the implementation and improvement of the management system on the basis of ensuring the growth of its competitiveness is carried out by all FBS, which operate in the financial sector of the economy and therefore are competitors. This assumption, as well as the fact that all enterprises always strive for absolute domination in their market, substantiates the thesis that all FBS, which are competitors, are constantly searching for new ideas for improving their activities, goods and services they are producing, trying to achieve the most convincing dominance in a particular market. This suggestion highlights the fact that the FPC Competitiveness Management System can be adjusted or rebuilt, provided that the FPC competitor achieves better results acting on the same market as the given business entity.

The choice of goals is based on the study of retrospective information and the subjective evaluation of the possibilities of the FBS or the FBS group to achieve a certain result. However, the implications of such an assessment are not always adequate to the FBS's potential, since changes in the external environment or certain internal factors have not been taken into account or whether the FBS capabilities have been underestimated or overestimated. Inappropriate targeting can be the cause of too low, in terms of economic efficiency, outcomes, or too high, which results in over-exposure to the financial sector and recession or market stagnation. Therefore, the adequate selection of goals that are clearly measured and presented by quantitative indicators is an important task on the path to the formation of the most efficient management system of competitiveness of the FBS.

Functioning of FBS takes place in conditions of rapid changes of the environment, which actualizes the need for continuous consideration of new factors and a new assessment of other factors. Such peculiarities of activity predetermine the difficulties in planning the adoption of managerial decisions, forecasting and solving other promising economic and managerial tasks. Therefore, the reason for the regulation of the FBS competitiveness management system may be the impact of unpredictable or temporary factors that were not foreseen at the stage of system formation.

Consequently, there are many reasons that may require the regulation of the FBS Competitiveness Management System.

The regulation of the FBS Competitiveness Management System can be presented in a sequence that is based on the priority of eliminating deviations in accordance with regulatory guidelines. Thus, the easiest in terms of the number of factors that must be taken into account is the data array and the complexity of the analysis methods is the adjustment of the distribution structure for the implementation of non-alternative strategies. Therefore, it is first necessary to eliminate deviations in the structure of the fund's distribution between non-alternative strategies. After that, the control system is monitored. If its quality increases, which affects the level of competitiveness of the FBS, then the necessity of regulation in other areas may be unfounded. Sufficient grounds to be able to prove or refute the need for regulation in other areas is the expected potential for reaching the goals set at the stage of the formation of a management system. If, after adjusting the structure of the funds distribution between strategies, the rate of change in target parameters is in line with the planned, then regulation in other areas is optional. An exception is only the situation in which the management system decides whether to overcome the goals and objectives.

Regulation of the FBS Competitiveness Management System can be presented in a sequence that is based on the priority of eliminating deviations according to the regulatory direction. Thus, the easiest in terms of the volume of factors that need to be taken into account is the data array and the complexity of the analysis methods is to adjust the structure of the funds distribution to implement

non-alternative strategies. Therefore, first of all, there is a need for a deviation in the structure of the funds distribution between non-alternative strategies. After that, the control system is monitored. If its quality increases, which affects the level of competitiveness of the FBS, then the necessity of regulation in other areas may be unfounded. Sufficient grounds to enable or refute the need for regulation in other areas is the expected potential for achieving the goals set at the stage of setting up a system of management. If, after adjusting the structure of the distribution of funds between strategies, the rate of change in target parameters is in line with the planned, then regulation in other areas is optional. An exception is only the situation in which the management system decides whether to overcome the goals and objectives, but this case will be discussed below. Provided that the redistribution of investments between strategies does not bring the necessary results, it is necessary to change the strategies for achieving the goals. To this end, a study of the factors of internal and external environment and management decisions on choosing other strategies are already based on actual retrospective data on the implementation of the FBS Competitiveness Management System. The regulation of the list of non-alternative strategies may be due to changes in the external environment of the FBS, changes in the structure and concentration of the financial sector, as well as other factors related to market conditions, political and socio-cultural factors, etc. Taking into account these factors may not be possible at the stage of the formation of a management system, since their influence was absent or insignificant, so reorganization of the given system based on changes in strategies for achieving the set goals and objectives is quite expected. The leadership of the FPS should be prepared for the regulation in this area. If the change of strategies to achieve the goals does not lead to their implementation, then it is necessary to generalize the objectives of regulation to the level of goals, and therefore, their adjustment. Failure to perform tasks does not always mean deviations at the stage of their execution. Sometimes it may be irrational to choose goals, due to the imperfection of information that was taken into account when choosing and re-evaluating or underestimating the opportunities for achieving the set targets. In addition, the reason for the inadequacy of the choice of goals and objectives may be their unclear formulation, which cannot be unequivocally "translate into the language of numbers," which complicates the process of measuring their implementation and creates the basis for subjective judgments and conclusions about the functioning of the system of competitiveness management of the FBS. Thus, changing the objectives of implementing the management system is the latest priority in the direction of its regulation. Using this feature means that all other measures will not lead to the necessary improvement of the management system and therefore the only way to eliminate the deviations in its operation remains to change the goals and objectives. Consequently, based on the research carried out, the results can be summed up. This section defines the directions, causes and factors that influence the regulation of the competitiveness of the FBS. On the basis of this, the order of realization of these directions is determined, taking into account the priority of their implementation. Priority is chosen based on the cost and complexity of adjusting deviations in a particular direction. The deviation of the values of this indicator from the planned or the normative does not directly indicate the direction in which the deviations in the competitiveness management system of the FBS should be regulated. Therefore, in this case, priority of directions is a rational solution, since it allows you to improve the management system as cheaply as possible, even without accurate data on the existing deviations. The next stage of the study is the analysis of the validity of the above power function in decline and growth in order to determine the extremums and minima. This task logically follows from the fact that when determining power coefficients, there is a need to insert values and the duration at which the function will acquire the maximum or minimum values. For this purpose, we will investigate the power functions for their decline or growth. Thus, the FPC managers would like to know which area of values of the duration and cost of implementing the management system corresponds to the maximum or minimum value of market share and the ratio of profit and volume of implementation of a certain FBS to the average industry value. This may supplement the information basis for the adoption of a management decision on the management of the management system and its improvement, as well as increase the level of rationality of its application. Since the problem of adjusting the competitiveness of the FBS is of particular interest in the rate of change in the target (market share, profit ratio and sales volume of the FBS to the average value of the FBS), the determination of the interval at which the function increases or decreases should be realized on the basis of its double derivative. The first derivative of the function corresponds to the function of the

change of the target parameter, and the second derivative corresponds to derivatives of the change function. Frequent dual derivatives are obtained below.

$$\left. \begin{aligned} \frac{\partial f(c,t)}{\partial c} &= \frac{\partial(\alpha_0 c^{\alpha_1} t^{\alpha_2})}{\partial c} = \alpha_0 t^{\alpha_2} \frac{\partial c^{\alpha_1}}{\partial c} = \alpha_0 \alpha_1 t^{\alpha_2} c^{\alpha_1-1}; \\ \frac{\partial f(c,t)}{\partial c^2} &= \frac{\alpha_0 \alpha_1 t^{\alpha_2} c^{\alpha_1-1}}{\partial c} = \alpha_0 \alpha_1 \alpha_2 \frac{\partial c^{\alpha_1-1}}{\partial c} = \alpha_0 \alpha_1 (\alpha_1 - 1) t^{\alpha_2} c^{\alpha_1-2}; \\ \frac{\partial f(c,t)}{\partial t} &= \frac{\partial(\alpha_0 c^{\alpha_1} t^{\alpha_2})}{\partial t} = \alpha_0 c^{\alpha_1} \frac{\partial t^{\alpha_2}}{\partial t} = \alpha_0 \alpha_2 c^{\alpha_1} t^{\alpha_2-1}; \\ \frac{\partial f(c,t)}{\partial t^2} &= \frac{\partial(\alpha_0 \alpha_2 c^{\alpha_1} t^{\alpha_2-1})}{\partial t} = \alpha_0 \alpha_2 c^{\alpha_1} \frac{\partial t^{\alpha_2-1}}{\partial t} = \alpha_0 \alpha_2 (\alpha_2 - 1) c^{\alpha_1} t^{\alpha_2-2}. \end{aligned} \right\} \quad (1)$$

The next step is to find the interval of values in which the studied function increases. This can be done by solving the system of inequalities:

$$\frac{\partial f(c,t)}{\partial c^2} > 0; \frac{\partial f(c,t)}{\partial t^2} > 0. \quad (2)$$

We substitute in expression (2), the results obtained from the expressions (1):

$$\left. \begin{aligned} \alpha_0 \alpha_1 (\alpha_1 - 1) t^{\alpha_2} c^{\alpha_1-2} > 0; \alpha_0 \alpha_2 (\alpha_2 - 1) c^{\alpha_1} t^{\alpha_2-2} > 0; \\ t^{\alpha_2} c^{\alpha_1-2} > 0; c^{\alpha_1} t^{\alpha_2-2} > 0; c^{\alpha_1-2} > 0; c^{\alpha_1} t^{\alpha_2-2\alpha_2} > 0; c > 0; t > 0. \end{aligned} \right\} \quad (3)$$

Thus, we obtain that the form of the power function used to analyze the rationality of the FBS competitiveness management system is increasing with values of duration and value greater than zero. Then the opposite problem of finding the interval of numbers, in which the function falls, will have an obvious solution: what is impossible, since the values of duration and cost are always greater than zero. Therefore, if the power function is defined on the interval of positive integers, then it is assumed that it increases with values of variables greater than zero. However, in practice, the power coefficients are often defined on the interval of irrational numbers, which actualizes the solution of this problem to the plane of searching for such power coefficients, in which a certain selected value of the duration and cost of the implementation of the control system of competitiveness of the FBS causes the growth of the resulting parameter of the form of the power choice chosen above. The solution of a given task is possible on the basis of the determination of partial derivatives:

$$\left. \begin{aligned} c \rightarrow const; t \rightarrow const; \\ \frac{\partial f(\alpha_0, \alpha_1, \alpha_2)}{\partial \alpha_0} &= \frac{\partial(\alpha_0 c^{\alpha_1} t^{\alpha_2})}{\partial \alpha_0} = c^{\alpha_1} t^{\alpha_2} \frac{\partial \alpha_0}{\partial \alpha_0} = c^{\alpha_1} t^{\alpha_2}; \frac{\partial f(\alpha_0, \alpha_1, \alpha_2)}{\partial \alpha_0^2} = \frac{c^{\alpha_1} t^{\alpha_2}}{\partial \alpha_0} = 1; \\ \frac{\partial f(\alpha_0, \alpha_1, \alpha_2)}{\partial \alpha_1} &= \frac{\partial(\alpha_0 c^{\alpha_1} t^{\alpha_2})}{\partial \alpha_1} = \alpha_0 t^{\alpha_2} \frac{\partial c^{\alpha_1}}{\partial \alpha_1} = \alpha_0 t^{\alpha_2} c^{\alpha_1} \ln c; \\ \frac{\partial f(\alpha_0, \alpha_1, \alpha_2)}{\partial \alpha_1^2} &= \frac{\alpha_0 t^{\alpha_2} c^{\alpha_1} \ln c}{\partial \alpha_1} = \alpha_0 t^{\alpha_2} \frac{\partial(c^{\alpha_1} \ln c)}{\partial \alpha_1} = \alpha_0 t^{\alpha_2} \left[\ln c (c^{\alpha_1})' + c^{\alpha_1} (\ln c)' \right] = \alpha_0 t^{\alpha_2} \left[c^{\alpha_1} (\ln c)^2 + \frac{c^{\alpha_1}}{c} \right]; \\ \frac{\partial f(\alpha_0, \alpha_1, \alpha_2)}{\partial \alpha_2} &= \frac{\partial(\alpha_0 c^{\alpha_1} t^{\alpha_2})}{\partial \alpha_2} = \alpha_0 c^{\alpha_1} \frac{\partial t^{\alpha_2}}{\partial \alpha_2} = \alpha_0 c^{\alpha_1} t^{\alpha_2} \ln t; \\ \frac{\partial f(\alpha_0, \alpha_1, \alpha_2)}{\partial \alpha_2^2} &= \frac{\alpha_0 c^{\alpha_1} t^{\alpha_2} \ln t}{\partial \alpha_2} = \alpha_0 c^{\alpha_1} \frac{\partial(t^{\alpha_2} \ln t)}{\partial \alpha_2} = \alpha_0 c^{\alpha_1} \left[\ln t (t^{\alpha_2})' + t^{\alpha_2} (\ln t)' \right] = \alpha_0 c^{\alpha_1} \left[t^{\alpha_2} (\ln t)^2 + \frac{t^{\alpha_2}}{t} \right]. \end{aligned} \right\} \quad (4)$$

Thus, it is possible to investigate at what values of power coefficients with certain selected parameters of the duration of implementation of the system for managing the competitiveness of the FBS and its costs, it is possible to achieve an increase in market share, and the ratio of net profit and sales to medium-sized values. To this end, the following system of inequalities is solved:

$$\frac{\partial f(\alpha_0, \alpha_1, \alpha_2)}{\partial \alpha_0} > 0; \frac{\partial f(\alpha_0, \alpha_1, \alpha_2)}{\partial \alpha_1} > 0; \frac{\partial f(\alpha_0, \alpha_1, \alpha_2)}{\partial \alpha_2} > 0. \quad (5)$$

After substituting the expressions (4), we obtain:

$$1 > 0; \alpha_0 t^{\alpha_2} \left[c^{\alpha_1} (\ln c)^2 + \frac{c^{\alpha_1}}{c} \right] > 0; \alpha_0 c^{\alpha_1} \left[t^{\alpha_2} (\ln t)^2 + \frac{t^{\alpha_2}}{t} \right] > 0. \quad (6)$$

The first inequality of the system of inequalities proves that the value of the zero coefficient is optimal when it is equal to one. Therefore, in the subsequent derivation we take it equal to the unit, which allows to record the system of inequalities of two inequalities:

$$\begin{cases} t^{\alpha_2} \left[c^{\alpha_1} (\ln c)^2 + \frac{c^{\alpha_1}}{c} \right] > 0; \\ c^{\alpha_1} \left[t^{\alpha_2} (\ln t)^2 + \frac{t^{\alpha_2}}{t} \right] > 0. \end{cases} \Rightarrow \begin{cases} c^{\alpha_1} (\ln c)^2 + \frac{c^{\alpha_1}}{c} > 0; \\ t^{\alpha_2} (\ln t)^2 + \frac{t^{\alpha_2}}{t} > 0. \end{cases} \Rightarrow \begin{cases} (\ln c)^2 + \frac{1}{c} > 0; \\ (\ln t)^2 + \frac{1}{t} > 0. \end{cases} \Rightarrow \begin{cases} c(\ln c)^2 > -1; \\ t(\ln t)^2 > -1. \end{cases} \quad (7)$$

Thus, this system can be solved with any values of power coefficients, provided that the values and duration of the implementation of the FBS competitiveness management system satisfy the requirements of the system of inequalities.

On the basis of the conducted mathematical analysis, we can draw the following conclusions about the possibilities of using the proposed toolkit to solve certain economic problems: the chosen form of power dependence between the target parameter, which is selected at the stage of the formation of the control system, allows determining the expediency of regulating the system and monitoring it; the behavior of the function is only declining or only increasing, so its use is expedient in the short run for the purposes of analysis, but not forecasting; it has been proved that the proposed mathematical toolkit allows us to assess the influence of subjective factors such as the experience and reputation of FBS managers.

Literature

1. Dubas, R.G., Serdyuk, V. P. and Serdyuk, Ye.V. (2017) 'Economic-legal and financial aspects of the development of the national economy of Ukraine management of efficiency and effectiveness', *Financial and credit activities: problems of theory and practice*, No. 23, Vol. 2, 43–55.
2. Karpenko, O., (2013) 'Aspects of effect of clusters functioning in the context of increasing the competitiveness of the national economy', *Problems of economy*, No.1, pp.73-80.
3. Kniaz, S. (2015) 'Transfer potential for innovative development of industrial and trade organizations', *Actual Problems of Economics*, Issue 7, 57–64.
4. Kniaz, S.V., Kosovska, V.V. (2015). 'Grounding the need for transfer system development between industrial enterprises', *Actual Problems of Economics*, № 8 (170), 16-24.
5. Kniaz, S., Pavlenko, E., Rubel, O., Zavnerchik, O. (2018) 'Funding mechanisms for the implementation of the marine strategy framework directive: eu experience', *Financial and credit activity: problems of theory and practice*, №27, Volume 4, pp. 27-35.
6. Skrynkovskiy, R. (2008) 'Investment attractiveness evaluation technique for machine-building enterprises', *Actual Problems of Economics*, No. 7(85), pp. 228–240.
7. Skrynkovskiy, R. M. (2011) 'Methodical approaches to economic estimation of investment attractiveness of machine-building enterprises for portfolio investors', *Actual Problems of Economics*, Volume 118, Issue 4, pp. 177–186.