ECONOMIC ADDED VALUE AS A TOOL OF COST-ORIENTED MANAGEMENT BY BUSINESS STRUCTURES OF INDUSTRY

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Abstract. The subject of the study is the methodology of entrepreneurial structure economic added value estimation for the purposes of cost-oriented management at the microeconomic level. The aim of the study is to identify the problems and the prospects of economic added value application in the cost-oriented management of business structures on the basis of essence and feature disclosure of economic added value determination, the analysis of its indicator integration degree in the management system by the criterion of enterprise value maximization at the micro level. The article uses the methods of analysis and synthesis, induction and deduction, system approach and comparative analysis. The genesis of economic added value indicator and its differences from classical measures of enterprise profitability were studied. The essence of economic added value and the features of its definition were revealed. They revealed the areas of economic added value indicator possible use in the process of business structure effectiveness evaluation. The indicative functions of economic added value indicator in managerial activities were disclosed in terms of capital use efficiency evaluation and the dynamics of business structure value. The nature of entrepreneurial structure owner behavior was determined depending on the variants of economic added value indicator. They determined the main ways of economic added value and management measures increase for their implementation. The shortcomings of economic added value indicator were revealed in cost-oriented management of business structures. The proposals have been formulated to improve the indicator of economic added value as the tool for cost-oriented management. The results of the study testify to the need of economic added value indicator improvement by reflecting the benefits of all key stakeholders of business structures while taking into account the fundamental effects of its activities in the current economic conditions.

Key words: the value of entrepreneurial structures; economic added value; economic profit; capital; profit; stakeholders; value-based management.

Introduction. Value-based management (VBM) is a modern management concept that involves the focusing of management efforts on main goal achievement - maximization of entrepreneurial structure value. Within the framework of the VBM-concept, the maximization of value is considered as the criterion of entrepreneurial structure effectiveness and as the success of management actions.

In order to implement VBM-concept, it is necessary to solve the problem of enterprise value measurement, the complexity of which is conditioned by a high degree of this cost variability, its dependence on the evaluation objectives and an unequal level for economic entities.

Modern science and practice offer various approaches to determine the value of enterprises with the appropriate composition of methods, many indicators and evaluation models.

One of the most famous and widespread VBM-indicators is the economic value added (EVA). However, the use of economic value added indicator in the cost-oriented management of business structures requires a deeper understanding of economic value added essence and the specifics of its definition, the conduct of problem and opportunity detailed study to apply EVA indicator in cost-oriented management, the development of the ways improving the methodology of economic value added indicator calculation with the purpose of its most effective use in the management of entrepreneurial structure cost.

The methodology of economic added value determination and the problem of the indicator application in the value-oriented management of enterprises was studied by such scientists as G. Arnold [1], D.L. Volkov [2], A.A. Gusev [3], A. Damodaran [4], T. Copeland [5], Stuart Cooper, David Crowther, Ted Davis, Matt Davies [6], G.N. Ronova, M.S. Boronin [7], G.I. Khotinskaya [8], B. Stuart, D. Stern [9], T.V. Teplova [10] and K. Yuk [11].

At the same time, there is no consensus among scientists on the economic content and the methodology for economic value-added index calculation. Researchers have not identified sufficiently the problems of enterprise value growth estimation using economic added value indicator within the framework of a cost-oriented management system introduction at the microeconomic level. The degree of the economic added value indicator application effectiveness in cost-oriented management of enterprises has not been established fully. The ways of economic added value indicator improvement in the process of its application in cost-oriented management have not been studied fully.

The aim of the article is to identify the problems and the prospects of economic value added application in cost-oriented management of business structures on the basis of the essence and the features disclosure concerning the determination of the economic added value, the analysis of its indicator integration degree in the management system by the criterion of entrepreneurial structure value maximization at the microlevel of the modern economy.

Methods. The theoretical and the methodological basis of the study are the positions of economics classics, theoretical and practical developments of scientists, finance experts, strategic management and marketing, strategic positioning of enterprises, which ensured the complexity of this problem study. The probability and the validity of obtained results is conditioned by the use of general scientific and special methods of cognition: analysis and synthesis, induction and deduction, system approach and comparative analysis.

Results. The model of economic added value was developed and registered by Stern Stewart & Co in the early 90-ies of the XX-th century. Economic added value is considered as the indicator of profitability, which is the follower of the company classic profitability measures in the form of profitability indicators (ROE, ROI, etc.) and overcomes the shortcomings of these profitability indicators (the possibility of artificial increase or displayed profit reduction, the ignoring of money and investor risk time value, an inadequate correlation with the value of company shares at the stock market).

Unlike its predecessors, the classic profitability indicators, EVA is the indicator that reflects a close relationship of share value using statistical methods, the realization of the opportunities for a large amount of accounting information use, the accounting during the evaluation of risk factor in enterprise cost.

In terms of economic content, economic added value is an economic profit. The main provisions of economic profit concept were laid by A. Marshall, who called entrepreneurial or management profit the means that remain of an owner's or a manager's profit after the deduction of interest on capital at the current rate (1890). Thus, A. Marshall stressed the need of accounting during the determination of value set by a company at any time (that is, economic profit), not only the costs fixed in the accounts, but also the alternative costs of business capital attraction [5]. Unlike accounting profit, when economic profit (or residual income) was determined, the cost of not only borrowed capital, but also the value of own capital was taken into account. This approach was aimed at the fullest reflection of the functioning capital real value.

The basic formula for economic added value calculation is the following one:

$$EVA = NOPAT - WACC \times IC \qquad (1)$$

where *EVA* - Economic Value Added;

NOPAT - Net Operating Profit After Taxation and prior to interest payment;

WACC - Weighted Average Cost of Capital;

IC - Invested Capital.

According to the formula (1), EVA indicator characterizes the cost value added by an enterprise during the operational period after the obtaining of profit in the amount exceeding the cost of used capital.

The economic content of formula (1) indicates that the indicator of economic added value evaluates not only the final result of an enterprise activity in the form of net operating profit, but also the efficiency of its receipt through the accounting of capital volume and price that was used to obtain this final result. Thus, during the estimation of economic added value, not only explicit costs are taken into account (in the process of net operating income formation), but also implicit ones - the alternative capital costs.

After a number of mathematical operation performance on the basis of formula (1), the following EVA calculation option can be derived:

$$EVA = (ROIC - WACC) \times IC \qquad (2)$$

where *ROIC* – the Return on Invested Capital.

Formula (2) formalizes the idea that the increase of an enterprise value is possible only if the effectiveness of the capital invested in an enterprise exceeds the rate of return required by investors (the owners of an enterprise), taking into account market available investment alternatives with the same level of risk.

In contrast to the economic profit index, the calculation of economic added value provides for the adjustment of the initial balance indicators to capital equivalents, which are the increase of enterprise net asset value with the aim to "restore" their value in real monetary evaluation in accordance with cash payments associated with the receipt of these assets. The adjustment of net assets to capital equivalents conditions the corresponding adjustments of net operating income in the process of economic added value determination [2, p. 214].

The authors of economic added value model B. Stewart and D. Stern provide 164 descriptions of possible corrections, but they suggest to use only 10-12 of them in practice [9]. Basically, these adjustments are related to the accounting of deferred tax amount, capitalized costs for research and design developments, LIFO reserve and goodwill amortization. K. Yuk considers it is possible to use only 6 adjustments in EVA calculations [11].

In the formulas of economic added value calculation invested capital is the amount of own and borrowed funds, which is attracted on a fee basis from various sources and invested in non-current and current assets of an enterprise. These assets are necessary to generate income in the form of net operating profit, and their use ensures the creation of an operating enterprise value.

The methodology of EVA indicator calculation indicates an important role in its final value shaping not only in the amount of net operating income, but also in the amount of invested capital, its structure depending on the sources of financing, as well as on the cost of its components - own and borrowed capital.

EVA indicator can be used to assess activity performance in a certain period at the level of an enterprise as a whole and its individual structural units and investment projects. Thus, one of the significant problems is solved concerning the creation of cost-oriented management system - the redistribution of management goals at the level of the business structure with its separate structural units and investment projects.

Since EVA can be used to assess the performance of an enterprise as a whole, its individual investment projects and business units, it is often compared to the Net Present Value (NPV). However, EVA has certain advantages over NPV due to the fact that it does not require an accurate determination of cash flow volume and time, as it is necessary for NPV calculation.

Based on the indicator of economic value added, a system of manager remuneration can be developed through the introduction of an appropriate incentive bonus system to create incentives for investor (owner) cost development.

The model of economic added value differs favorably from the method of cash flow discounting, since it allows to determine the degree of success of cost-oriented management by determining the value of an enterprise value increment in each particular period and assessing the effectiveness of its activity during the whole period of its operation.

The amount of free cash flow in any particular year is determined by specific arbitrary investments in fixed assets and working capital. A company management may postpone investment for the time being in order to improve free cash flow indicator of a certain year due to the long-term creation of a new value [5, p. 166]. Therefore, it is very problematic to evaluate the effectiveness of cost-oriented management based on free cash flow.

EVA indicator is regarded by its supporters as the indicator of management decision quality, which characterizes the degree of capital use efficiency and the dynamics of an enterprise value as the result of management actions.

At EVA > 0, a company receives a net operating profit of NOPAT in the amount that exceeds the cost of the capital used to receive it. This indicates the efficiency of capital use and the increase of an enterprise value.

If EVA = 0, it means that the net operating profit NOPAT earned by a company compensates only for the cost of invested capital without an added value creation. In this case, the owners of the enterprise capital actually receive a rate of return, compensating for the risk. EVA < 0 situation is related to the fact that the size of the net operating profit NOPAT received by a company is insufficient to recover the cost of the used capital. This value of EVA reflects the inefficiency of capital use and enterprise value reduction.

The aforementioned variants of EVA values cause several variants of enterprise owner behavior:

1) the desire of owners to continue investing in this enterprise (EVA > 0);

2) the lack of owner interest to invest in an enterprise when (EVA = 0), (at zero market profit of owners as a result of equal effectiveness of investments in this enterprise and alternative investment efficiency);

3) the desire of owners to withdraw the invested capital from an enterprise, as they lose it as the result of alternative profitability loss (EVA < 0). The use of economic added value indicator as the criterion for enterprise effectiveness evaluation requires the focus of management actions on this indicator value increase. Such management is carried out by influencing the factors involved in the development of EVA in accordance with the formula for its calculation (profit, invested capital, capital cost). The main ways of economic added value increase and the management decisions for their implementation are shown in Table 1.

Table 1 - The main ways of economic added value increase and the management solutions for their implementation

Main ways of increase	Management decisions on implementation
Profit increase when tentative capital is used	1. The development of new types of products (works, services). 2. The development of new markets (new market segments). 3. The development of more profitable adjacent links of the production and technological chain. 4. The increase of turnover, margins, the increase of asset turnover and cost reduction (both direct and overhead ones).
The reduction of used capital volume while maintaining profit at the same level.	1. The liquidation (sale) of unprofitable or insufficiently profitable spheres of activity. 2. Cooperation with the most reliable counterparties, the management of accounts receivable and the redistribution of capital between business lines. 3. The constrain of business growth, which requires large investments of capital, and the investing in areas that require less money.
The reduction of cost on capital raising at other things being equal.	Optimization of enterprise capital structure.
The increase of invested capital volume for the conditions of its profitability exceed above the weighted average cost of capital.	The implementation of investment projects, whose profitability exceeds the weighted average cost of capital, attracted to their implementation.

Source: [12, 13, the results of own studies]

EVA indicator measures the added value of an enterprise, that is, its growth over a certain period of time. This indicator reflects the magnitude of an enterprise value increment and characterizes the level of its activity efficiency through the prism of the way this enterprise is valued by the market.
Based on EVA, the market value of an enterprise can be determined as a whole. Such a value is calculated as follows:

$$V = IC + EVA_{t=0} \quad (3)$$

V - market value of an enterprise;
IC - invested capital;
$EVA_{t=0}$ - the economic added value of future periods, the value of which is given to the present moment of time.
During the calculation of an enterprise market value based on EVA, according to formula (3) sometimes the value of net assets (at book value) is used instead of the invested capital indicator [10].
A number of scientists [14, 15] use the present value of the projected economic income in formula (3) instead of the economic added value of future periods, the value of which is given to the present moment of time. This does not change the economic content of the formula for an enterprise value calculation based on EVA, since the concept of economic added value and economic profit actually coincide as was shown earlier.
The calculation of the enterprise value (V) on the basis of EVA of the future n-th periods can be formalized as follows:

$$V = IC + \sum_{t=1}^{n} \frac{EVA_t}{(1+WACC)^t} \quad (4)$$

The calculation of the present value of future EVA values in formula (4) assumes the infinity of an enterprise functioning and the ability of its assets to generate revenues with a certain profitability for an infinite period. Therefore, future incomes, which bring every capital investment in assets, can be capitalized with their subsequent discounting to the current time.
There is also the modification of an enterprise cost calculation based on EVA, the formula of which is the following one:

$$V = IC + EVA_1 + EVA_{1+1} \quad (5)$$

V - market value of an enterprise;
IC - invested capital;
EVA_1 - discounted EVA from existing projects.
EVA_{1+1} - discounted EVA from future investments of new projects.
It should be noted that the indicator of economic added value is used to assess the market value of an enterprise. This cost can be influenced by many factors, a significant part of which is not controlled by the management of a business entity. Therefore, the assessment of the market value of an enterprise based on EVA index is inappropriate to use in cost-oriented management at the microeconomic level.
The determination of an enterprise cost based on EVA is founded on bringing future EVA values to the present time. Such an assessment characterizes a "time point" result, which does not give an idea about the very process of the final goal achievement in the form of enterprise value increase within the framework of a cost-oriented management system introduction. Besides, the calculation of an enterprise value only as a static indicator at a specific date gives a less accurate estimate of it as compared with the definition of value in dynamics.
The calculation of the total cost of an enterprise based on EVA is founded on the statement that investors (owners) are not able to estimate the ability of the management to create a positive economic added value in the future according to a single EVA indicator for a certain period. Therefore, it is believed that it is the current (reduced) cost of future EVA values that determines the total (market) value of an enterprise. Thus, the evaluation of an enterprise in this case is essentially based on the expectations of future EVA values. This gives a certain artificiality and doubtfulness to an enterprise value indicator, determines its alienation from the real value-forming characteristics of an enterprise. In such a situation, there can be the problems with the introduction of an enterprise cost maximization criterion in management activity with the implementation of the main directions of cost-oriented management (especially when certain management decisions are substantiated, during the management of an enterprise cost factors, the solution of management goal redistribution problem between an enterprise as a whole and its structural divisions, the determination of individual investment project efficiency, the development of bonus system for enterprise managers).
An enterprise value estimation based on the present value of future EVA values contains a certain paradox, which consists in possible development of multidirectional trends in the value of an enterprise and economic added value, that is, the value of an enterprise can decline even with economic added value increase in a particular period. This situation can occur in the following cases:
1) the growth of EVA value in a separate period is accompanied by risk increase and, thus, by the increase of capital future cost (both own and borrowed one);
2) the increase of EVA in a particular period may be conditioned by short-term factors that will have negative consequences in the long term (for example, a short-term reduction in labor costs and, accordingly, EVA and profit growth in one of the periods may lead to the decrease of future EVA as a result of qualification staff possible dismissal and the outflow of intellectual capital from an enterprise and, thus, to the weakening of this business entity competitive positions.
The existence of a contradiction between an enterprise value index calculated via EVA and the indicator of the economic added value misleads managers in the process of enterprise management concept implementation by the criterion of its value maximization using the economic added value indicator.

The indicator of economic added value acts as the measurer of economic profit real value and serves as the tool for this profit management from the positions of certain enterprise owners. However, this appointment of EVA indicator conditions a number of shortcomings in its application within the cost-oriented management of enterprises.
First of all, we should focus on the fact that the basis for economic profit evaluation within the framework of EVA concept is the same accounting (adjusted) profit, which is reduced by the corresponding costs of capital, but it affects the estimated value of economic added value significantly.
EVA indicator is limited by final result measurement of an enterprise activity solely by the amount of net operating profit in the part that remains after the compensation of the capital cost used to receive it. In this regard, the implementation of cost-based management based on EVA will be largely accompanied by the problems that are typical for management according to the criterion of profit growth.
The use of profit as a target management criterion and an estimated indicator of a company performance is associated with a number of shortcomings, the most significant of which are the following ones:
1) the possibility of refusal from effective investment projects on the part of enterprise managers with a long-term implementation period in order to obtain a high profit value in the short term;
2) a high variability of the profit indicator due to its dependence on accounting procedures.
The indicator of economic added value is characterized by a certain financial constraint through its focus on the measuring of superprofit exclusively in the process of an enterprise value creation. In this regard, during recent years, the idea of EVA indicator integration into the structure of a balanced system of indicators became popular concerning an enterprise performance evaluation.
The concept of Balanced Scorecard (BSC) was developed in the 90-ies of the XXth century by G. Kaplan and D. Norton.
A balanced system of indicators includes financial and non-financial indicators, which are selected in such a way as to take into account all the significant (strategic) aspects of its activity (financial, marketing, manufacturing, etc.).
The BSC concept is oriented to the implementation of a multi-vector enterprise management policy based on an integrated system of strategic goals and the key indicators that encompass four important areas of its activities: finance, customers, business processes, the development and the training of personnel. The integration of EVA and BSC concepts suggests that in order to achieve a synergistic effect, EVA is considered to be a key factor during the development of BSC financial perspective and is used as the basic indicator that reflects the success of an enterprise. At the same time, the upper financial level is developed on the basis of EVA, whose requirements define a set of interrelated goals and objectives along the chain: finance, consumers, business processes, personnel [16].
A number of scientists believe that the simultaneous use of EVA and BSC in the management of tools gives the greatest effect: EVA indicator as a common strategic goal, the basis for management motivation system, and also as the financial perspective of a balanced system of indicators; BSC as the main management tool to create an entrepreneurial structure focused on shareholder value addition [17 - 19].
However, in order to ensure the effectiveness of cost-oriented management, it is important that all different aspects of an enterprise value-added cost creation are taken into account at the stage of its evaluation using the aggregate value indicator.
Besides, the indicator of economic added value, due to the specifics of its calculation, assesses the efficiency of an enterprise activity from the point of view of only one group of stakeholders - the owners of a certain enterprise [20]. Meanwhile, other stakeholders - managers, personnel, creditors, suppliers, buyers, the state - are also able to influence the trajectory of a business entity and its value development. That is, the interests of the latter may not be taken into account in cost-oriented management based on economic added value, which will lead to an enterprise value decrease. In this regard, the indicator of economic value added as an instrument of cost-oriented management should determine the value-added result of an enterprise not only for its owners (exclusively in the form of profit), but also reflect the benefits of all other key stakeholders while taking into account the fundamental effects of enterprise activities. The system of managerial decision, budgeting, performance evaluation at different levels of management, and manager incentives is needed in an appropriate modification.
Discussions and conclusions. In the course of the conducted research they revealed that the features of economic added value determination condition the corresponding problems of its application in cost-oriented management at the microlevel of the modern economy. The use of an entrepreneurial structure market value assessment on the basis of the economic value added index for the purpose of cost-oriented management is problematic due to the uncontrolled nature of this cost on the part of an enterprise management. There are certain difficulties with the implementation of cost-oriented management main directions through the evaluation of an enterprise based on future values of economic added value. Through the contradictory nature of the enterprise total value indicator on the basis of economic added value and the indicator of the actual economic added value, managers may be disoriented in the process of an enterprise management concept implementation by the criterion of its value maximization. The management problems based on the criterion of profit growth are largely involved in the process of cost-oriented management based on economic added value. The management on the criterion of economic added value increase is aimed at the satisfaction of enterprise owner interests with the ignoring of its other stakeholder interests. The prospects of application of the economic added value indicator in a cost-oriented management by enterprises are related to this indicator improvement by the reflection of an enterprise all key stakeholder benefits with simultaneous consideration of its activity fundamental effects in the current economic conditions. Further study will be aimed at a new model for an enterprise value estimation based on an

improved indicator of economic added value and an appropriate modification of the systems for making and implementation of management decisions, budgeting, the performance evaluation at various levels of management, and manager stimulation.

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