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ORGANIZATION OF FINANCIAL CONTROLLING AS INFORMATIONAL SYSTEM AT AN ENTERPRISE (on the example of hotel industry)

Abstract. *Introduction.* The authors describe organization of financial controlling system that allows informing management about financial state and existing risks for the enterprise and making better management decisions for current activity and future planning. *Purpose* of the article is analysis of possibilities for financial controlling usage as an informational system at the enterprises. *Results.* The possibility of access to reliable and actual information about financial state of the enterprises, necessary for effective management, was considered. To estimate financial stability and probability of the enterprises' bankruptcy by the example of hotel industry, 10 enterprises were selected. The results of analysis have shown that calculated values are contradictory, which makes it impossible to provide accurate conclusions about financial stability. To avoid significant drawbacks of these analysis methods usage, an approach to financial controlling implementation as an informational system has been considered. In addition, the possibility of the early warning and response system applying as a tool of financial controlling was determined in order to make forecast of main performance indicators' operation of the enterprises. *Conclusions.* Organization of financial controlling as the informational system provides access to reliable data regarding enterprises' effectiveness. At the same time, this system supplies information about factors, which influence operational result, and makes it feasible to financial managers to take informed managerial decisions.
Keywords: financial controlling; informational systems; financial state; profitability.
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ОРГАНІЗАЦІЯ ФІНАНСОВОГО КОНТРОЛІНГУ ЯК ІНФОРМАЦІЙНОЇ СИСТЕМИ НА ПІДПРИЄМСТВІ (НА ПРИКЛАДІ ГОТЕЛЬНОЇ ГАЛУЗІ)

Анотація. У статті розглядається питання використання фінансового контролінгу як інформаційної системи. Авторами обґрунтовано доцільність упровадження фінансового контролінгу для інформаційного забезпечення прийняття управлінських рішень. Концепція фінансового контролінгу розглядається як система раннього попередження і реагування, що дає можливість визначити ефективність діяльності підприємства та її ризики.
Ключові слова: фінансовий контролінг; інформаційна система; фінансовий стан; рентабельність.

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ОРГАНИЗАЦИЯ ФИНАНСОВОГО КОНТРОЛЛИНГА КАК ИНФОРМАЦИОННОЙ СИСТЕМЫ НА ПРЕДПРИЯТИИ (НА ПРИМЕРЕ ГОСТИНИЧНОЙ ОТРАСЛИ)

Аннотация. В данной статье рассматривается вопрос использования финансового контроллинга как информационной системы. Авторами обоснована целесообразность внедрения финансового контроллинга для информационного обеспечения принятия управленческих решений. Концепция финансового контроллинга рассматривается как система раннего предупреждения и реагирования, которая дает возможность определить эффективность деятельности предприятия и выявить существующие риски.
Ключевые слова: финансовый контроллинг; информационная система; финансовое состояние; рентабельность.

Introduction. In the modern conditions of economic environment instability and increased market competition, success of financial-economic activity of enterprises is determined by the efficiency of decision-making that directly depends on the total access to information about the financial state and existing risks. One important tool that allows the company to ensure an organized system of information is financial controlling.

The purpose is to define opportunities to organize financial controlling as an informational system at the enterprises that, in its turn, will provide analytical data, necessary for effective management.

Brief Literature Review. Special attention to research of financial controlling is paid by the domestic authors: Basantsov I. V. [1], Hizatullina A. [2], Hryhoriw O. O. [3], Kartseva V. V. [4], Kokovikhina A. A. [5], Lipych L. [6], Partyn G. A. [7], Pryimak S. [8], Tereshchenko A. A. [9] and others. The foreign authors concurrently pay particular attention to the issue of controlling system implementation at the enterprises: Danilochkin S. [10], Dimov O. [11], Falko S. G. [12], Man R. [13]. At the same time, the possibility of introducing financial controlling as informational system at the enterprises has not been described. In addition, there is no common opinion about the interpretation of financial controlling in economic literature. After the analysis of theoretical papers, we may conclude that financial controlling is a system that ensures effective management based on the functions of planning, coordination and control to achieve the objectives and planned indicators.

Results. To make informed management decisions and achieve the objectives in the system of financial controlling at the enterprises, managers develop strategic and operational plans, success of which is highly dependent on timely response to changes in the market and inside the enterprise.

At the present stage of economic development, in conditions of uncertainty, which is associated with variability of internal and external environments, information has become an important element of management activity process.

Therefore, we can determine that effective management of the enterprise can be achieved only if there is access to objective information. In this way, there is a need at the enterprises for access to actual information.

Implementation of financial controlling allows organizing a single informational system at the enterprise. Such informational system can provide relevant and reliable data about the financial state, profitability and risks associated with current financial and economic activity.

Organization of financial controlling as informational system is also aimed to determine an objective performance evaluation of enterprises. Information obtained from analysis is an important resource, since it makes possible to identify existing problems and weaknesses at the enterprises. Another important objective of financial controlling is to plan future activity.

To define the possibility of financial controlling organization as informational system, the indices of financial stability of enterprises were evaluated. To implement this task, we selected 10 hotels that operate in Ukraine and have the category of «four stars», namely: «Mir» hotel (Kharkiv), «Kharkiv» hotel (Kharkiv), «Chichikov» hotel (Kharkiv), «Dnipro» hotel (Kyiv), «President» hotel (Kyiv), «Dnister» hotel (Lviv), «Yalta-Intourist» hotel (Yalta), «Oreanda» hotel (Yalta), «Arcadia» hotel (Odessa) and a hotel complex «Dnipro-Beskid» (Truskavets).

In order to evaluate the financial condition of enterprises, we calculated main indices of financial stability for the period of 2012-2013 (Table 1).

Based at the analysis of calculated indices, we can draw conclusions that the following hotels have the recommended value of equity ratio: «Dnipro», «President», «Yalta-Intourist», «Arcadia» and the hotel complex «Dnipro-Beskid» throughout the research period, whereas «Mir», «Kharkiv», «Chichikov» only at the end of 2013. The calculated value of equity ratios for the hotel «Chichikov» at the end of 2012, «Dnister» and «Oreanda» during 2012-2013 is less than the norm (which is 0.5), indicating their dependence on foreign lenders, as far as less than half of the hotels' capital is formed at their own expense.

The calculated actual values of financial risk ratios indicate the absence of imbalances in the share of borrowed funds for the hotels: «Mir», «Kharkiv», «Chichikov», «Dnipro», «President», «Yalta-Intourist», «Arcadia» and the hotel complex «Dnipro-Beskid», but high financial risk for: «Chichikov», «Dnister» and «Oreanda».

Ratio of current assets to equity during the whole period for all the hotels is less than the standard value, which clearly indicates a high shortage of working capital. The calculated values of own funds show that the hotels «Mir», «President» and the hotel complex «Dnipro-Beskid» for the period of 2012-2013 and the hotels «Dnipro» and «Yalta-Intourist» at the end of 2013 had stocks covered by their own funds.

Share of assets for production purposes is rather small for the hotels «Dnipro», «Dnister» and «Oreanda», which was defined based on estimation of the assets coefficients for production purposes.

To ensure minimum financial stability at the enterprise, the value of ratio of current and non-current assets should be more than the value of ratio of financial risk. This condition is met by the hotels «Mir», «President», the hotel complex «Dnipro-Beskid», the hotels «Dnipro» and «Yalta-Intourist» at the end of 2013.

Thus, we can determine that the calculated value of financial stability indicators differ significantly for all the enterprises. The following hotels are financially stable: «Kharkiv», «Chichikov», «Dnister», «Arcadia» and «Oreanda» for 2012-2013; «Dnipro «and» Yalta» at the end of 2012. Also, for a more comp-

Tab. 1: **Indicators of financial stability of the hotels for 2012-2013**

Hotel	Year	Coefficient						
		Equity Ratio	Ratio of financial risk	Capital adequacy ratio	Ratio of current assets to equity	Ratio of own funds reserves	Ratio of property for production purposes	Ratio of current and non-current assets
Mir	2012	0.9035	0.1068	0.5104	0.1113	2.1218	0.8351	0.2454
	2013	0.8979	0.1137	0.4986	0.1130	1.5302	0.8523	0.2556
Kharkiv	2012	0.8608	0.1618	-0.1052	-0.0154	-3.6463	0.7553	0.1441
	2013	0.8272	0.2090	-0.2731	-0.0448	-2.0685	0.7310	0.1571
Chichikov	2012	0.2563	2.9014	-5.5365	-2.4575	-9.8325	0.8383	0.1284
	2013	0.5029	0.9885	-0.1691	-0.1430	-1.5021	0.6172	0.7398
Dnipro	2012	0.9455	0.0576	-0.7002	-0.0237	-3.3571	0.3656	0.0331
	2013	0.9763	0.0243	0.2580	0.0084	1.0350	0.3878	0.0330
President	2012	0.9905	0.0096	0.9443	0.1597	1.3623	0.9330	0.2013
	2013	0.9850	0.0153	0.8043	0.0620	15.7036	0.7375	0.0822
Dnister	2012	0.4148	1.4110	-0.6592	-0.5604	-41.92	0.4084	0.5448
	2013	0.3958	1.5268	-0.2166	-0.2718	-36.08	0.5037	0.9868
Yalta-Intourist	2012	0.6017	0.6620	-0.9539	-0.3232	-7.3338	0.6647	0.2561
	2013	0.8538	0.1712	0.2117	0.0460	1.3861	0.7726	0.2276
Oreanda	2012	0.3177	2.1473	-0.5988	-2.1120	-126.45	0.4860	0.0113
	2013	0.2332	3.3086	-0.6159	-1.2544	-52.68	0.5050	0.9034
Arcadia	2012	0.8830	0.1325	-2.1259	-0.0901	-6.6489	0.9653	0.0389
	2013	0.8248	0.2123	-0.5969	-0.0794	-1.8203	0.9173	0.1232
Dnipro-Beskid	2012	0.9339	0.0708	0.6988	0.1643	10.0017	0.7923	0.2813
	2013	0.9448	0.0584	0.7121	0.1444	7.2071	0.8252	0.2370

Source: Authors' own calculations

lete estimation of a financial condition of the enterprises appropriate to consider probability of bankruptcy.

In order to determine the probability of hotel industry enterprises bankruptcy we use Tereshchenko's [9] model of bankruptcy identification. The technique proposed by O. O. Tereshchenko (2003) is based not only on the calculation of financial ratios, but also on the definition of the integral index of the probability of bankruptcy (Table 2).

Tab. 2: **Calculation of the integral index of Tereshchenko's model of bankruptcy identification**

Hotel	Year	The integral indicator Z	Zone financial crisis Z<-0,51	Zone additional analysis -0,51<Z<0,43	Zone of financial stability 0,43<Z
Mir	2012	1.7201			+
	2013	1.5124			+
Kharkiv	2012	-0.0369		+	
	2013	-0.0305		+	
Chichikov	2012	1.4028			+
	2013	0.4220		+	
Dnipro	2012	0.9479			+
	2013	1.6691			+
President	2012	5.0642			+
	2013	1.9946			+
Dnister	2012	0.1396		+	
	2013	0.8375			+
Yalta-Intourist	2012	0.1624		+	
	2013	1.5925			+
Oreanda	2012	0.6069			+
	2013	0.9629			+
Arcadia	2012	9.0867			+
	2013	4.1627			+
Dnipro-Beskid	2012	2.0945			+
	2013	2.2663			+

Source: Authors' own calculations

According to the interpretation of the model's values, the hotels «Mir», «Dnipro», «President», «Oreanda», «Arcadia», «Dnipro-Beskid» for 2012-2013, and the hotels «Chichikov», «Yalta-Intourist», «Dnister» at the end of 2013, were in the area of financial stability. The probability of bankruptcy for these hotels is low. Based on the data of estimated bankruptcy probability, we need to conduct additional analysis for the hotel «Kharkiv» for 2012-2013, the hotels «Chichikov», «Yalta-Intourist» and «Dnister» at the end of 2012. None of enterprises reached an area of financial crisis.

Grounding on the analysis of financial statements, we defined that the calculated values are contradictory. According to the calculated indicators of financial stability financially unsustainable were hotels: «Mir», «Dnipro», «President», «Dnipro-Beskid», «Yalta-Intourist». According to the interpretation of the Tereshchenko's model values, the hotels «Mir», «Dnipro», «Dnipro-Beskid» for 2012-2013 were in the area of financial stability. That makes it impossible to achieve accurate conclusions about financial state of enterprises.

In this way, there is a real need to build an informational system that would ensure quality data about financial state of enterprises. To implement this task, it is advisable to consider possibility of the informational system organization based at financial controlling. One of the important tools of financial controlling is the system of early warning and response, which makes it possible to identify potential risks for enterprises. The indicator on which the early warning and response system will be formed is return on equity (ROE). This indicator shows efficiency of profit formation by enterprises.

It is appropriate to analyze return on equity and the impact of main indicators on it. In this work, we explore relationship between return on equity of hotels and the following factors: net operating income, average annual value of the fixed assets, hotel service revenue, operating profitability, capital intensity of hotel services for non-current assets, total cost of services, costs for 1 hrn. of services (expenditures for 1 hrn. of services) (Table 3).

Based at the identified quantitative interdependencies of the impact factors on the rate of return on equity, a regression model was constructed. In simulations, practical importance depends only on non-negative variables, so we had to abandon the observations that do not meet this condition.

From the identified interdependencies and quantitative results of stepwise regression applying to studying the effect of different factors on the ROE of hotels indicator, we found that indicators average annual value of the fixed assets, hotel service revenue, total cost of services, costs for 1hrn. of services must be excluded from the model, because there is no connection between ROE and these factors.

As a result, the regression model has been built as follows:

$$y = 0{,}021 - 0{,}0000002x1 + 0{,}49x2 - 0{,}01x3, \quad (1)$$

were y – return on equity of hotels;
x1 – net operating income;
x2 – operating profitability;
x3 – capital intensity of hotel services for non-current assets.

The graph of response surface of return on equity has been constructed, which demonstrates dependence on return on equity from net operating income, operating profitability and capital intensity of hotel services for non-current assets. In Figure, the response surface of return on equity is shown.

Tab. 3: **Calculation of the hotels' profitability for 2012-2013**

Hotel	Year	Net operating income	Average value of fixed assets of the hotel	Hotel service revenue	Operating profitability	Capital intensity of hotel services for non-current assets	Total cost of services	Costs for 1hrn. of services	Return on Equity
Mir	2012	227	6741	7765	0.03	0.87	5036	0.65	0.02
	2013	404	6719	9574	0.04	0.70	5794	0.61	0.03
Kharkiv	2012	-969	20194	7737	-0.13	2.61	6966	0.90	-0.04
	2013	-551	19722	8607	-0.06	2.29	7913	0.92	-0.02
Chichikov	2012	865	15618.5	13617	0.06	1.15	6101	0.45	0.04
	2013	5975	12542	11176	0.53	1.12	8220	0.74	0.29
Dnipro	2012	689	251609.5	46385	0.01	5.42	35704	0.77	0.00
	2013	722	247524	45778	0.02	5.41	32345	0.71	0.00
President	2012	3725	117847.5	18661	0.20	6.32	10576	0.57	0.03
	2013	5116	122182	38442	0.13	3.18	27148	0.71	0.03
Dnister	2012	-12703	161148.5	22753	-0.56	7.08	19021	0.84	-0.07
	2013	-10376	161656	31156	-0.33	5.19	23918	0.77	-0.06
Yalta-Intourist	2012	9845	177566.5	162532	0.06	1.09	127301	0.78	0.03
	2013	31440	182911.5	166183	0.19	1.10	121986	0.73	0.10
Oreanda	2012	-7841	545309.5	49345	-0.16	11.05	29345	0.59	-0.01
	2013	9889	471276	20196	0.49	23.34	14750	0.73	0.02
Arcadia	2012	-106	2323	3361	-0.03	0.69	1880	0.56	-0.03
	2013	-90	2208.3	3180	-0.03	0.69	1314	0.41	-0.03
Dnipro-Beskid	2012	3305	28996	37672	0.09	0.77	28919	0.77	0.06
	2013	1040	28498.5	37618	0.03	0.76	30364	0.81	0.02

Source: Authors' own development

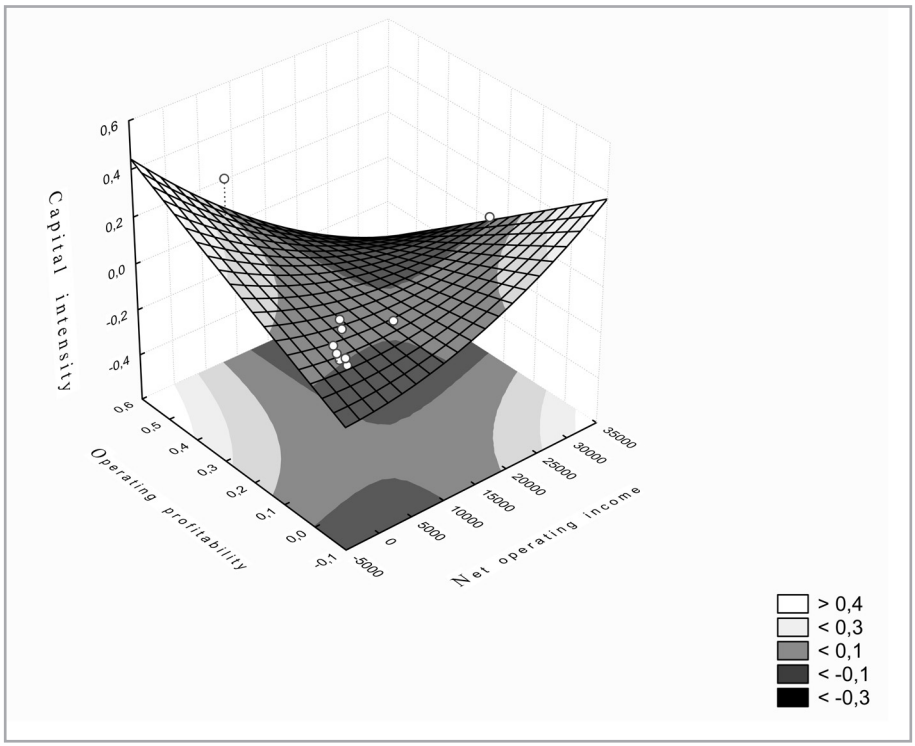

Figure: **Response surface of return on equity**
Source: Authors' own development

Grounded on the constructed response surface, it is determined that only the hotel «Chichikov» at the end of 2013 had the return on equity higher than 20%, which characterizes efficiency of the return on equity and shows a normal rate of return on invested equity. For the hotels «Mir», «Dnipro», «President», «Yalta» and «Dnipro-Beskid», level of return on equity during the years 2012-2013 is less than 20%, indicating a low yield. Hotels «Arcadia», «Dnister», «Kharkiv» for the period of 2012-2013, and the hotel «Oreanda» at the beginning of 2012 had negative ratio of return on equity, indicating a loss-making activity.

From our analysis, we identify the problem of low return on equity. When return on equity is less than 20%, it indicates a low amount of profits, and negative return on equity indicates losses of enterprises, potential threats to financial state and current need to implement managerial decisions aimed at solving existing problems.

What is also important, it is the ability to determine the possible level of return on equity with a different value of these factors' indicators. These indicators can be applied to predict performance of enterprises in future for early warning and response in the system of financial controlling.

Therefore, using financial controlling as an informational system gives an opportunity to determine enterprises' efficiency, profitability, current problems and likelihood of the critical events at the enterprises in future.

Conclusion. Financial controlling is a new direction in management that can ensure development of enterprises effectiveness by forming objective information about its activities. Organization of financial controlling as an informational system will give a possibility to identify weaknesses in the company. It will also allow to make rational management decisions based at received data. Future research will be aimed at identifying the possibility of financial controlling organizing as an informational system to ensure financial security.

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