Key Performance Indicators in Internal Control

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Abstract: This study describes some of the approaches to the problem of establishing an effective system of internal financial control structures aimed at rational use of material, labor and financial resources in the conditions of crisis in the global economy. In the study in particular, we hypothesized about the need to use key performance indicators in the internal financial control system. The KPI system is integrated in the modern concept of corporate finance in particular VBM. In this regard in the study, we constructed an econometric model of the relationship between financial performance and economic value added for the purpose of identifying which particular KPI may serve as reference points for the internal financial control department.

Key words: Internal control, KPI, VBM, EVA, regression analysis, financial statements

INTRODUCTION

An important condition for the corporation management during the period of crisis in the global economy is the efficient use of available resources and provision of relevant information for management optimal decision-making. Among the activities that allow improving the current practice of the resources use is the implementation and use of the internal financial control system. It should be noted that internal financial control should be used in conjunction with the accounting and managerial accounting systems including budgeting system which are integrated into the company's management processes, providing management of the necessary, timely and reliable information, providing reliable estimates and analysis of key performance indicators as well as the need to control forecast data (Henklang *et al.*, 2014; Ling, 2015; Ronzhina, 2016).

Internal financial control can be considered as internal services activity of economic entities to improve the effectiveness of both individual departments and corporation as a whole (Feng *et al.*, 2014; Gros *et al.*, 2017). Internal financial control is closely related to external regulatory institutions and in this context, the company is focused on reducing risk and increasing shareholder value (Ankudinov *et al.*, 2017; Shahbazi *et al.*, 2015).

The main problems identified in the researches and legal documents related to internal financial control, include the following: relationship between national culture and the amount of information on internal controls (Hooghiemstra *et al.*, 2015) improving internal control

quality by raising audit firm awareness of significant transactions influencing the financial statements (Simone *et al.*, 2014) creation of general and special methods of control and audit (Tang *et al.*, 2015) incentive factors for the (non) disclosure of material weakness in internal control over financial reporting (Yazawa, 2015).

The publications discussed a number of issues of internal financial control and audit but still are a large number of controversial and unresolved issues that require a separate research.

MATERIALS AND METHODS

Theory: The term "corporation" was introduced into the Russian legislation rather recently by the Federal Law of 05.05.2014 N 99-FZ which makes relevant amendments to the Civil Code of the Russian Federation. Accordingly, now all legal entities are divided into corporate and unitary (Art. 65.1 of the civil code). Corporate entity (corporation) is a legal entity who's founders (participants) have the right of participation (membership) in it and form its supreme body. Due to the participation of the corporate organization, the participants acquire corporate (membership) the rights and obligations in created by them legal entity, except in cases provided for the civil code. These organizations includes all commercial legal entities (with the exception of unitary enterprises) as well as a number of non-profit. In particular, the corporate (legal entities) include economic partnerships and societies, peasant (farmer) economy, economic partnership, production and consumer cooperatives, community organizations, social movements, associations (unions) a partnership of owners of real estate, the

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Cossack societies made to the State register of Cossack communities in the Russian Federation as well as communities of indigenous peoples of the Russian Federation (ed. Federal law of 23.05.2015 N 133-FZ).

Legal entities which founders do not become their members and do not acquire membership rights in them, are unitary entities. These include state and municipal unitary enterprises, funds, institutions, autonomous non-profit organizations, religious organizations, public corporations and public-law companies (Art 65.1 of the Civil Code).

Control activities of corporate commercial organizations carried out a number of ways. The external state control covers a number of areas including tax control, supervision of banking and foreign exchange transactions, control in the field of licensing, financial control, etc. Control of the reliability of accounting and reporting information contained in the financial statements, performed by audit by which according to the Federal Law "On audit activity" from 30.12.2008 N 307-FZ (Ankudinov *et al.*, 2017) is meant "an independent audit of accounting (financial) statements of the audited entity the purpose of expressing an opinion on such statements". International Auditing Standards (ISA) such as ISA 200, states that "the purpose of the audit of financial statements is to enable the auditor to express an opinion as to whether the financial statements are prepared in all material respects in accordance with the applicable financial reporting framework".

In addition, in accordance with Article 19 of the Federal Law dated December 6, 2011 No. 402-FZ "On Accounting", "economic entity, accounting (financial) statements of which is subject to statutory audit, shall organize and carry out internal control of accounting system and of accounting (financial) statements performance". Thus, under the internal control is understood a process aimed at obtaining reasonable assurance that the economic entity provides efficiency and effectiveness of its activities including the achievement of financial and operating key performance indicators, security of assets, the accuracy and timeliness of financial (accounting) and other reports compliance with applicable law.

By the theoretical positions internal control is a sequence of actions aimed at the assessment of the risks affecting the achievement of the objectives of the economic entity and risks minimization. As applied to accounting system the evaluation and reduction of risks involves control of economic activity which took place in the reporting period in terms of their actual relationship to the activities of the company control of assets, property, property rights, obligations and their actual availability,

Table 1: Typical corporate losses due to the absence of the internal control system

Management subsystem	Typical corporate losses
Business protection	Business entirely
Contract work	Business entirely
Finance	0.2-1% of the cash flow
Selling	1-5% of the sales revenue
Purchases	5-10% of the of purchasing costs
Production	3-5% of the production costs and repairs
Capital investments	8-20% of the total investment and repairs
Personnel	up to 25% of payroll costs

cost, terms of existence (maturity) monitoring reliability of recording transactions in the accounts and their proper disclosure in the financial statements of the company.

Internal control procedures are as follows: control of documenting transactions, i.e., the accuracy and correctness of filling source documents including electronic, control of the correspondence between the documents and operations including the monitoring of related facts of economic activities, control of the authorization of transactions by management, reconciliation of data (for example, checking the calculations of the economic entity with suppliers and customers to confirm the amounts of receivables and payables, reconciliation of accounting balances of cash from the cash balance according to the cash book) segregation of duties of officials in order to reduce the risk of errors and abuse, inventory, control of the actual availability of material values, the accuracy and validity of the established consumption rates, supervise and monitor the achievement of the objectives of the economic entity (ex., timing control preparation of financial and management reporting, budget control, etc).

Also in the area of internal control are computer data processing procedures that regulate the procedure for access to information systems, databases, directories, support systems and information security.

Thus, the risk-oriented internal control system is intended to stimulate development in all areas of activity and include: human resources, information resources, financial resources (Elliott *et al.*, 2007).

The procedure for the organization of internal control, segregation of duties of management and departments depends on the nature and scope of activity of the economic entity the characteristics of its control system. In order to control system smoothly served to the company's owners following principles must be complied: systematic of process, the efficiency of collecting information, the complexity of the implementation of control activities, the proportionality of the information provision, specialization and cooperation in carrying out the control and audit procedures (Lepadatu, 2011).

In Russia, the classic approach to the implementation of the internal control service is presented in Table 1.

Under this approach, setting internal control system is necessary to start with the elimination of the risks that may result in the loss of business as a whole. In particular, this applies to business protection against takeovers. These procedures provide for a periodic review and correction of violations of all legal aspects as well as the construction of an appropriate legal framework and schemes of financial and economic activity. After that, it is needed to ensure internal control of contractual work. This is due to the segregation of duties between the top management (internal control at the business level) as well as with contracts matching procedures (internal control at the business process level). Internal control department can be arranged in several ways: creation your own control and audit activity including the allocation of a separate legal entity (insourcing) outsourcing, i.e., transfer of functions of the internal control of a third party (ex., consulting) company, co-sourcing when performing the functions of internal control and audit are utilize both internal and external personnel and resources.

Intranet control is closely related to external audit. According to some researchers, internal audit helps to reduce the cost of external audits as well as increase its reliability. However, ultimately, the organization of internal control and audit which will include a more full analysis of the information reliability than external audit, the total costs will be higher. According to researches with using correlation and regression analysis techniques, the less functions are related to the external audit company, the more is the personnel of the internal audit department and control.

In order to the most accurately determination of the strategy for the development of internal control system, it is necessary to implement actions to improve its efficiency and the quality of the procedures. Therefore, it is necessary to reliably determine the current status of the internal control system. Recommended by the Ministry of Finance methodology of internal control evaluation is presented in Appendix N 1 to the document PZ-11/2013 "The organization and implementation by the economic entity the internal control the facts of economic life, the accounting and preparation of financial (accounting) statements". Evaluating the effectiveness of internal control can be based on compliance with the objectives of ongoing procedures tasks control structures or on the basis of improved performance indicators of controlled structures. The effectiveness of the internal control services increases if motivation determined and conditions created for the development of internal control and audit department employees. Model of effective internal control should include three components: the control system department, financial risk control and internal audit service.

An effective system of internal control must ensure the protection and safeguarding of assets, registers and information, the prevention and detection of errors and distortions, the execution of orders and instructions to company management to ensure the accuracy and completeness of the accounting records and the timely production of reliable financial statements. The effectiveness of internal control is of great importance both for the corporation as a whole and to enhance the efficiency of subsidiaries, departments, divisions, improve business processes. This is due to the fact that control how the control function, acts as a link and a means of feedback between management and staff of the company.

In modern conditions of managing, a lot of interest from the point of view of assessing the effectiveness of various corporate services causes the system of Key Performance Indicators (KPI). Key performance indicators enable management to determine the achievement of strategic and tactical purposes to assess the financial position of a business entity (Abe and Kudo, 2016; Strelnik *et al.*, 2015). It is therefore proposed to develop a system of key financial indicators based on which internal financial control department would have the opportunity to evaluate not only the safety of resources and their intended use but also penetrate into the evaluation of the effectiveness more deeply, assess whether the target strategic and operational settings of corporation development are performed (Zhou *et al.*, 2016). Practically, this means that the internal control department could expand the scope of its competences and to use elements of financial controlling and strategic management in its activities. For this purpose, it is necessary to test a standard set of financial indicators in terms of their impact on the financial performance of the company and by the econometric analysis selected for use in the internal control of the ones that have the most significant effect on the resulting value measuring indicator.

RESULTS AND DISCUSSION

Thus, the research hypothesized the existence of a statistically significant relationship between the standard financial KPI and financial efficiency indicator. In the model as the dependent variable is used the economic value added. The following independent variables were selected: financial leverage, the share of other income and expenses in total income and expenses of the company, the amount of the arbitration costs of the company during the reporting period, current ratio, the effective rate of income tax, receivables and payables turnover period, asset turnover, rate on assets, the share of costs in revenues (Table 2).

Table 2: The list of variables

Variables	Description
Y	Economic value added
X_1	Financial leverage
X_2	The share of other income in total income of the company
X_3	The share of other expenses in total expenses of the company
X_4	Amount of the arbitration costs
X_5	Current ratio
X_6	The effective income tax rate
X_7	Receivables turnover period
X_8	Payables turnover period
X_9	Asset turnover
X_{10}	Rate on assets
X_{11}	The share of costs in revenues

Table 3: Correlation matrix, %

Factors	Y	X_1	X_2	X_3	X_4	X_5	X_6	X_7	X_8	X_9	X_{10}	X_{11}
Y	1											
X_1	-8	100										
X_2	-9	14	100									
X_3	-30	7	81	100								
X_4	-11	-6	-12	-18	100							
X_5	-6	-5	42	36	-6	100						
X_6	-3	0	5	6	-9	-3	100					
X_7	-5	12	58	53	-13	58	25	100				
X_8	-9	-3	26	42	-5	14	-2	15	100			
X_9	18	-9	-28	-42	8	-17	-1	-41	-19	100		
X_{10}	75	-15	-12	-38	-12	3	-1	-1	-9	33	100	
X_{11}	1	-7	33	43	-6	47	-1	31	92	-17	6	100

Table 4: The results of the initial regression model without exception of variables

Variables	Coefficient	SE	t-statistics	p-values
Const	15795.3	7410.17	2.1316	0.03503
Financial leverage	-1126.95	464.686	-2.4252	0.01675
The share of other income in total income of the company	28.4011	40.0944	0.7084	0.48007
The share of other expenses in total expenses of the company	-22972.4	16677.1	-1.3775	0.17086
Arbitration costs	-1.98693	1.65438	-1.2010	0.23205
Current ratio	-9673.99	3942.27	-2.4539	0.01553
the effective income tax rate	3536.95	4438.72	0.7968	0.42708
receivables turnover period	13.0748	9.24464	1.4143	0.15980
payables turnover period	1896.38	308124	0.0062	0.99510
Asset turnover	5585.73	6041.32	0.9246	0.35699
rate on assets	-1.95083	5.62554	-0.3468	0.72935
the share of costs in revenues	-586.983	301.911	-1.9442	0.05415

The research was conducted on the basis of empirical data on 45 Russian companies among which we should highlight such major companies as JSC "NK Rosneft", PJSC " Norilsk Nickel", JSC "ALROSA", JSC MOESK. In addition, the sample contains some of the largest economic entities of the Republic of Tatarstan including JSC"Nizhnekamskneftekhim", JSC "Kazanorgsintez" JSC "Tatneft". The source of the financial data for the selected companies served by SPARK system the largest database of companies from Russia, Ukraine and Kazakhstan. Data were collected for 3 consecutive years.

In order to confirm or refute the hypothesis, we made correlation matrix (Table 3). As can be seen from the correlation matrix, the highest correlation of EVA is observed with factors X_3, X_9, X_{10} that is with a share of other costs, rate on assets and asset turnover. It is 29.77, 17.79 and 75.03%, respectively. The lowest correlation was found with the factors X_6 and X_{11}, i.e., an effective rate of income tax and share of costs in revenue (3.00 and 1.05%, respectively).

Next it we made classical regression model which is presented in Table 4 in original form (without exception insignificant variables).

It should be noted that the coefficient of determination was only 65.02% and the revised coefficient of determination is 63.73% which may be indicative of certain problems encountered in the construction of the model (heteroscedasticity, multicollinearity). However, at a significance level of 0.01 according to the Snedecor criteria model is significant.

Table 5 shows the final regression model, composed in the classical way, already containing the remaining (after the elimination of insignificant variables according to the Student's t-test) 3 variables from the original 11,

Table 5: The final regression model (classical)

Variables	Coefficient	SE	t-statistics	p-values
Const	20446.80	4048.580	5.0504	<0.00001
Financial leverage	-1234.27	111.784	-11.0416	<0.00001
Current ratio	-10432.70	3749.800	-2.7822	0.00620
The share of costs in revenues	-603.24	275.449	-2.1900	0.03029

Table 6: The result of the regression analysis by the weighted least squares method

Variables	Coefficient	SE	t-statistics	p-values
Const	11345.9	1734.02	6.5431	<0.00001
Financial leverage	-1566.42	122.195	-12.8190	<0.00001
The share of other income in total income of the company	32.5419	12.8731	2.5279	0.01269
Amount of the arbitration costs	-1.28256	0.524735	-2.4442	0.01588
Current ratio	-4621.59	1623.13	-2.8473	0.00514
Rate on assets	4.92342	1.67141	2.9457	0.00383
The share of costs in revenues	-404.705	105.832	-3.8240	0.00020

including financial leverage, the current ratio and the proportion of costs in revenues. Thus the first two factors are significant at the one percent level while the third to five percent level of significance. Model is significant by the fisher test.

However, obtained by the classical method of regression analysis model has a relatively high standard error (25127.26 million RUR). That is the predicted value of the average EVA may differ from the actual to this amount. This value of the deviation does not allow management to make conclusions on the basis of the model and makes it difficult to use in practice. Therefore, for further modeling we used weighted least squares method. The calculation results are shown in Table 6. The resulting model is described by the following Eq. 1:

$$Y = -1566.42 \times \frac{1}{x_1} + 32.54 \times \frac{1}{x_2} - 1.28 \times x_4 - 4621.59 \times \frac{1}{x_5} + 4.92 \times x_{10}^2 - 404.71 \times \frac{1}{x_{11}} + 11345.9 \quad (1)$$

Where:

x_1 = Financial leverage

x_2 = The share of other income in total income of the company

x_4 = Amount of the arbitration costs, million RUR

x_5 = Current ratio

x_{10} = Rate on assets

x_{11} = The share of costs in revenues

The proposed model allows management and corporation owners to visualize the corporate financial performance and show the relationship between the value of corporation and quality of business processes. Also, it can be concluded that in the final model based on accounting data indicators with sufficient accuracy can predict the economic value added. In the context of this research, this means that these indicators could be used as financial KPI in internal financial control.

CONCLUSION

On the basis of the model financial control departments can quickly assess and develop recommendations to improve the activities of the corporation and its subsidiaries on the basis of target performance indicators. For example, a specific value of financial leverage in the model will depend on the capital structure of the company, i.e., the company can assess at what ratio of equity and debt financing EVA is the highest. Reducing the share of other income leads to an increase in economic value added of the company. For this reason, the company may also assess the impact of reducing the share of other income on EVA and thus control the cost. To this, the economic entity should focus on the core of business which in theory should increase the efficiency of the company and control, since most employees is the most competent in the matters of its main activities. Arbitration costs lead to a reduction in the economic value added of the corporate. For this reason, corporations need to tighten control over the process of disputes and conflicts arising in the ordinary activities. It may be necessary to develop methods of influence on contracting parties that will address current issues of the most peaceful and least costly way. In this situation, the company will be more likely to increase the added value of the company and reduce the cost of various resources to conduct arbitration proceedings. There is also a need for cost management (share of costs in revenues). Cost can be significantly overstated due to inefficient production process, property damage, shortages and other factors. Accordingly, corporate should improve the quality of internal control in order to prevent misuse of resources. In addition, corporate should increase the return on assets to maximize the value that can be achieved by increasing the income or reducing assets. Scientifically based inclusion KPI system in the sphere of internal control can be in our opinion, widely in demand in the corporate structures and have a high practical significance.

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