# EMPIRICAL STUDY FOR RISK-CONTROLLING MECHANISM EFFICIENCY OF ECONOMICS SUSTAINABILITY MANAGEMENT

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**ABSTRACT— *This paper examines an empirical study of the application of a risk-controlling mechanism to manage the economic sustainability of a manufacturing enterprise. The empirical study takes place in two consecutive time periods. This allows execution of comparative analysis and evaluation of the achieved effectiveness from the application of the risk-controlling mechanism. The evaluation of the achieved efficiency is done with quantitative and qualitative assessments. The article presents data from the conducted study and presents the obtained assessments. The assessments obtained reveal an increase in efficiency achieved in managing the economic sustainability of the production plant. Results of unstructured interviews are presented, revealing guidelines for improvement of the approved mechanism.***

**Keywords:** pilot input, risk-controlling mechanism, economic sustainability, evaluation, effectiveness

## 1. INTRODUCTUON

Consideration of sustainability, such as stability and immutability, determines its essential role in ensuring that the set targets of the parameters that characterize it are achieved. In this article, such factors have determined ROI ratios and total liquidity.

Effective achievement of these target values requires effective management decisions. In this case, efficiency as an economic category should also be considered as a management one. Peter Drucker, in defining his five basic principles of management effectiveness, determines that effective managers are orienting towards the end result (Давидков, 2011). Some Bulgarian authors (Хрисоскулова at al., 2012), (Gospodinova, 2017) define an organization to be effective if it is able to formulate, set, and achieve its goals that are tied to its strategic development. Interesting definitions are given by the Court of Auditors Act in its additional provisions. Efficiency is considered to be "the degree of achievement of the auditor's objectives while respecting the actual and expected performance of its activities". Another aspect which considers the effectiveness in the above-mentioned legal act is "to achieve maximum results from the resources used in carrying out the activity of the audited object".

Summarizing the above regarding efficiency and economic sustainability, it can be said that effectiveness is the degree of achievement of the set goals that characterize the economic sustainability of the manufacturing enterprise. This characteristic can be seen as a criterion of sustainability - economic sustainability. In addition, standard ISO 9004:2009 "Managing the long-term success of each organization - Quality Management Approach" looks at sustained success as satisfying stakeholders in a balanced way and in the long run. This balancing is carried out in an environment under constant change, which allows it to be characterized as an undefined

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environment.

Examination of uncertainty invariably focuses on risk assessment in achieving rationality, efficiency and economic sustainability. The strong correlation between these categories of risk is determined by the definition of risk according to standard BDS ISO 31000:2009 „Risk Management. Principles and guidelines". This standard defines the risk (from the point of view of uncertainty) as influence of the uncertainty in achieving objectives.

From the point of view of effectiveness of economic sustainability management, the risk-controlling mechanism performs a consultative function. By its operation, it provides an information resource that assists management in making management decisions related to the achievement of the target values of the parameters that characterize economic sustainability. The management expertise allows these decisions to be both rational and to not jeopardize the achievement of the enterprise's overall strategic goals - rationality and total sustainability.

In order to assess the possible increase in the effectiveness of the management of the ES (Economic Sustainability) through the implementation of the risk-controlling mechanism, it is necessary first to specify the aspect in which this effectiveness will be considered:

- Managerial efficiency - Decrease of deviations from the defined ROI target values and the overall liquidity ratio;

- Economic efficiency - decrease in management costs for management of the economic sustainability of the enterprise;

- Raising expert judgment - satisfaction with the effectiveness achieved by managing economic sustainability with a risk-controlling mechanism.

## 2. EMPIRICAL SUDY

The empirical study was carried out in a Bulgarian manufacturing company, carrying out activities related to the design, manufacture and installation of metal structures. An implementation team was formed to carry out the task of organizing and ensuring the implementation of the pilot introduction of the risk-controlling mechanism and the collection of the necessary data to evaluate the results. The period in which the empirical study was conducted was two consecutive months. In the first month data on the management of the economic sustainability of the enterprise without risk-controlling mechanism were taken and in the second month data were taken with application of the mechanism. This sequential measurement was due to the inability of management to make management decisions by having information from the risk-controlling mechanism and at the same time to abstain from it in managing economic sustainability.

A coefficient of rationality has been calculated for determining the justification for the pilot introduction of the risk-controlling mechanism – ratio between expected benefits and costs (table 2.1).

*Table 2.1* Justification for the pilot introduction

| | |
|---|---|
| Expected benefits of introducing RCM (BGN) | 12400.00 |
| Expected costs associated with the introduction of RCM (BGN) | 1170.00 |
| Coefficient of rationality | 10,6 |

The calculation of the coefficient is made on the basis of the estimated data provided by the team who introduced the mechanism. Acceptance criterion for start of the pilot introduction is obtaining of factor greater than 1. The calculated factor 10,6 confirms to the manager of the enterprise the justification for conducting the pilot input.

The team leader introducing the mechanism made an informational study and as a result, he drafted and proposed for approval a costly budget for the pilot introduction of the risk-controlling mechanism – the budget proposal was accepted by the owner.

*Table 2.2* Budget for the costs related to the introduction of a risk-control mechanism

| Costs: | Measure: | Quantity: | BGN | Total: |
|---|---|---|---|---|
| Work station and software | Piece | 1 | 980.00 | 980.00 |
| Management | Man/hours | 7 | 12.50 | 87.50 |
| Managerial staff | Man/hours | 6 | 9.94 | 59.64 |
| Training | Man/hours | 4 | 9.94 | 39.76 |
| | | | Total: | 1166.90 |

In the enterprise where the empirical study was conducted, there are no ERP system and controlling systems and the existing organizational management structure is linear in character. For these reasons, the logical positioning of the risk-controlling mechanism is part of the activity of the Accounting Department, which focuses on the operation of the enterprise. Figure 1 presents the positioning of the risk-controlling mechanism in the organization-management structure of the enterprise in the empirical study.
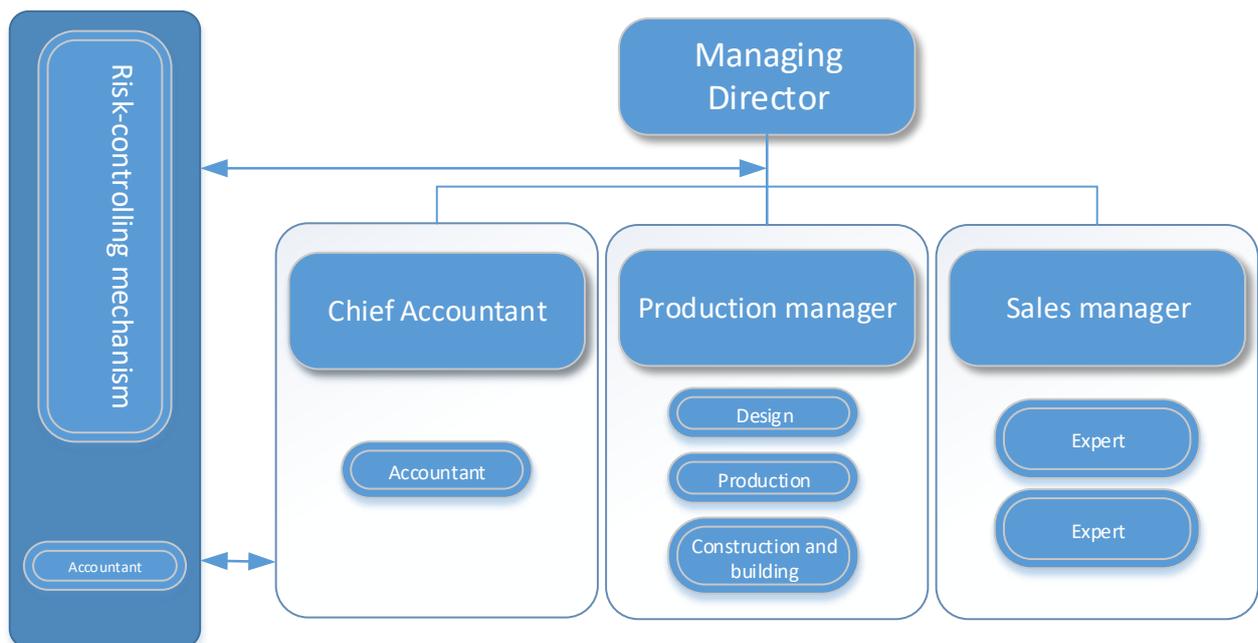


*Figure 2.1* Positioning the risk-controlling mechanism in its pilot introduction

In the enterprise where the empirical study was conducted, there are no ERP system and controlling systems and the existing organizational management structure is linear in character. For these reasons, the logical positioning of the risk-controlling mechanism is part of the activity of the Accounting Department, which focuses on the operation of the enterprise. Figure 2.1 presents the positioning of the risk-controlling mechanism in the organization-management structure of the enterprise in the empirical study.

The following benchmarks for the ROI parameters and the overall liquidity ratio were set during the period of assessment of the achieved efficiency in management of economic sustainability:

- 1,04 coefficient of profitability of working capital (ROI);

- 1,58 coefficient of total liquidity (CTL).

These values were not changed in the two one-month periods in which the economic sustainability management assessment was made.

## (1) **Quantified assessment of the achieved level of effectiveness**

o *Index analysis*

These are results that take into account the deviations from the set objectives for each day when a decision has been taken to manage the ES or a reference to its current status has been requested. The data is presented in table 2.3 and table 2.4. Aggregate indexes are used for the calculations – $I_p$ as permanent basis is target value (formula 1).

*Table 2.3* Index analysis of deviations from defined target values for ES management without RCM

| Reporting date | Target values: | | Reported values without the use of RCM | | Aggregate indexes (Ip): | Aggregate indexes (Ip): |
|---|---|---|---|---|---|---|
| | ROI | CTL | ROI | CTL | ROI | CTL |
| 02.06.2017 | 1.04 | 1.58 | 1.01 | 1.65 | 0.971 | 1.044 |
| 05.06.2017 | 1.04 | 1.58 | 1.02 | 1.68 | 0.981 | 1.063 |
| 07.06.2017 | 1.04 | 1.58 | 1.02 | 1.70 | 0.981 | 1.076 |
| 08.06.2017 | 1.04 | 1.58 | 1.04 | 1.70 | 1.000 | 1.076 |
| 09.06.2017 | 1.04 | 1.58 | 1.03 | 1.71 | 0.990 | 1.082 |
| 12.06.2017 | 1.04 | 1.58 | 1.03 | 1.72 | 0.990 | 1.089 |
| 13.06.2017 | 1.04 | 1.58 | 0.99 | 1.72 | 0.952 | 1.089 |
| 14.06.2017 | 1.04 | 1.58 | 0.99 | 1.73 | 0.952 | 1.095 |
| 15.06.2017 | 1.04 | 1.58 | 0.98 | 1.73 | 0.942 | 1.095 |
| 16.06.2017 | 1.04 | 1.58 | 0.99 | 1.72 | 0.952 | 1.089 |
| 19.06.2017 | 1.04 | 1.58 | 1.02 | 1.68 | 0.981 | 1.063 |
| 20.06.2017 | 1.04 | 1.58 | 1.04 | 1.60 | 1.000 | 1.013 |
| 21.06.2017 | 1.04 | 1.58 | 1.06 | 1.59 | 1.019 | 1.006 |
| 22.06.2017 | 1.04 | 1.58 | 1.06 | 1.59 | 1.019 | 1.006 |
| 23.06.2017 | 1.04 | 1.58 | 1.07 | 1.58 | 1.029 | 1.000 |
| 26.06.2017 | 1.04 | 1.58 | 1.05 | 1.57 | 1.010 | 0.994 |
| 27.06.2017 | 1.04 | 1.58 | 1.05 | 1.55 | 1.010 | 0.981 |
| 28.06.2017 | 1.04 | 1.58 | 1.06 | 1.53 | 1.019 | 0.968 |
| 29.06.2017 | 1.04 | 1.58 | 1.07 | 1.52 | 1.029 | 0.962 |
| 30.06.2017 | 1.04 | 1.58 | 1.07 | 1.52 | 1.029 | 0.962 |

When comparing the number of reporting dates between the top and the next table, the lower number of dates when applying the mechanism impresses. This is due to the improved estimate of the values of the indicators in the application of the RCM and is a prerequisite for higher effectiveness of the management of economic sustainability. An addition to this circumstance is also the obtaining of unit values in the RCM reporting data. They show a match between the reported and defined target values of the parameters.

*Table 2.4* Index analysis of deviations from defined target values in ES management with application of RCM

| Reporting date | Target values: | | Reported values with the use of RCM | | Aggregate indexes (Ip) - with the use of RCM | Aggregate indexes (Ip) - with the use of RCM |
|---|---|---|---|---|---|---|
| | ROI | CTL | ROI | CTL | ROI | CTL |
| 03.07.2017 | 1.04 | 1.58 | 1.07 | 1.52 | 1.029 | 0.962 |
| 04.07.2017 | 1.04 | 1.58 | 1.06 | 1.54 | 1.019 | 0.975 |
| 06.07.2017 | 1.04 | 1.58 | 1.05 | 1.56 | 1.010 | 0.987 |
| 07.07.2017 | 1.04 | 1.58 | 1.05 | 1.56 | 1.010 | 0.987 |
| 10.07.2017 | 1.04 | 1.58 | 1.04 | 1.57 | 1 | 0.994 |
| 11.07.2017 | 1.04 | 1.58 | 1.03 | 1.58 | 0.990 | 1 |
| 12.07.2017 | 1.04 | 1.58 | 1.04 | 1.59 | 1 | 1.006 |
| 13.07.2017 | 1.04 | 1.58 | 1.04 | 1.59 | 1 | 1.006 |
| 17.07.2017 | 1.04 | 1.58 | 1.03 | 1.58 | 0.990 | 1 |
| 18.07.2017 | 1.04 | 1.58 | 1.04 | 1.57 | 1.000 | 0.994 |
| 20.07.2017 | 1.04 | 1.58 | 1.04 | 1.58 | 1 | 1 |
| 21.07.2017 | 1.04 | 1.58 | 1.04 | 1.58 | 1 | 1 |
| 24.07.2017 | 1.04 | 1.58 | 1.05 | 1.56 | 1.010 | 0.987 |
| 25.07.2017 | 1.04 | 1.58 | 1.05 | 1.57 | 1.010 | 0.994 |
| 26.07.2017 | 1.04 | 1.58 | 1.04 | 1.58 | 1 | 1 |
| 27.07.2017 | 1.04 | 1.58 | 1.04 | 1.58 | 1 | 1 |

The comparison of the results obtained in the two tables above is presented graphically in figure 2.2 and figure 2.3. From the figure 2.2, it is evident that when applying the mechanism, there is a considerably larger grouping of the reported values around the target ROI target value. Also, there is a lack of sharp fluctuations in the reported values from the application of the risk-control mechanism. The shorter curve also reveals the smaller number of days that management required referrals, providing it with the information needed to manage economic sustainability with the risk-control mechanism.

$$I_p = \frac{\sum P_1}{\sum P_0} \qquad (1)$$

$I_p$ – Aggregate index for estimating the deviation from target values;

$P_1$ – The reporting value from measured indicator;
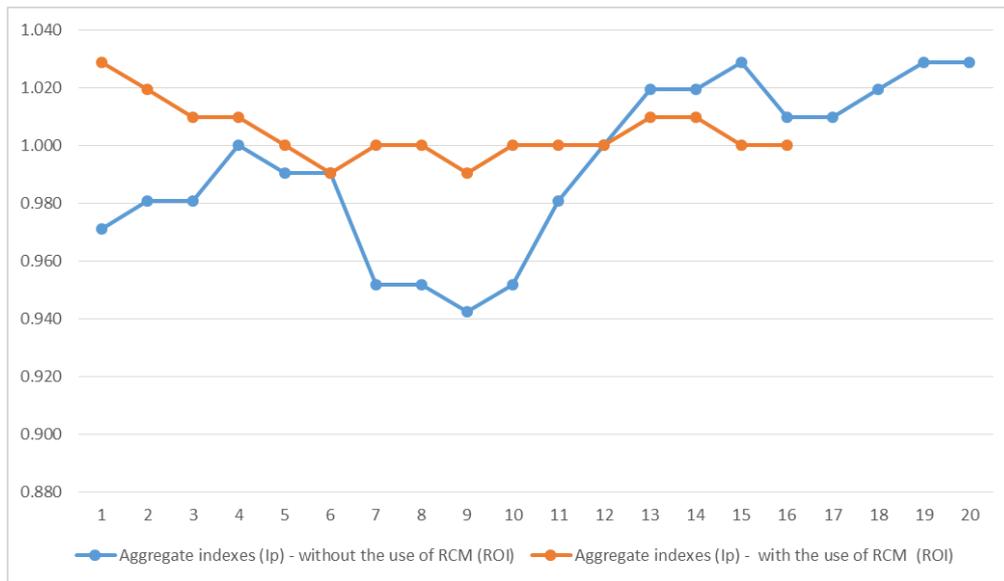
$P_0$ – Target value of measured indicator.

*Figure 2.2* Values of deviations from ROI target values - aggregate index

Figure 2.3 reveals a better grouping of the reported total liquidity ratio around the target value - when applying the risk-control mechanism. This reveals significantly higher management efficiency achieved with the use of the risk-control mechanism. Here, again, a short curve was recorded with the application of the mechanism, the reason for which was already mentioned.
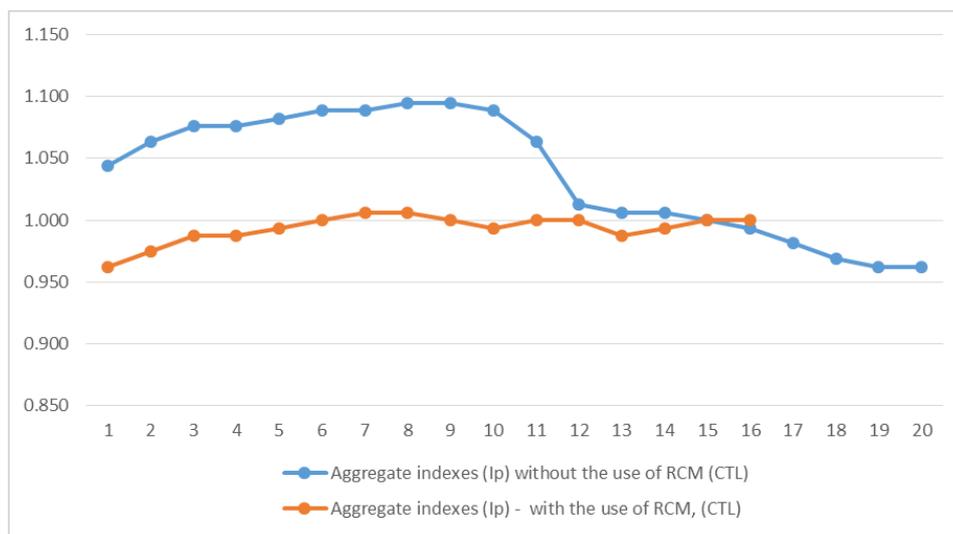


*Figure 2.2* Values of deviations from target values of CTL - aggregate index

Calculations of the average and average quadratic deviation were also performed. The results obtained are presented in table 2.5.

*Table 2.5* Average and root mean squire deviation

| Deviation fron taret values: | Reported values without the use of RCM | Reported values with the use of RCM |
|---|---|---|
| Averige  abslolute deviation (ROI): | 0.025 | 0.007 |
| Averige  abslolute deviation (CTL): | 0.602 | 0.013 |
| Root mean square (ROI): | 0.021 | 0.007 |
| Root mean square (CTL): | 0.061 | 0.014 |

An additional analysis of the resulting deviations is given in table 2.6 – formulas 2 and 3

*Table 2.6* Absolute variation range and relative variation range

| Indicators | Reported values without the use of RCM | Reported values with the use of RCM |
|---|---|---|
| Absolute variation range (ROI) | 0.09 | 0.05 |
| Absolute variation range (CTL) | 0.21 | 0.07 |
| Relative variation range (ROI) | 2% | 0.71% |
| Relative variation range (CTL) | 4% | 1% |

$$R = P_{1\,(max)} - P_{1\,(min)} \qquad (2)$$

$R$ – Absolute variation range of the measured indicators (ROI, CTL);

$P_{1\,(max)}$ – Maximum reported value of measured indicators;

$P_{1\,(min)}$ – Minimum reported value of measured indicators.

$$V_{R\%} = \frac{\sigma}{\mu} * 100 \qquad (3)$$

- $V_{R\%}$ – Relative variation range of the measured indicators (ROI, CTL);

- $\sigma$ – Standard deviation of the measured indicator;

- μ – Average arithmetic value from reporting value of the measured indicator.

The presented results in the table 2.5 and 2.6 show lesser deviations in the economic sustainability management using the risk control mechanism.

o *Management costs*

The reporting of total labor costs related to the management of economic sustainability gives a good idea of the achieved economic efficiency in the management of economic sustainability and the application of the risk controlling mechanism - table 2.7.

*Table 2.7* Costs of managerial work to manage economic sustainability

| Reported values without the use of RCM | | | | Reported values with the use of RCM | | | |
|---|---|---|---|---|---|---|---|
| Position: | Hours: | Pay rate (BGN per hour): | Labor costs (BGN): | Position: | Hours: | Pay rate (BGN per hour): | Labor costs (BGN): |
| Management - labor for decision making | 14.50 | 28.40 | 411.80 | Management - labor for decision making | 12.50 | 28.40 | 355.00 |
| Labor of managerial units - providing information for decision making | 22.00 | 15.10 | 332.20 | Labor of managerial units - providing information for decision making | 19.50 | 15.10 | 294.45 |
| | | Total costs: | **744.00** | | | Total costs: | **649.45** |

The table shows that there is a reduction in labor costs for managing economic sustainability at the amount of 94.55 BGN. This cost reduction shows an increase in the cost-effectiveness of economic sustainability management on a cost-base basis of 13%. The increase in the efficiency of managerial work by 14%, and that of the management units involved in the information provision of the managerial decisions taken is 11%.

Labor costs for managing economic sustainability are further analyzed in table 2.8. The calculations in the table are based on formula CML (formula 4) and CWL (formula 5).

$$CML = \frac{H_m * AMP}{WL} * 100 \qquad (4)$$

*CML* – Share of labor cost for decision-making in total labor cost for ES management;

*AMP* - Average hourly rate of the decision-making;

$H_m$ – Hours worked by decision making – ES management;

*WL* – Total management labor costs for ES management.

$$CWL = \frac{H * AWL}{WL} * 100 \qquad (5)$$

*CWL* – Share of labor costs from the management units in total labor cost for ES management;

*AWP* – Average hourly rate of the management units;

*H* – Hours worked by management units;

*WL* – Total management labor costs for ES management.

*Table 2.8* Relative indicators for the distribution of labor costs for management of ES

| Indicator | Reported values without RCM use | Reported values with RCM use | Amendment of indicators: |
|---|---|---|---|
| CML | 55.35% | 54.66% | 1.24% |
| CWL | 44.65% | 45.34% | -1.54% |

The table shows the benefits of applying the risk-control mechanism. Calculation of the relative change in management costs based on the total costs of the base period shows - a decrease of the managerial labor by -1,24% (which is desired effect), and that of the management units by 1,54%.

On the basis of the reported general management costs for labor and the achieved profit and total income from the enterprise, coefficients are calculated by formulas 6 and 7 - tables 2.9.

$$E_p = \frac{\overline{P_i}}{WL} \qquad (6)$$

$E_p$ – Profitability of the total management labor cost for ES management;

$\overline{P_i}$ – Average profit for the period under review (i).

$$E_{np} = \frac{\overline{H\Pi_i}}{WL} \qquad (7)$$

$E_{np}$ – Efficiency of the total management labor cost for ES management;

$\overline{H\Pi_i}$ - Average total revenue for the period under review.

*Table 2.9* Efficiency ratios

| Indicators | Reported values without RCM use | Reported values with RCM use | Change in efficiency |
|---|---|---|---|
| *Ep* | 354.839 | 406.498 | 14.558% |
| *Enp* | 1422.043 | 1629.071 | 14.558% |

The results presented in the table show an increase in the achieved effectiveness of the management of the economic sustainability with application of the RCM.

(2) **Qualitative assessmen**t

o   Measurement and comparison of the achieved efficiency

Figure 2.3 presents a comparison of the obtained estimates of five indicators characterizing the expertly assessed effectiveness of the managed economic sustainability of the enterprise.
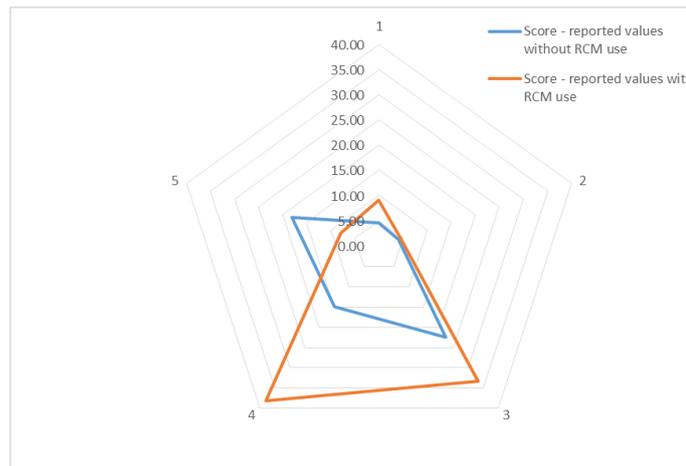
*Figure 2.3* A qualitative assessment of the effectiveness achieved by managing economic sustainability

The five indicators on which the experts gave their assessments and on which the above figure is based on are the following:

1.  Estimation of the achieved effectiveness in managing economic sustainability;

2.  Assessment of information provision in making management decisions to manage economic sustainability;

3.  Evaluation of the capabilities of planning for anticipatory actions at risk for economic sustainability;

4.  Assessment of the possibility of proactive control over decision making related to economic sustainability;

5.  Assessment of the instruments used to manage economic sustainability.

Expert assessments are given in a percentage (0-100%) which is then weighted by a weighting coefficient ($w_i$, formula 8). Thus, the maximum total number of points under the indicators is 100 points.

$$\sum_{i=1}^{n} W_i = 1 \qquad\qquad (8)$$

$w_i$ – weighting coefficient (factor)

This comparison reveals the experts' assessment of economic sustainability management with and without risk-control mechanism. RCM management gets a higher score on the benchmarks. An exception is only for the 5th indicator, which indicates an assessment of the effectiveness achieved using the toolbox. As a result of this assessment, an in-depth, unstructured interview was conducted with the evaluating expert. As a result, the reason for this assessment has been clarified, which is associated with dissatisfaction with the lack of automation of work with RCM. The reason for this problem was the lack of an ERP system in the enterprise.

Figure 2.4 shows the integral assessment of the effectiveness of economic sustainability management.
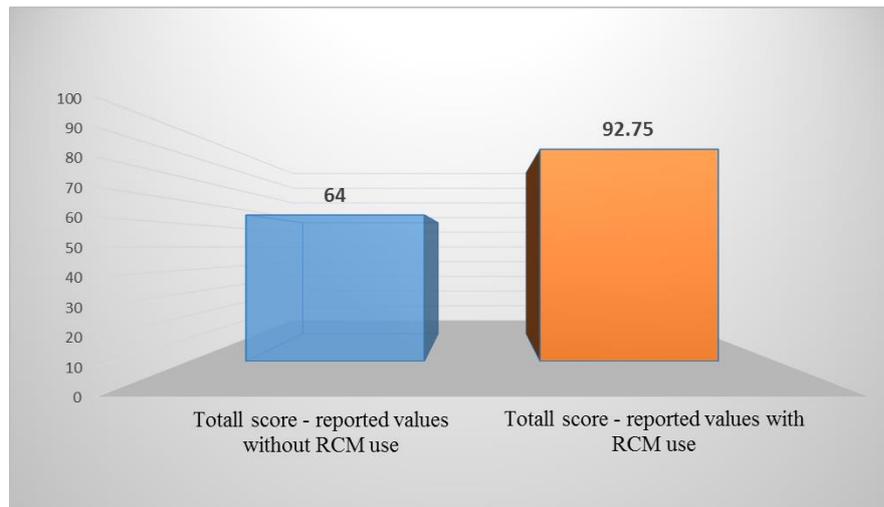
*Figure 2.4* Integral cumulative evaluations of the effectiveness achieved by managing economic sustainability

The figure shows the deviation of the ratings received from the maximum number of points by the expertise evaluation – total of 100 points. This maximum sum represents a reference (the maximum possible positive assessment) and allows to calculate its deviation. The acquisition of the deviation trough the criteria showed in table 2.10 allows linguistic assessments of the efficiency gained from the management of ES.

*Table 2.10* Definition of grades for the linguistic assessments

| Grade | Weak | Average | Good | Very good | Excellent |
|---|---|---|---|---|---|
| Scope of grade – distance from maximum points | Over 50 points | Between 30-49 points | Between 29-20 points | Between 19-10 points | Under 10 points |

Accordance figure 2.4 and table 2.10 can be defined following linguistic assessments:

- Average mark on economic sustainability management without application of risk-controlling mechanism;

- Excellent mark on the management of economic sustainability with application of the risk-controlling mechanism.

o *Qualitative assessment of the effectiveness achieved by the risk-controlling mechanism subsystems*

Qualitative assessments of the risk-controlling subsystems are presented in figure 2.5. The evaluation process proceeds as presented above and used the following three indicators – for each of the subsystems:

- Achieved effectiveness in performing the tasks of the sub-systems;

- Efficiency achieved in the implementation of the typical function of the every sub-system;

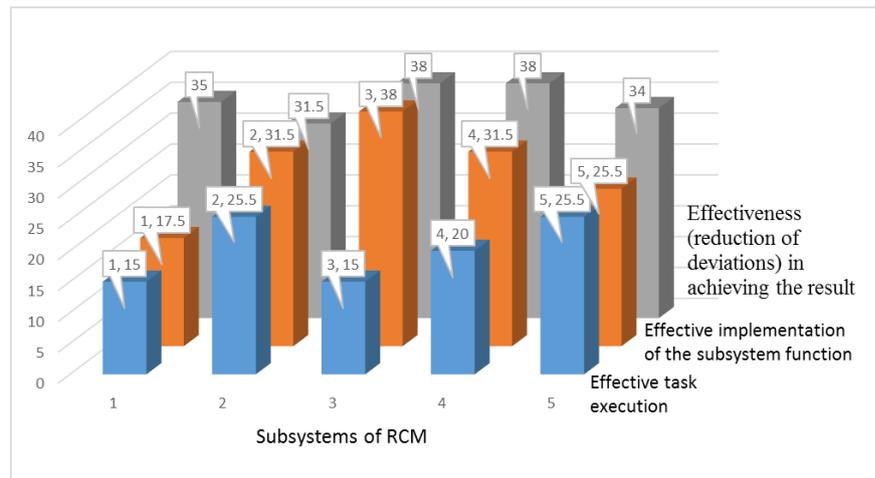- Effective achievement of the defined result of the every sub-system.

*Figure 2.5* Evaluation of the work of the risk-controlling subsystems

The graphical representation of the information in the figure above reveals:

- Relatively lower performance in the subsystem;

- Out of the three indicators, lower marks are observed for the performance indicator; Is the effectiveness of the tasks;

- Low rating of the performance of the service function of the subsystem;

- Satisfaction with the result of the application of all subsystems, indicating the satisfaction of the experts from the overall presentation of the mechanism.

After reviewing the given assessments, an unstructured interview with the experts was carried out on whether these assessments were made. As a result, it was found that the basis of the lower estimates is the absence of an enterprise ERP system that reduces the automated execution of transactions. The following was also found:

- Increased time to work with the mechanism as a result of reduced data migration capability;

- Extending the time for designing of deviations and generating alternative decisions. This leads to a total extension of the time to work with the mechanism;

- The low rating is due to the initial resistance of the employees during the short lead-in period, which puts employees more at a loss - a time to get to know the mechanism and evaluate its usefulness;

- Total satisfaction is due to the provided predictability of the enterprise's business performance and the ability to plan corrective actions.

This is supported by the linguistic assessments received accordance total score of every subsystem (table 2.11) and criteria's in table 2.10. The presented results in table 2.11 leads to the follow linguistic assessments:

- Average for the insured subsystem;

- Very good for the deviation estimation subsystem;

- Excellent for the subsystem that is planning for alternatives to impact unacceptable deviations;

- Very good for the management subsystem;

- Very good for the self-assessment subsystem.

*Table 2.11* Linguistic assessments of RCM subsystems

| Sub-system of RCM | Assurance sub-system | Assessment of deviation | Design of alternatives for the impact of unacceptable deviations | Assurance of taken management decisions | Self-assessment |
|---|---|---|---|---|---|
| Total score (points): | 67.5 | 88.5 | 91 | 89.5 | 85 |

The assessment of the risk-controlling subsystems is first of all about the performance of the mechanism - presentation during the pilot input. Its results are the basis for assessing the future performance of the mechanism.

## 3. CONCLUSION

With the completion of a pilot input period, the collected data and estimates were submitted to the manager of the enterprise. The aim was to justify the need to implement the mechanism for the management of the enterprise's business. The main three arguments in favor of the implementation of the risk-control mechanism after the pilot introduction are:

- Reduce the deviations from the defined ROI targets and the overall liquidity ratio;

- Decrease in managerial costs to manage the economic sustainability of the enterprise;

- Raising the expert evaluation for satisfaction with the effectiveness achieved by managing economic sustainability with a risk-control mechanism.

These achievements also reveal an increase in management and economic efficiency that is seen as:

- The increase in economic efficiency is considered in terms of increase of the accuracy of achievement of the set objectives at reduced managerial costs;

- Increasing management efficiency by reducing deviations from the set target values of the parameters that characterize economic sustainability.

On the basis of the presented results, it was decided not to continue the pilot implementation and to move towards the introduction of the risk control mechanism for managing the economic sustainability of the enterprise.

## 4. ACKNOWLEDGEMENTS

## 5. SUPPLEMENTAL DATA

ГОСТ Р ИСО 31000-2010, ГОСТ Р ИСО/МЭК 31010-2011 and ГОСТ ИСО 9004-2010 are available in the PDFs of the following three links:

http://www.novsu.ru/file/1156050 accessed on [21-08-2017]

http://ivan-shamaev.ru/wp-content/uploads/2013/05/31010-2011_Russia.pdf accessed on [21-08-2017]

http://www.novsu.ru/file/1027871 accessed on [21-08-2017]

Other links

http://www.novavizia.com/pityr-drakyr/ accessed on [21-08-2017]

http://www.lex.bg/en/laws/ldoc/2135219205 accessed on [21-08-2017]

## 6. REFERENCES

**E-journal article**

Давидков Ц. (2011). За синонимите на доброто управление. Публични публикации.bg, Available: http://ejpp.eu/index.php/ejpp/article/viewFile/29/23 . Accessed on [2017-08-21]

Хрисоскулова Х., Цветков Б., Петрова К., Лепоева Г. (2012). Доклад от комисия, назначена със Заповед РД-16-1206/21.09.2012г. на МИЕТ относно планова проверка на инспектората на МИЕТ с предмет „Оценка на ефективността на дейността за звената в МИЕТ". Available: https://www.mi.government.bg/files/useruploads/files/inspektorat/doklad_efektivnost.pdf . Accessed: [2017-08-21]

Gospodinova K., Assessment of the economical effectiveness of applying auditing software. Available: http://journal.ue-varna.bg/uploads/20150520104811_1701035474555c666bcca69.pdf . Accessed: [2017-08-21]

## 7. GLOSSARY

ERP – Enterprise Resource Planning, integrated management system.

ROI – Return of Investment.

CTL – Coefficient of total liquidity

RCM – Risk-controlling mechanism

ES – Economic Sustainability