MANAGEMENT OF ECONOMIC EFFICIENCY IN SMALL AND MEDIUM-SIZED ENTERPRISES

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Abstract: The ability to measure and manage economic efficiency in small and medium-sized enterprises is highly valued competitive advantage. Economic efficiency reveals the absolute size of indicators of efficient usage of resources employed, efficiency and effectiveness of business processes, products and services. While measuring and managing economic efficiency, it is necessary to reflect the influence of internal and external business environment and take into account the diversity of assessment of subject position. Sources of information for assessing the overall economic efficiency of enterprises with subsequent management can be derived from the financial statements of financial accounting. In the proposed plan of economic efficiency it is important for business owners and managers in the to establish appropriate indicators of economic efficiency and to follow and support the long-term strategic goals of the company.

Keywords: *economic efficiency, management, small and medium-sized businesses, return on equity*

1 Introduction

The ability to manage economic efficiency in small and medium-sized enterprises is a highly esteemed competitive advantage in the period after the economic crisis, because it has a very important role in the company's success. All business activities can be characterized by the economic efficiency quantifying the benefits of final effects in more practical terms. The main goal of the owners and managers of companies should be the constant increase of economic efficiency, and the identification of the main factors influencing the effectiveness and a subsequent implementation of findings in the activities of the company with maximal utilization. Economic efficiency examines the absolute size of indicators, economical use of resources embedded in business processes, efficiency of business processes and effectiveness of products. The aim of the paper is to propose a plan of measurement and management of economic efficiency of small and medium-sized enterprise based on the categorization of economic efficiency reflecting the internal and external environment of the company and owner´s perspective of the company.

2 Categorization of economic efficiency

Owners of small and medium-sized enterprises during their business activities often make decisions that fundamentally affect their long-term competitive position, efficiency and profitability. Therefore, the formulation of a strategy to achieve those objectives is of a crucial importance. Strategic management is basically a dynamic process that helps the company to avoid future obstacles. It is necessary because it includes the setting up of corporate goals, motivation, organization, and determination of standards of economic efficiency of enterprises. Business strategy, however, only shows the way how to achieve the objectives; measures of economic efficiency are only the means that makes them easier to achieve.[1]
The effectiveness is a functional feature of the enterprise. It reflects the overall rationality of its activities as a dedicated system that works effectively only on the basis of secure relationships with others.[2]
Efficiency is a relative value representing the ratio between the final effect and the resources used to create this effect. Efficiency can be characterized as a unitary effect of sources respectively costs.[3]
Achieving economic efficiency is therefore the main objective in the implementation of economic and financial activities of the company. It becomes an increasingly important aspect of business processes.[4] The effectiveness of the enterprise is expressed using evaluation of inputs and outputs[5]:

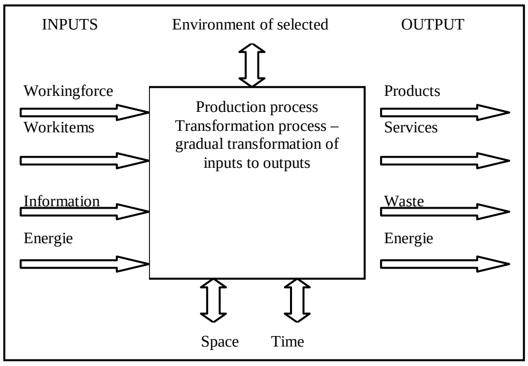
- Inputs are factors of production that have been employed into the enterprise or are consumed in the enterprise. Employed factors of production are expressed as the amount of capital consumed by production factors such as cost of business.
- The output is the output produced for a certain period. Several quantitative indicators are used, most of them are expressed by the volume of production, which is considered as a natural output of the company, or is expressed by value indicators of revenue, sales, value added, etc. The profit is considered to bet the main financial output.

Values of production consist mainly of realized products and services, output of business in relation to consumed production factors, which constitute the inputs. Relational defining of performance can be carried out through the following relationship:

$$Efficiency = \frac{produced\ products\ and\ services}{production\ factors\ consumed} \quad \text{or} \quad Efficiency = \frac{input}{output}$$

Quantitative calculation of effectiveness is based on a comparison of inputs employed and outputs achieved. Economic output and input categories can be interpreted differently.[6]

Fig. 1 Business process illustrating the transformation of inputs into outputs



3 Management of economic efficiency

Historically, the measurement and management of economic efficiency shows the evolution from traditional approaches based on measurement of financial metrics to modern approaches of measuring the value for the owner and shareholder. Theoretical and practical field of measurement and management of economic efficiency have been extended in recent years by a variety of methods and approaches, such as the Balance Scorecard, QFD, Kanban, EFQM and more. The disadvantage of current approaches to be used in small and medium-sized enterprises are unaffordable sophisticated tools used to measure and manage economic efficiency, high cost of implementation, operation and updating. The main disadvantage is the unavailability of methodologies of implementation and the predominance of non-financial measures. For this reason, small and medium-sized enterprises still prefer approaches which are mainly focused on financial measures.

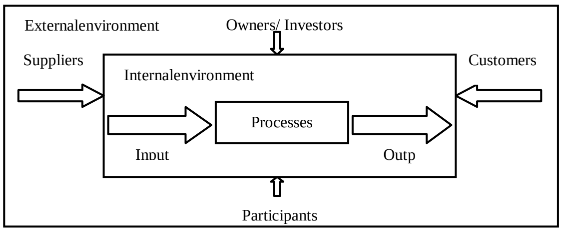
[1] REMEŠ, D., GOSWAMI, K. Měření výkonnosti podniku. *E+M Ekonomie a Management*, 2004, roč. 7, č. 3, s. 59-64. ISSN 1212-3609.
[2] AZIMI, N.,A., WELCH, H., G.,: The effectiveness of cost-effectiveness analysis in containing cost, J Get Intern Med. 1998, 13:664-9.
[3] BOBKOVÁ, D.: *Zvyšovanie productivity práce finálnych procesov v produkčních systémech*. In: Transfer inovácií. č. 10 (2007), s. 243-245. Internet: <http://web.tuke.sk/sjf-icav-stranky/transfer/10-2007/PDF/243-245.pdf ISBN 9788080738327>
[4] MIHOK, J. JANEKOVÁ, J., VIDOVÁ, J.,: *Podnikové hospodárstvo – ekonomika podniku*. Košice: Strojnická fakulta TU, 2005. ISBN 80-8073-406-2.
[5] LIBERKO, I., VIDOVÁ, J.: *Ekonomická hodnotenia ekonomickej efektívnosti podniku*. 20 Inthercathedra, Poznaň: 2004, ISSN 1640-3622, s. 96 – 100.
[6] KUCHARČÍKOVÁ, A., TOKARČÍKOVÁ, E., ĎURIŠOVÁ, M., JACKOVÁ, A., KOZUBÍKOVÁ, Z., VODÁK, J.,: *Efektivní výroba*. 1. Výdání. Brno: Computer Press, 2011. 344s. ISBN 978-80-2512524-3

To measure the economic efficiency it is necessary to take into account the diversity of valuation according to the positions of subjects that are associated with the operation and existence of the company. Such subjects are owners, managers or customers. Owners consider the business effective, if it is able to reach the maximal appreciation of employed capital in the shortest time possible. Customers prefer companies with quality products at a price corresponding to their requirements. Managers, sometimes simultaneously in the position of an owner, evaluate the efficiency of business according to the level of prosperity, market stability, the level of economy and productivity, current status and future trends of cash flows, liquidity, reaction time at changes of the external environment.

3.1 Economic efficiency with regard to the external and internal environment

While measuring and managing economic efficiency, it is necessary to reflect the influence of internal and external business environment. The internal environment is to transform inputs into outputs. Consideration shall also be taken to the external environment that affects the performance of the company – the involved subjects are suppliers, customers, investors and other persons participating affecting the economic efficiency of enterprises. The internal environment can be simply defined in terms of three significant variables inputs, outputs and processes.

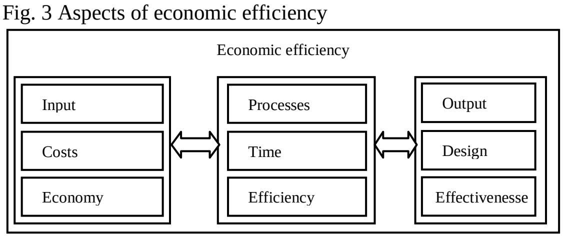
Fig. 2 External and internal business environment



Economy, efficiency and effectiveness are the top criteria of rationality of economic resources employed. All three aspects of economic efficiency are interrelated, interdependent, yet are characterized by specific features. Economy is measured as a relation to the input costs, efficiency is related to the actual process of transformation of business processes and the social effectiveness of production is associated with business processes Economy is generally referred as an aimed action to minimize the resources spent, especially financial resources. From the perspective of business management it is important to maintain a low financial cost, hence the low resource consumption.

Efficiency in its general form indicates the effectiveness of resources employed and benefits they earned. In other words, the efficiency can be expressed as the ratio of output and input of any process, activity or system. In case of a company it is a ratio of the quantity and quality of the final product and the amount of resources invested in the production process.
The effectiveness generally refers to the ability to produce the desired utility. Rating utility takes place at the output level of the final products. Effectiveness is therefore usually the assessment of whether an organization does not produce useless, unwanted or unimportant products.

Fig. 3 Aspects of economic efficiency



Information sources for the assessment of economy, efficiency and effectiveness, thus overall economic efficiency of enterprises with subsequent management are derived from the financial statements of financial accounting. It is a balance sheet, income statement and cash flow statement. These reports contain a summary of the progress and success of economic activity and its impact on the financial situation of the company.[7]
Information sources contain two types of variables:[8]

- Stock variables that characterize the size of each item on a particular day. They result from the balance sheet.
- Flow variables that characterize the size of individual items for a certain period. They explained the change of stock variables at the end of a period compared to the beginning. They result from the profit and loss account and the cash flow statement.

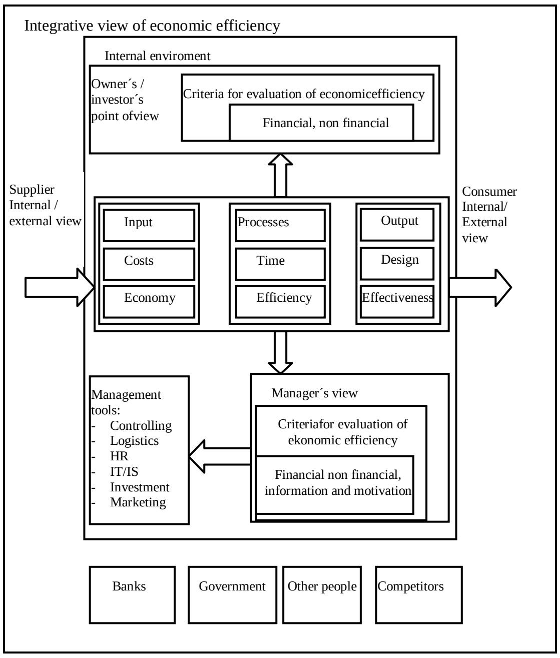
The economic efficiency can be considered as follows: evaluation indicator of economy aimed at the allocation of inputs. Costs may be linked to products directly or indirectly. Indicators of effectiveness indicate the intensity of use of inputs to outputs. These indicators are influenced by both cost efficiency, quality and time. They aim at measuring and controlling the final output (product or service) and have the task to verify its properties and customer satisfaction with the final outcome. Defining of indicators design is therefore based on the final output. In case of intangible output it is necessary to define product requirements. For these reasons, it is insufficient to use financial indicators, but it is necessary to use both financial and non-financial indicators.

3.2 Plan of the measurement and management of economic efficiency in small and medium enterprise

Based on the above consideration a plan of measurement and management of economic efficiency in small and medium-sized enterprise was created with mutual merging of internal and external view of economic efficiency. A view of customers, competitors, financers, suppliers and possibly other person is included in the external environment of the company. Economic efficiency of internal business environment can be seen from the perspective of the business owner and manager. The owner can sometimes be seen from the outside view if it is a limited company with freely tradable shares. Each area may be divided with respect to the sub-processes.

[7] BAČOVÁ, I., HYSKO, M.: *Informačné systémy malých podnikov*. 1. vyd. Bratislava: Ekonóm, 2003. ISBN 80-225-1749-6.
[8] FETISOVÁ, E., VLACHYNSKY, K., SIROTKA, V.: *Finance malých a stredných podnikov*. 1.vyd. Bratislava: IURA EDITION, 2004. ISBN 80-89047-87-4.

Fig. 4 Plan of measurement and management of economic efficiency of small and middle-sized enterprises



It is important for business owners and managers to establish in the proposed plan of economic efficiency appropriate indicators of economic efficiency and to follow and support the long-term strategic goals of the company.

3.3 Metrics – indicators and their types in the context of economic efficiency

Generally speaking, the successful management is hardly possible without setting the economic efficiency standards since the determination of economic efficiency based on measures affects all actions towards achieving the targets. Using the appropriate measures leads to the right decision, therefore increasing economic efficiency, and thus to increase the company's competitiveness.
Metric means strict financial or non-financial measure that is used to assess the level of economic efficiency of specific areas of business performance and management or of the entire enterprise. It serves as a tool for efficiency and performance, with a primary focus on the goal, critical success factors, processes, activities and performance of resources. The metric has the following attributes: name, identification, definition, owner, dimensions, default values, target values, sources of measurement data, measurement procedures and verification procedures. Indicators are classified according to different criteria as absolute and relative, stock or flow, synthetic and analytic. Synthetic indicators display the economic reality very complex. They provide information of the reflected state and development that contains all the relevant characteristics and properties. Synthetic indicators of effectiveness are based on the assessment of the resulting effect of the business activity, which is reflected in net income. They are mainly indicators of profitability. Technically they is measured as the ratio of net income and resources spent. The most commonly used indicators of profitability are return on sales (ROS), assets (ROA), equity (ROE).[9]

[9] KUCHARČÍKOVÁ, A., TOKARČÍKOVÁ, E., ĎURIŠOVÁ, M., JACKOVÁ, A., KOZUBÍKOVÁ, Z., VODÁK, J.,: *Efektivní výroba.* 1. Vydání. Brno: Computer Press, 2011. 344s. ISBN 978-80-2512524-3

4 Return on equity

4.1 Return on equity

Economic efficiency is typically measured as the ratio between profit (before taxes, respectively after tax) and the average amount of either total invested capital (ROA), or equity employed (ROE).[10]
Return indicates how large the return flow of money is in proportion to the capital used for business activities. At the same time return gives the company investors important information and enables comparison with alternative forms of deposit money.[11]
Return on equity expresses a measure of appreciation of own resources. It measures how much net profit is attributable to one crown of capital employed. The basic equation is as follows:[12]

$$ROE = \frac{Net\ profit}{Equity}$$

Profit is the difference between revenues and costs respectively capital increase from the economic activity of the business. It is the most synthetic one of value indicators and criteria of business. Net profit for the period EAT specified in the numerator of ROE indicator is intended for distribution to owners and business development. It can be received as the sum of operating income and extraordinary income minus income tax.[13]
The capital is a production factor with a form of physical capital (buildings, machinery, supplies, etc.) and human capital. The accumulation of capital in addition to technical progress is the main factor of economic growth. Capital is also a residual item of the assets of business after deducting its liabilities. It is synonymous with the net assets. Act No. 513/1991 Coll., The Commercial Code uses the term equity specified in the denominator of the ROE.[14]
The rate of profit calculated on equity is an indicator whether capital has sufficient yield, ie whether it is used with an intensity corresponding to the size of the investment risk. Investor understandably requires that the price he receives form the company for the capital (dividends from shares share from invested deposit, etc.) was higher than the price that would be received in any other form of investment (eg by buying bonds, saving money on financial institution, etc.). This requirement is justified because the investor, who put his capital into equity firm, carries a relatively high risk. If the value of long-term ROE is less than or equal to the yield of securities guaranteed by the government (treasury bills, government bonds, etc.) the company will probably fail. Rational investor in such case will seek to invest his capital in a more convenient and more profitable way.[15]

4.2 Maximizing return on equity

Maximizing the profitability is one of the main goals of the company. A positive sign of its success is the growth of the firm's profitability over time. Increasing the profitability is quite challenging, but there are several options to help. The company should focus on influencing following determinants of profitability or their effects: production structure, natural conditions, economic conditions, the quality of production, the procedures and technologies, the level of utilization of labor, strike price, liquidity, the costs, the turnover of assets, method of business financing, other factors.[16]

[10] KRÁL, B.: *Manažerské účetnictví*. 1. Vyd. Praha: Management Press,2003. 547s. ISBN 80-7261-062-7
[11] SEILER, A.,:*Financial Management: BWL in der Praxis.* Band 2. 3.,überarb. Auflage. OrellFüssli, Zürich. 528 S.
[12] KISLINGEROVÁ, E a kol. *Manažerské finance*. 3. Vydání. Praha: C. H. Beck, 2010. 824s.ISBN 978-80-7400-194-9
[13] KRÁL, B.: *Manažerské účetnictví*. 1. Vyd. Praha: Management Press,2003. 547s. ISBN 80-7261-062-7
[14] HOLMAN, R. *Ekonomie*. 3. Vyd. Praha: C.H. Beck, 2002. ISBN 80-7179-681-6
[15] KOVANICOVÁ, D a KOVANICA, P.: *Pokladyskryté v účetnictví*2.vyd. Praha: POLYGON, 1995. 566s. ISBN 80-85967-07-3.
[16] KUCHARČÍKOVÁ, A., TOKARČÍKOVÁ, E., ĎURIŠOVÁ, M., JACKOVÁ, A., KOZUBÍKOVÁ, Z., VODÁK, J.,: *Efektivní výroba*. 1. Výdání. Brno: Computer Press, 2011. 344s. ISBN 978-80-2512524-3

Return on equity is the result of the combined effects of liquidity, asset management and debt management.[17]

$$ROE = \frac{Net\ profit}{Equity} = \frac{Net\ profit}{Revenues} \cdot \frac{Revenues}{Assets} \cdot \frac{Assets}{Equity}$$

The equation indicates that the management company has three tools to increase ROE with its management:[18]

1. The profit margin - the ratio of net profit per unit of sales. It reflects the company's pricing strategy and ability to control operating costs. A high profitability of sales is mostly the result of good cost control and efficiency in spending of resources and consumption of capital. Profit margin and asset turnover tend to inverse relationship (companies with high profit margins typically achieve low turnover and vice versa).
2. Asset utilization measured by the ratio of sales per unit of assets - can be called asset turnover, therefore the company's ability to use the total assets of the company. The more is the capital capable to produce sales the better. High turnover is a sign of efficient use of capital, or assets which company manages.
3. Leverage - the amount of equity used to finance assets. Increasing the share of foreign capital in the total capital of the company has a positive effect on ROE under the condition that the company can add a value to every crown of debt and this valueis higher than the interest rate of debt. Asset turnover and financial leverage tend to inverse relationship (a company with a low turnover of assets using debt financing)

4.3 Disadvantages of indicator of return on equity

While ROE is generally considered to be the main financial indicator of the business effectiveness, its evaluation must be cautious, as there are three problems related:

1. The problem of time (some activities, such as introducing a new product, cause an increase in costs and thereby reduce the value of ROE, but will grow in the coming years),
2. Problem of the risk, which is ignored by ROE (in general, the higher the risk, the higher the required value of ROE,),
3. Problem of assessment, since it calculates the accounting (historical) values rather than market values, which are crucial for investors.[19]

Despite all the shortcomings ROE analysis is widely used in practice. It represents on the basis of a systematic work with reports a simple concept to identify problem areas in the management of enterprise economic efficiency and their subsequent correction.[20]

5 Conclusion

Every business that wants to work and be successful in the industry should continuously improve the economic efficiency. Economic efficiency is characterized by quantification of all business activities with the resulting effect. Incurred inputs and outputs achieved are compared mutually. Inputs entering into a business process are labor, work items, work equipment and information. Inputs are transformed into individual output process in interaction with time, space and company environment. Outputs are products, services, information and waste.

Measurement and control of economic efficiency can be done by a variety of new methods and approaches (Balance Scorecard, QFD, Kanban, EFQM, etc.), which are financially unaffordable in small and medium-sized enterprises and hence these businesses tend to prefer approaches that focus on financial measures.

Economy, efficiency and effectiveness are three aspects of economic efficiency, which are interconnected, interdependent, while maintaining its own specificities and constitutes the internal environment of the company. Economic efficiency is achieved by minimizing the resources spent. Efficiency is the ratio of the quantity and quality of the end product and the amount of resources invested in the production process. Effectiveness assesses whether the company does not produce unnecessary, unwanted, or unimportant products. Financial accounting is the source of information for the evaluation of economic efficiency.

While measuring and managing economic efficiency, it is important to take into account the diversity of viewpoints from the outside of the business (owners, managers and customers). Owners expect to maximize the shareholders' capital in the shortest possible time. Managers evaluate the level of prosperity, stability in the market, the level of efficiency, productivity, status and trends of cash flows, liquidity, speed of reaction to changes in the external environment. Customers prefer companies with quality products at a price corresponding to the customer's wishes.

The plan of measurement and management of economic efficiency in small and medium-sized enterprises is based on mutual merging of internal and external view of economic efficiency. The external environment consists of customers, suppliers, financing parties, competitors and others. The internal environment of economic efficiency can be seen from the manager and owner. The individual partial areas of the company can be branched with respect to the sub-processes.

It is not possible to manage the business without measuring the economic efficiency. Determination of standards affects negotiations towards achieving the targets. Synthetic indicators have a complex and explicit role in illustrating the economic reality of the company. They are mainly indicators of return on equity (ROE). The company has three tools to increase ROE through its management. This is the profit margin, asset utilization and financial leverage. For more accurate measurement and control of economic efficiency, owners and managers use further decomposition of ROE profitability indicators such as DuPont analysis and dynamic analysis of ROE to help you find the factors most affecting the return on equity and assess their impact on the development of sales, equity, assets and profits.

Literature:

1. AZIMI, N.,A., WELCH, H., G.,: The effectiveness of cost-effectiveness analysis in containing cost, J Get Intern Med. 1998, 13:664-9.
2. BAČOVÁ, I., HYSKO, M.: *Informačné systémy malých podnikov*. 1. vyd. Bratislava: Ekonóm, 2003. ISBN 80-225-1749-6.
3. BOBKOVÁ, D.: *Zvyšovanie productivity práce finálnych procesov v produkčních systémech*. In: Transfer inovácií. č. 10 (2007), s. 243-245. Internet: <http://web.tuke.sk/sjf-icav-stranky/transfer/10-2007/PDF/243-245.pdf ISBN 9788080738327>
4. FETISOVÁ, E., VLACHYNSKY, K., SIROTKA, V.: *Finance malých a stredných podnikov*. 1.vyd. Bratislava: IURA EDITION, 2004. ISBN 80-89047-87-4.
5. HOLMAN, R. *Ekonomie*. 3. Vyd. Praha: C.H. Beck, 2002. ISBN 80-7179-681-6
6. KISLINGEROVÁ, E a kol. *Inovace nástrojů ekonomiky a management organizací*. 1. Vydání. Praha: C. H. Beck, 2008. 293s. ISBN 978-80-7179-882-8
7. KISLINGEROVÁ, E a kol. *Manažerské finance*. 3. Vydání. Praha: C. H. Beck, 2010. 824s.ISBN 978-80-7400-194-9
8. KOVANICOVÁ, D a KOVANICA, P.: *Pokladyskryté v účetnictví*2.vyd. Praha: POLYGON, 1995. 566s. ISBN 80-85967-07-3.
9. KRÁL, B.: *Manažerské účetnictví*. 1. Vyd. Praha: Management Press,2003. 547s. ISBN 80-7261-062-7
10. KUCHARČÍKOVÁ, A., TOKARČÍKOVÁ, E., ĎURIŠOVÁ, M., JACKOVÁ, A., KOZUBÍKOVÁ, Z.,

[17] SYNEK, M. a kol.:*Manažerskáekonomika*. 4.vyd. Praha: Grada Publishing, 2007. 464s. ISBN 978-80-247-1992-4.
[18] KISLINGEROVÁ, E a kol. *Inovace nástrojů ekonomiky a management organizací*. 1. Vydání. Praha: C. H. Beck, 2008. 293s. ISBN 978-80-7179-882-8

[19] SYNEK, M. a kol.: *Podniková ekonomika*. 3.vyd. Praha: C.H. Beck, 2003. ISBN 80-7179-736-7.
[20] PARRINO, R.; KIDWELL, D. S. *Fundamentals of Corporate Finance*. Wiley, 2009. 765, ISBN 978-0470418444.

VODÁK, J.,: *Efektivní výroba.* 1. Výdání. Brno: Computer Press, 2011. 344s. ISBN 978-80-2512524-3
11. LIBERKO, I., VIDOVÁ, J.: *Ekonomická hodnotenia ekonomickej efektívnosti podniku*. 20 Inthercathedra, Poznaň: 2004, ISSN 1640-3622, s. 96 – 100.
12. MARCH, J.G. (1991): Exploration and Exploitation in Organizational Learning. *Organization Science*, Vol. 2, No. 1, Special Issue: Organizational Learning, s 71-78
13. MIHOK, J. JANEKOVÁ, J., VIDOVÁ, J.,: *Podnikové hospodárstvo – ekonomika podniku*. Košice: Strojnická fakulta TU, 2005. ISBN 80-8073-406-2.
14. REMEŠ, D., GOSWAMI, K. Měření výkonnosti podniku. *E+M Ekonomie a Management,* 2004, roč. 7, č. 3, s. 59-64. ISSN 1212-3609.
15. SEILER, A.,:*Financial Management: BWL in der Praxis.* Band 2. 3.,übererb. Auflage. OrellFüssli, Zürich. 528 S.
16. SYNEK, M. a kol.: *Podniková ekonomika*. 3.vyd. Praha: C.H. Beck, 2003. ISBN 80-7179-736-7.
17. SYNEK, M. a kol.:*Manažerská ekonomika*. 4.vyd. Praha: Grada Publishing, 2007. 464s. ISBN 978-80-247-1992-4.

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