Significant changes were made to the understanding of the goals of a company's development during the last ten years (or even less for Georgia) and therefore, to the rules of evaluating the achievement of the set objectives and the selection of specific indicators.

Nowadays, the concept of profit maximization, which is considered to be the main purpose of business development in terms of market economy, is gradually replaced by the concept of value maximization - Value Based Management (VBM). The latter is quite different compared to the previous approach. In particular, this concept is focused on solving strategic tasks. Traditionally, profit and profitability indicators have been considered to be the key indicators of effectiveness, but due to a number of major reasons they do not always allow us to discuss the value creation and in particular, its growth. Below are some of the most important of these reasons:

- the possibility of making variations through accounting estimates;
- ignoring the factor of time value of money;
- ignoring the value of the own capital;
- exclusion of the risk factor and the demanded return on the capital invested related to it from the discussion.

It is recognized that the means used for the formation of an enterprise capital have some value, which is partly determined by the possibilities of choosing the sources of financing an enterprise.

Capital value is the expected profitability demanded by the market for attracting financial resources and necessary for financing a particular investment project or the entire enterprise. The value of capital is an alternative value in case of denying other alternative versions of investments. In addition, the fact is that a rational investor will never invest in any particular project or business if there is a more favorable alternative for investments from the perspective of risk comparison. While determining the value of capital the following key factors should be taken into consideration:

Weighted average cost capital (WACC) is typical for the value of all the active financial resources of an enterprise –for its own and borrowed capital and depends on their share in the total volume of sources. This indicator is a matter of principle as its size is typical for the demanded rate of profitability on total invested capital.
The value of the weighted average cost capital (WACC) is calculated using the formula given below:

\[ WACC = r_e \left( \frac{E}{V} \right) + r_d \left( \frac{D}{V} \right) (1 - t), \]

where \( r_e \) is the demanded rate of return on own (share) capital;
\( E \) is the size of own capital;
\( D \) is the size of borrowed capital;
\( V = E + D \) is the size of financing sources (borrowed and own);
\( r_d \) is attraction rate of borrowed capital;
\( t \) is corporate tax rate

Generally, weighted average cost capital is typical for the compensation level for the investors of the capital in case they do not invest their funds in other directions except for the given enterprise. Given the fact that the level of participation of individual investors of capital in funding the operations may be dissimilar, cost of individual types of financing is determined by the share of the given source in the total amount of financing.

Let's assume that the attraction rate for the borrowed capital is 10% (including tax savings), the demanded rate of return on the own capital is 14%; the ratio between own and borrowed capital is 1:1 and the corporate tax rate is 15%.

\[ WACC = 14 \times 0.5 + 10 \times (1 - 0.5) \times 0.5 = 11.3\% \]

Accordingly, the minimum level of income on the capital invested in assets or in a given project should amount to 11.3%. In this case, there is an opportunity to pay interest on borrowed capital and to satisfy the expectations of the owners (profitability rate of 14% in our case). However, if the profitability level for investments is less than 11.3%, the owners will not be able to receive the needed profitability of 14%.

The management of the enterprise should be aware how different structure of capital is reflected on the value of the additionally attracted capital. Therefore, their attempt to reduce the volume of the capital to be additionally attracted through changes in the structure of capital is quite understandable. In addition, the following important provision should be necessarily taken into consideration:

Taking into consideration the fact that the borrowed capital is considered to be a cheaper source (the effect of tax savings on the interest rate; besides, the risk of creditors is lower compared to the risk of the owners; therefore, the owners have to receive more return on the invested capital to compensate the risk) it can be considered that the growth of borrowed capital and the reduction of own capital provides a possibility to solve the above problem. At the same time,
significant growth of the share of borrowed capital leads to the increase in financial risk as, firstly, already existing significant share of borrowed capital makes the creditors increase interest rates and secondly, the growth of the share of borrowed capital results in the increase in the risk of owners that leads to the need of increasing required profitability rate on own capital.

All the above said will result in the increase in WACC. Therefore, dependence of WACC on the structure of sources can be illustrated on the figure below.

The figure illustrates that participation of borrowed capital (which is cheaper compared to own capital) in the sources of financing leads to the reduction of WACC. On the other hand, the growth of the share of borrowed capital increases the risk of deflation, which, in turn, means that the risk of owners also increases. Later this will result in the growth of required profitability rate on own capital, which will enable the shareholders to compensate for the risks of business investments.

The effect of joint capital structure on its value

Optimal structure of the sources is achieved when the ratio of borrowed and own capital is determined. In this case the size of the WACC will be minimal. Clearly, like any other model, this approach also requires clarification depending on peculiarities of functioning of a specific business and the targeted tasks the company is facing, including attraction of sources of financing. While determining the weighted average cost capital the key issues are given below:

- Should the current structure of the ratio of borrowed and own capital according to the accounting balance sheet or the structure of the capital, which an enterprise will have as a result of acceptable option of financing, be used in the calculation;
• Should the cost of individual types of financing based on its historical estimate or their market value be used in the formula of weighted average cost capital. The above issues are solved taking into account the objectives of determining weighted average cost capital and the availability of the existing information. If the starting point is that weighted average cost capital is used as a criterion to evaluate the effectiveness of the investment and financial decisions to be taken, the results of which will become clear in future, obviously, in such case, assessment of capital value and its structure may provide an unreal picture. Therefore, in order to evaluate the rationality of future managerial decisions, it is necessary to use the expected value of own and borrowed capital. If the structure of financing changes in the version for conducting the analysis, then the calculation of the weighted average cost capital should include the data adjusted to future changes.

When making a decision to use borrowed capital, it is essential to take into consideration all the substantial costs associated with taking debt and its services. Interest on bank credits and company loans are considered to be this kind of costs. In addition, the cost of borrowing may include such expenses as costs of consultation and information related to preparation of financial statements and their auditing, etc.

Corrections in the value of borrowed capital are made taking into account the corporate tax rate. The essence of the correction is that interest rate on credits and service of loans reduces corporate tax base. The real, actual value of the borrowed capital based on the effect of the tax economy will be \(-r_d (1-t)\), where \(t\) is corporate tax rate. As for financing their operations enterprises usually use borrowed capital under different conditions of attraction (interest rates, attraction terms and other costs that increase the cost of attracted funds), \(r_d\) (interest rate on attracted borrowed capital) can be presented by the indicator, which is typical for weighted average interest rate for (borrowed) funds.

The cost of own capital \((r_e)\) is profitability rate on the invested capital taking into consideration the risks associated with the given investment. Different approaches can be used for determination the value of own capital. Calculation method based on capital assets pricing model (CAMP), as well as calculations based on cumulative rates, taking into consideration various risk-factors for different investments have become some of the most widely spread methods in practice.

While weighted average cost capital is applied as a criterion for evaluating the effectiveness of investment and financial solutions to be taken, the results of which will become clear in future, clearly, in such case, assessment of capital value and its structure may provide an unreal picture. Therefore, in order to evaluate the rationality of future managerial decisions, it is necessary to use the expected value of own and borrowed capital.
When evaluating the capital structure in a long-term plan, the main target task should be based on the minimization of the WACC. Namely, the discussion goes about the ratio of borrowed and own capital, which will minimize joint capital of the company. In long term strategic analysis, reduction of WACC is considered to be the most important factor for increasing the value of a company.

Accounting policy has quite significant impact on the income rate and consequently on profitability. Determination of depreciation policy would be the easiest example of this. Selection of this or that method of depreciation charges may have a substantial impact on the formation of financial results.

Another way to influence financial outcomes is determination of credit policy. Extending the payment period for the customers provides an opportunity to increase sales and profit. In addition, the necessity of formation of reserves leads to reduction in profit.

As a result, the decisions related to managing assets, liabilities, revenues and expenditures in a company directly affect the financial results presented in a profit and loss statement and, therefore, the level of profitability.

It is essential to take into consideration the time factor when making decisions related to the effectiveness of the activities. Otherwise, income and profitability rates calculated for a definite period might be misleading. For example, if a company has the expenses, from which the result is expected in long term (training and retraining of personnel, identifying new markets to supply goods, etc.), these expenses will lead to the reduction of income and profitability during the period they are made.

Only the comparison of expenses incurred in one period with the economic benefits received from these expenses in other periods may provide a well-founded assessment of appropriateness of these expenses. In addition, comparison of revenues and expenditures that incur in different periods is implemented through discount method.

Analysis of the financial results should also include the risk associated with it. Demanding for greater return on the riskiest investment, as a compensation for high risk, is a widely spread fact. This leads to the creation of the concept - the return to be demanded on invested capital, which largely depends on the risk of investment. The higher the risk, the higher the demanded return. This is the most important rule when selecting a discount rate.

All the above said leads to the necessity of seeking for the measures for value creation. These may include the following indicators: EP (economic profit), EVA (economic value added), MVA (market value added), SVA (share value added), CFROI (cash flow return on investment or cash flow on investment).

Although there are some differences in calculation methods, one approach is common for all of them - additional value added is only created when actual return on the investment exceeds the
demanded return. This means that new value is created only when the company’s return on the invested capital is higher compared to the costs of attracting capital.

![Diagram: Invested capital → Return on investment, ROI → Creation of value added → Profitability rate to be demanded → Time horizon of planning, t]

**The key elements in creation of value added**

The above scheme clearly reflects the basic conditions for creating the value added: the actual return on invested capital should be higher than the profitability rate to be demanded. Only in these conditions positive margin can occur, which provides a bigger effect (and accordingly, more value added), the larger the amount of invested capital.

The value of weighted average cost capital, which is typical for the value of joint financial resources, is mainly used as a profitability rate to be demanded. In addition, the logic of the discussion will be as follows: return on invested joint capital should not be less than the cost of attracting the capital.

Let’s discuss the main indicators of value creation.

**Economic Profit (EP).** According to the general approach, which is included in the calculation of this indicator, economic profit is the difference between net operating profit after tax (NOPAT) and the demanded return (taking into consideration the value of attracted capital). The following formula is used for the calculation of this indicator:

$$ EP = A \times (ROI - WACC) $$

Where $A$ is assets of a company or business segment.

If we take into consideration that $ROI = NOPAT : A$, after opening the brackets we receive the following formula:

$$ EP = NOPAT - A \times WACC. $$
Therefore, if the value of NOPAT shows actual return, A x WACC is typical for profit amount, which this company or business sector should earn as a result of activation of combined value of financial resources. In other words, the profit earned should be sufficient not only to pay interest on borrowed capital, but it should also satisfy the owners’ expectations regarding the invested capital.

According to some methods, depending on the choice of the indicator of ROI or ROCE, the similar modification of economic content can be used:

\[ EP = IC \times (ROCE - WACC), \]

or \[ EP = NOPAT - IC \times WACC, \]

where IC is invested capital.

The difference between these indicators is related to the selection of the calculation method of the capital invested by the company.

Unlike traditional analysis of financial coefficients, which is based on the assessment of the dynamics of the actual size of indicators, the above approach is based on the comparison of actual and demanded profitability rates. For the analysis, let’s discuss the data of a company.

### Calculation of Economic Profit

<table>
<thead>
<tr>
<th>Indicators</th>
<th>Analyzing period</th>
<th>Previous period</th>
<th>Deviation (±)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. ROI, %</td>
<td>18</td>
<td>16</td>
<td>+2</td>
</tr>
<tr>
<td>2. WACC, %</td>
<td>20</td>
<td>20</td>
<td>-</td>
</tr>
<tr>
<td>3. Assets (million GEL)</td>
<td>100</td>
<td>100</td>
<td>-</td>
</tr>
<tr>
<td>4. EP (million GEL)</td>
<td>-2</td>
<td>-4</td>
<td>+2</td>
</tr>
</tbody>
</table>

As shown, traditional analysis, which is focused on the use of profitability indicators, reflects a positive picture, which is related to an increase in the profitability of investments. In addition, the use of the concept of demanded profitability rate (20% in the given case) for evaluating effectiveness provides a possibility to make conclusions regarding a serious problem: in both discussed periods actual profitability rate is less than the demanded rate, which means the loss of certain amount of value.

The indicator of Residual Income (RI) is another indicator closer to Economic Profit. It has a relatively long history. Like the indicator of Economic profit, it is also calculated based on the data of accounting (financial) statement; any other set level of income, which a company or a business-segment should ensure, might be used in the formula instead of WACC.
For example, if demanded profitability rate in a company is 10%, this means that all the business-segments, in which the size of ROI (ROCE) exceeds the given rate (10%), will be considered a creator of value added; while business-segment destroys or “absorbs” the value with low profitability of 10%.

**Analytical possibilities of economic profit (EP) indicator.** This indicator has some advantages compared with other traditional indicators of accounting profit as it provides opportunity to compare the actual and demanded profit. The possibility to substantiate the rate of profit increases its flexibility. In addition, inevitable subjectivity in assessing the demanded profitability indicator may reduce the reliability of the given indicator.

**Deficiencies of the indicators of Economic Profit (EP).** First of all this may refer to the problem of using the data of accounting statements to calculate profit and profitability. In addition, due to various reasons, the data of accounting balance sheet do not always provide the opportunity to evaluate the size of invested capital objectively. The major reasons are:

- The use of historical prices to assess assets and liabilities;
- Distorting influence of inflation;
- Not taking time factor into consideration;
- Such major investments for the long-term development of a company as creating a new brand, company image, setting up a team of highly qualified specialists, gaining experience in organizing the production process and others cannot be reflected in accounting balance sheet.

**Economic value added (EVA).** This indicator represents the result of the development of the above-mentioned indicator (economic profit). It was developed by the consulting firm Stern Stewart and Co. Some of the shortcomings and problems discussed above will be eradicated by using EVA by making some corrections in it. In order to get the most accurate assessment, more than 150 corrections were intended to make in the amount of profit and invested capital.

The discussion refers to the same formula, which is used to calculate economic profit (EP). The only important difference is that the corrected size of NOPAT, as well as the corrected indicators of ROI and ROCE will be included in the calculation of the size of EVA. Therefore,

\[
EVA = A \text{ corrected } \times (\text{ROI corrected} - \text{WACC})
\]

or,

\[
EVA = \text{NOPAT corrected} - A \text{ corrected } \times \text{WACC}.
\]

Corrected operating profit while calculating EVA first of all implies exclusion of the elements from accounting expenses that can provide long-term benefits. This refers to marketing expenses, personnel training expenses, the costs related to scientific, research and construction activities, etc.

Corrected size of invested capital implies assessing it with market value, capitalization of some of the discretionary costs, such as the costs related to scientific, research and construction
activities, which provides a possibility to take into consideration not only investments in current assets, but also their potential growth in them.

Weighted average cost capital (WACC), the third component of the formula used for the calculation of EVA should be based on the market and not on the balance evaluation of own and borrowed capital.

Therefore, the main difference between EP and EVA is in the base for calculating their indicators. If the EP indicator is based on the data of accounting statement, the EVA indicator is based on the corrected data of each element of the formula.

Both EP and EVA indicators describe the ability of a company or business-segment to create the value.

If EVA<0, this means creation of value added. As we have already found out, this is possible when the actual return on investment is higher than the demanded income (ROI> WACC).

EVA = 0, this equation will occur when ROI = WACC, which means that the returns on the investment meets the demanded rate of profitability.

If EVA < 0, it means the absorption of value. The actual return on investment is less than the demanded profitability (ROI <WACC).