

FINANCIAL STRATEGIES OF ENTERPRISE VALUE MANAGEMENT

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Abstract: *The fundamental purpose of business activity is to maximize enterprise value. In conditions of widening the market is constantly seeking the most rational and effective methods of organizing financial activity in order to maximize enterprise value. In the scientific research it has been established that the value of a company is determined to a large extent by changes in domestic financial environment. The article studies existing value management concepts and models, where the financial factor has a significant impact. There are highlighted five principles of enterprise value management: the basic model of Damodaran; model T. Copeland, J. Murrin and T. Koller; Walsh's classic model; Egherev's models and Mordashev. Each of these models allow to change enterprise value from various angles and define appropriate instruments of value creation. We believe that these models can be applied to achieve an express-diagnostic of enterprise value. The principle of maximizing enterprise value can be implemented by regularly monitoring financial indicators, to timely detect negative deviations impact and avoid them.*

Keywords: *enterprise value, value-based management, financial diagnosis, cash-flow, investments, cost of capital.*

JEL Classification: G32.

1. Introduction

The enterprise management process aims at achieving a fundamental goal - maximizing its value. Economic developments in recent years have shown that the value of an enterprise correlates with the existence of a healthy domestic financial environment within the enterprise. Therefore, searching for the most effective methods of organizing financial activity is a serious call for the native business environment.

The global economic crisis, the fragility of the value of the enterprise in the current economic context, and the continuing diversification of value-creation sources served as a basis for research into internal value creation reserves, namely financial ones, detached from the macroeconomic environment in which the enterprise operates. Next, we propose to analyze from a methodological point of view the financial aspects of the enterprise's value.

2. Researching the impact of financial factors on the value of the enterprise

The analysis of the existing concepts of enterprise value management outlined the following key determinants of the value: the expected monetary flows, investment risk, value of capital attraction and service, the expected growth potential of the business, the possibility of the emergence and existence of beneficial effects in the future.

Currently, there are some theories on value management, which we will continue to examine.

2.1. Damodaran's fundamental model

One of the fundamental theories is that of A. Damodaran (2012). According to this theory, using the discounted cash-flow methodology gives us four ways to create value:

- the increase in cash-flows generated by existing assets by increasing post-tax revenues or by reducing the need for investment in fixed capital and working capital;
- increase of the cash-flow growth rate due to the increase in the share of the reinvested profit or increase of the return on invested capital (the quality of investments);
- increasing the duration of the intensive growth period;

- taking measures to reduce the operational risk of invested capital, change the funding ratios of long-term capital, or change the financial conditions for attracting loans.

Thus, in line with the discounted cash-flow method, in order to influence the value of the enterprise, it is necessary to influence the current cash-flows and / or future growth and / or the duration of the intensive growth and / or rate update.

In order to increase the cash-flows generated by the company's assets, it is necessary to tend to reduce production costs, liquidate unused assets, reduce the tax rate, maximize the capabilities of previous investments, manage inventories and implement a tighter lending policy. In order to increase the duration of intensive growth it is necessary to create and support the competitive advantages of the company.

The division of shares and dividends does not change the value of the enterprise (after Damodaran), because it does not change the cash-flow, growth rate and risk. Accounting decisions influencing the financial performance report also do not influence cash-flows and therefore do not act on the value of the company.

Decisions on the placement of securities on the basis of the existing assets of the enterprise also do not create value, if only the result will not change the structure of the liability (the ratio between own and attracted means).

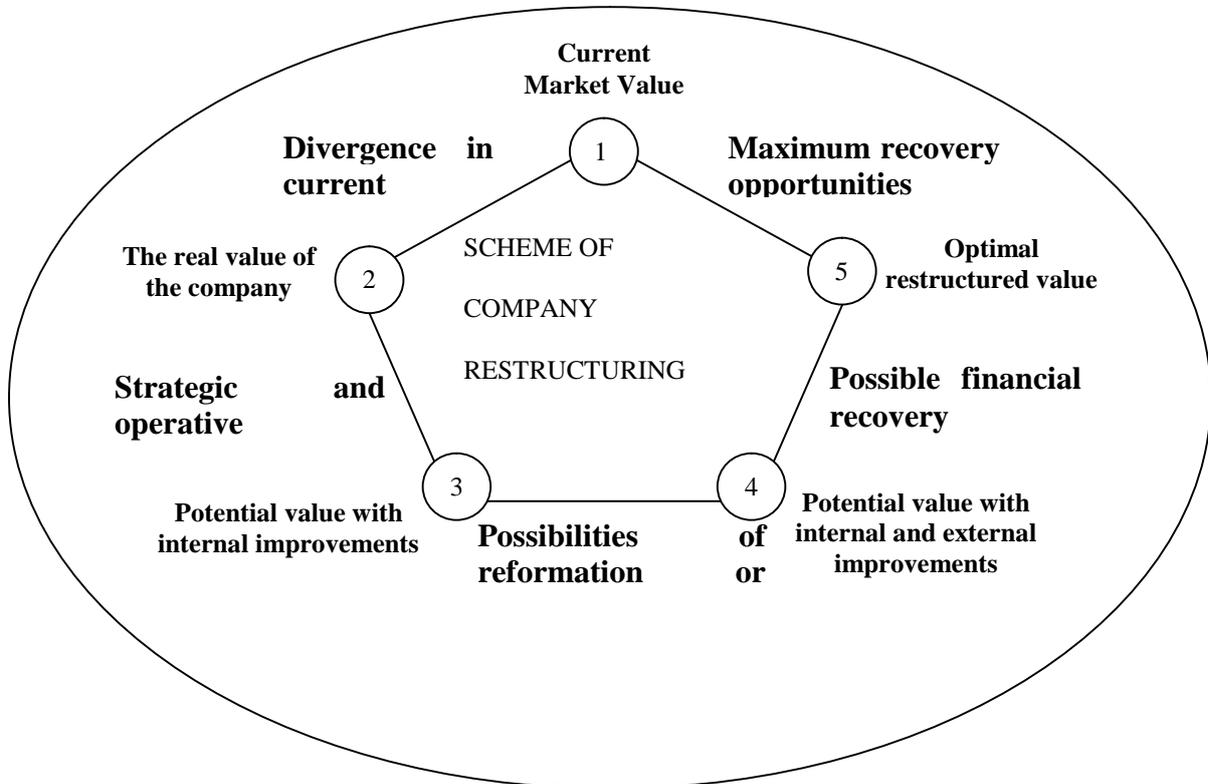


Figure no. 1. Pentagram to determine the possibilities for restructuring

Source: Copeland, Murrin and Koller, 2014.

2.2. Model of scholars T. Copeland, J. Murray and T. Koller

The same ideology is, with a slight difference, accomplished by T. Copeland, J. Murrin and T. Koller (2014). They consider that when deciding on the rationality of the company's restructuring (especially after the discovery that the value of the net assets of the enterprise is higher than the share capital, determined by the discounted cash-flow method) and for the analysis of possible consequences, it is reasonable to use the classic pentagram of the possibilities of restructuring.

From figure no. 1 we note that the starting point of the pentagram analysis must be the detailed investigation of the current market value of the investigated enterprise. Then, the de facto and potential value of the enterprise will be determined, taking into account internal improvements based on the expected cash-flows and the possibilities to increase the value of the enterprise through financial reengineering. All the above-mentioned values must be compared to the value of the enterprise on the securities market in order to assess the potential gain of the shareholders from the reorganization of the company. This comparison should help to highlight the divergences between investors and managers regarding the company's prospects.

When such an analysis is completed, the state of the company's projects and the possibilities available to it to build up the value must be outlined.

2.3. The classic model of Ciarian Walsh

Another theory of value management was created by C. Walsh (1996).

The scientist researched another important aspect of managing the company's business, namely the balance between profit, assets and growth (Figure no. 2).

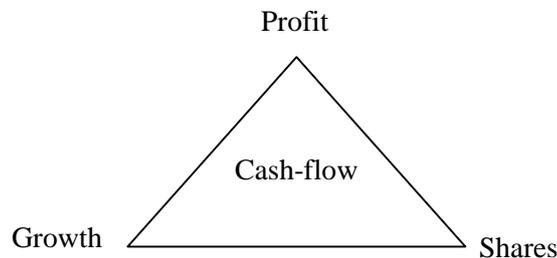


Figure no. 2. Growth and need in balancing

Source: [4]

It is necessary to look for a balance between these indicators, because breaching the balance may worsen the company's activity. Taking into account all the growth pros and cons, the managers of the enterprise are advised to previously determine the maximum growth rate that the company will bear without any difficulty, taking into account the other aspects of its activity.

The equation of balanced growth, deduced by C. Walsh, is as follows:

$$\frac{R}{G \times T} = E, \quad (1)$$

where: R - undistributed profit (sales receipts); G - revenue growth rate; T - current assets; E - the numerical size of the left ratio.

According to this equation, if $E = 1$, then the cash-flow is neutral, if $E > 1$ then the cash-flow is positive, and in case $E < 1$ - negative. Based on this theory, for the growth rate given, the cash-flow of the core business must be in balance. This model allows managers to focus on the fundamental factors, on which the overall state of the enterprise depends. They are related to profit, current assets and growth rate.

The most effective business worth buying is the one that grows fast and has high profits. On the contrary, the acquisition will be unsuccessful if the company grows slowly and generates small profits. Such an enterprise costs less, but presents no case of worry. The most dangerous case occurs when high growth rates are combined with low profits. If at such a company the "assets / receipts" ratio is high then this acquisition will be like a delayed "bomb" that will lead to a financial catastrophe.

2.4. Analytical model of S. Mordashev

Another analytical aspect for leadership decision-making is the aspect based on the analysis of the sensitivity coefficients of factors influencing the value proposed by Russian economist S. Mordashev (2001). In order to get the factorial model, one has to get the differential of one of the value formulas (for example, Gordon's formula). If each member of the differentiation is brought into a sizeless form, then it will be possible to determine the changes in the value of the enterprise to the change in a certain size of one of the factors.

In the general case, when the cash-flow increases, determining the share capital value is as follows (Gordon's formula):

$$V = \frac{FCF}{(r - g)}, \quad (2)$$

where: FCF - free cash-flow; r - expenses related to the acquisition and servicing of the share capital; g - cash-flow growth rate.

Regarding the components falling within the formula (1) the following will be noted.

First, the rate of capital spending is considered for a long time.

Secondly, the basic components of the free cash-flow are:

$$FCF = (S - Cc)(1 - T) - I = EBIT(1 - T) - I, \quad (3)$$

where: S - receipts from sales; Cc - the cost of sales exclusively interest on credit; T - income tax rate; I - permanent investments minus depreciation; EBIT - earnings before interests and taxes.

It is not difficult to see that the components of the free cash-flow correspond to the data in the financial results report.

Thirdly, expression (2) makes sense only with the condition $r > g$.

Thus, provided the propositions and completions of relations (2) and (3) can be deduced from the basic factors of value:

- sales receipts;
- production cost;
- profit tax;
- permanent additional investments higher than depreciation used to support the given sales level and cost of sales;
- the growth rate of the cash-flow;
- the cost of capital attracted.

To address the question of effective leverage on enterprise value, it is necessary to assess the sensitivity of the value to the change of its components. For these purposes, we will examine the value elasticity of these variables.

The term "elasticity" shows how many percent will change the value of the enterprise if the surveyed factor changes by 1%.

In this way, the elasticity of the enterprise's value after cash-flow shows with how many percent the company's value will change, if the cash-flow size will change by 1%. The elasticity of the value after cash-flow is determined as follows:

$$EL_{FCF} = \frac{FCF}{V} \times \frac{\partial V}{\partial FCF} = \frac{FCF}{\frac{FCF}{r_{WACC} - g}} \times \frac{\partial \left(\frac{FCF}{r_{WACC} - g} \right)}{\partial FCF} = \frac{r_{WACC} - g}{r_{WACC} - g} = 1, \quad (4)$$

From formula (4) follow:

-when changing the cash-flow amount by 1% (the other conditions remain the same) the value of the enterprise will also change by 1%, as a result of the increase of the cash-flow will lead to the increase of the value;

-the elasticity of the enterprise's value after the free cash-flow does not depend on the rate of change of this flow, ie the company's value changes by 1% in the change of the free cash-flow by 1%, independent of the growth rate of this flow.

Analogously to the expression (4), the expressions of elasticity of enterprise value after the other factors are shown.

The elasticity of value by the rate of capital expenditure is determined in the following way:

$$EL_r = -\frac{r}{r-g}, \quad (5)$$

Formula (5) shows us the following:

-the negative sign of elasticity shows that the increase of the capital expenditures (the other conditions remain the same) leads to the reduction of the value of the enterprise;

-the percentage change in value based on capital expenditure depends on the rate of change of that flow.

The elasticity of the value of the business by cost of sales is as follows:

$$EL_{Cc} = \frac{-1-T}{\frac{FCF}{Cc}}, \quad (6)$$

The relationship (6) follows:

- increasing the cost of production (the remaining conditions remain the same) leads to a reduction in the value of the enterprise. When reducing the production cost of products made with 1%, the value of the company will increase proportionally to the increase of the profitability of the production. However, the higher the share of the cost of production in sales revenue, the stronger in percentage terms its influence on the change in the value of the company;

- the percentage change in the value of the company to the change in production cost does not depend on the rate of change of the free cash-flow, ie the percentage value will change equally for both the flow and the constant flow;

- provided the relation (3), the expression (6) to additional investments $I = 0$ can be transformed into the following expression:

$$EL_{Cc} = -\frac{1-T}{\frac{FCF}{Cc}} = -\frac{1}{\frac{EBIT}{Cc}}, \quad (7)$$

From the above relationships it can be concluded that the higher the share of the production cost in the sales proceeds (the lower the profitability of the production), the more effective will be the measures to increase the value of the enterprise based on the cost reduction of production.

The elasticity of cash-flow based on revenue will look like this:

$$EL_s = \frac{1-T}{\frac{FCF}{S}}, \quad (8)$$

Equation (8) shows the following:

- the increase in sales revenue (the other conditions being the same) leads to an increase in the value of the enterprise (the dependence is not linear), ie the lower the profitability of sales, the stronger the influence of collections on the value of the enterprise in percentage terms;

- the percentage change in the value of the enterprise's change in earnings does not depend on the rate of change of the free cash-flow g ;
- if the additional investments $I = 0$, then the expression (8) takes the following form:

$$EL_s = \frac{1-T}{\frac{FCF}{S}} = \frac{1}{\frac{EBIT}{S}}, \quad (9)$$

The elasticity of the value by profit tells us how many percent the company's value will change if the profit is changed by 1%.

$$EL_{EBIT} = \frac{1-T}{\frac{FCF}{EBIT}}, \quad (10)$$

The relationship (10) follows:

- the profit increase leads to a proportional increase in the value of the enterprise;
- the percentage change in the value of the enterprise's change in earnings does not depend on the growth rate of the free cash-flow g ;
- the elasticity of establishing the value of the enterprise on a profit basis will never be less than 1.

The elasticity of the value in relation to the growth rate of the cash-flow is determined in the following way:

$$EL_g = \frac{g}{r-g}, \quad (11)$$

From this relationship follows:

- increasing the growth rate of the cash-flow (the other conditions remain the same) leads to an increase in the value of the enterprise;
- the smaller the difference between capital expenditure (r) and the growth rate of the free cash-flow (g), the greater the influence of the percentage change in growth rate on the value of the enterprise.

Elasticity of the enterprise's value after additional investments higher than depreciation shows how many percent of the company's value will change if the size of these investments will change by 1%.

$$EL_I = \frac{-1}{\frac{FCF}{I}}, \quad (12)$$

The conclusion of the relationship (12) is as follows: the reduction of additional investments to support the given level of the free cash-flow leads to an increase in the value of the enterprise.

2.5. Model of production cycles of I. Egherev

Another method of value management was proposed by the Russian scientist I. Egherev (2003), which researched the impact of the production and financial cycles on the value of the business.

The notion of cycle is used to characterize the continuous flow of economic operations. The cycle of any production includes the following processes:

- purchase, which leads to an increase in stock of commodities and commercial debts;
- production, which involves increasing production and finished products in warehouse;

- the realization, which leads to the increase of receivables and money in the house and in the settlement account.

In practice two basic cycles are examined: production and finance.

The production cycle begins from the moment the raw material enters the warehouse of the enterprise and ends when the buyer's goods are delivered.

The financial cycle starts from the moment of payment to the suppliers of raw materials (payment of the advance for the supplier, payment of the debt on the commercial invoices) and ends when the money is collected from the buyers of the finished goods (payment of the receivables, receipt of the advance).

The time period, during which the money and assets circuit is being carried out, presents the duration of the cycle. The rotation indicators (in days) are used to estimate the duration.

The production cycle is characterized by the period of rotation of stocks of raw materials and materials, the rotation period of the production under execution and the period of rotation of the finished goods stocks. Financial cycle - through the period of rotation of advances granted and received, the period of rotation of creditor debt and the period of rotation of receivables (see formula 14).

$$D_{CP} = D_{SMP} + D_{PC} + D_{PF}, \quad (13)$$

$$D_A = 0 \Rightarrow D_{CF} = D_{CP} + D_C - D_{DC},$$

$$D_A > 0 \Rightarrow D_{CF} = D_A + D_{CP} + D_C,$$

where: D_{CP} – production cycle length; D_{SMP} duration of rotation of stocks of raw materials; D_{PC} – the duration of rotation of production in progress; D_{PF} – duration of finished production rotation; D_{CF} – duration of the financial cycle; D_A – the duration of the advances granted rotation; D_C – the duration of receivables rotation; D_{DC} – the duration of commercial debt rotation.

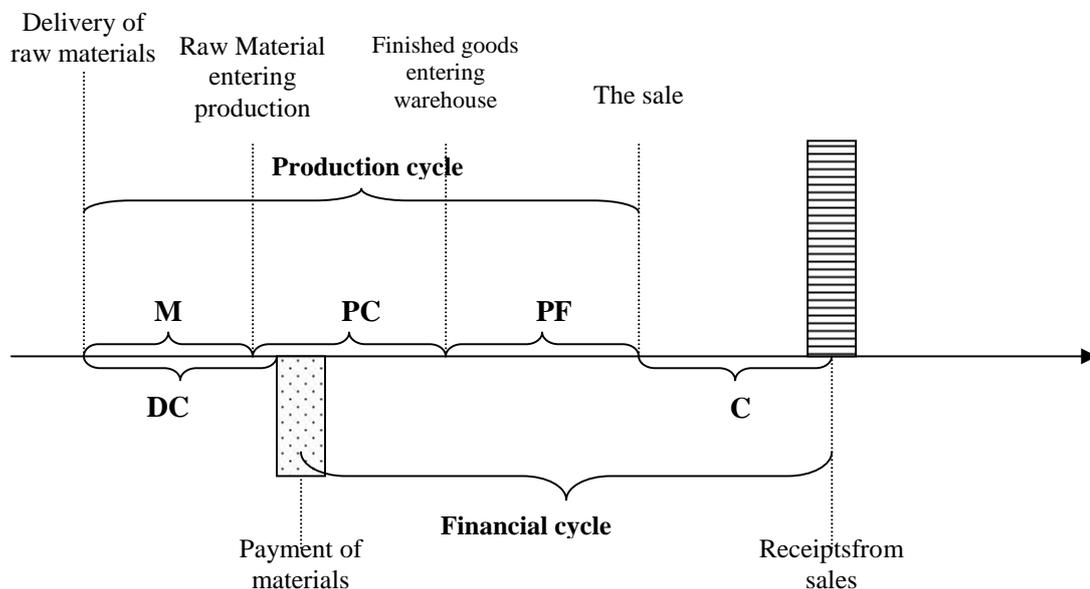


Figure no. 3. The financial and production cycle (without advances)

Source: Egherev, 2003.

Let's examine in more detail the case when the advancement of economic operations is not carried out. In other words, the enterprise does not pay any prepayment to

suppliers for the purchase of raw materials and materials, and buyers do not pay in advance for the company's finalized output.

As can be seen from Figure no. 3, notwithstanding the fact that there is an uninterrupted flow of assets within a cycle, from one stage of the production cycle to another stage, the actual change in the size of the cash-flow takes place only twice: at the time of payment To the enterprise of commercial debts and when the payment for the delivered output is received.

$$E_t^c = \frac{1}{R^t} \left\{ -CF_{DCt} + \frac{CF_{Ct}}{R^{Dc+Dcp}} \right\} = \frac{1}{R^{t+D_{DC}}} \left\{ -CF_{DCt} + \frac{CF_{Ct}}{R^{Dc+Dcp-D_{DC}}} \right\} =$$

$$= \frac{1}{R^{t+D_{DC}}} \left\{ -CF_{DCt} + \frac{CF_{Ct}}{R^{D_{CF}}} \right\}, \quad (14)$$

where: t - the period for which the influence of the cycle is examined; R – unit plus discount rate; E^c – cycle value; CF_{DCt} – cash-flow for the payment of commercial debts; CF_{Ct} - cash-flow for the collection of receivables.

The discount rate must include the components necessary to offset the risks associated with the delivery of raw materials and materials, production manufacture, retention, disposal and collection of receivables.

If we exclude the formula from the formula, as a factor that does not influence the sequence of thoughts, and leave only the lasting characteristics of the cycles we will get:

$$E_t^c = \frac{1}{R^{D_{DC}}} \left\{ -CF_{DC} + \frac{CF_C}{R^{D_{CF}}} \right\}. \quad (15)$$

From the analysis of the formula (15) we can deduce some aspects of the current assets management. First, business value influences all aspects of the financial cycle, many of them acting in opposite directions. This influence is both linear and non-linear. The increase in value influences the size of receivables while keeping the duration of the financial cycle constant. This is equivalent to reducing the duration of commercial credits to buyers, as well as increasing immediate sales and / or increasing receipts. From another point of view, the increase in the duration of commercial credit from suppliers in the tendency to reduce the prices of purchased raw materials, provided the volume of production is not reduced, will positively influence the value of the business. Formula (15) allows us to make a quantitative assessment of the influence of various strategies for the management of commercial debts and debts on the value of the enterprise in general.

Since the production process at any enterprise is the primary source of cash inflows, the inequality of positive input generated by flows from asset rotation to the final value of the business must be respected. Otherwise, we will observe the situation when the inputs of money from the sale of fixed assets will be used to offset the negative value of the production activity, or the depreciation will be "exhausted". Theoretically, for cash-flow offsets in the production business, financial resources can be infinitely infinite but then the value of the enterprise will be lowered for creditors, and high prices will be required for the new credits or will be refused for them . The infinite financial supply of the enterprise by the founders is ruled out, because rather the founders will place their resources in a more efficient business.

After a series of changes, we will get the criterion of keeping the value of the business in the context of doing the current operations.

$$E^c \geq 0 \Rightarrow \frac{1}{R^{D_{DC}}} \left\{ -CF_{DC} + \frac{CF_C}{R^{D_{CF}}} \right\} \geq 0 \Rightarrow \frac{CF_C}{R^{D_{CF}}} \geq CF_{DC} \Rightarrow CF_C \geq CF_{DC} \times R^{D_{CF}}, \quad (16)$$

If the inequality (16) breaks down, then, ultimately, not modifying existing purchasing, production, and disposal policy, the enterprise will go bankrupt because of the permanent decline in value.

In practice, the use of inequality (16) can look like this:

From the reports for the previous period the debtor and creditor debt amounts will be taken, the duration of the financial cycle will be calculated and the equality of the required profit will be met by the formula (16). Next, we will conclude on the efficiency of the enterprise's economic activity and the "liquidation" of value.

De facto, inequality (16) gives us another criterion to assess the influence of managerial decisions on the outcome of the company's current business. If, as a result of the decision, inequality is breached, then it is sensible not to adopt such a decision or postpone its adoption until the conditions are more favorable.

Analyzing the influence of cycles on the value of the business, I. Egherev investigated the issue of managing the value of enterprise cycles.

Determining the value of cycles is of special significance in the context of managerial procedures. Within these procedures, particular attention should be paid to solving the problem of the value of cycles.

Let's examine in more detail the influence of changes in particular parameters of the financial and production cycle on the change in the value of the business.

In order to determine the basic direction of the management action to increase the value of the cycles, the method based on the value sensitivity analysis may be used based on other factors taken separately. The method is based on the calculation of the sensitivity coefficients and the choice of all factors with greater influence on the value (factors with higher sensitivity coefficients).

The model of cycle value management by sensitivity analysis will be described in relation (17), relationships through which the link between factor change and the value of the business is ensured.

$$\frac{\Delta \tilde{E}}{E} = \sum_n K_F^n \frac{\Delta \tilde{F}_n}{F_n}, \quad (17)$$

where: \tilde{E} - the value of the enterprise (random size); E - the expected value of the enterprise; $\Delta \tilde{E}$ - increase in the value of the enterprise; \tilde{F}_n - the factor n size (random size); F_n - the expected factor n value; $\Delta \tilde{F}_n$ - factor n increase; K_F^n - the coefficient of sensitivity of the value of the enterprise to the factor n.

Interpretation of the content of the sensitivity coefficient can be as follows: the sensitivity coefficient shows how many percent the business value will change when changing the factor by 1%. Correspondingly, the higher the coefficient, the more the value of the enterprise will change.

It should be noted that as the factors change, the sensitivity of the value to the totality of factors will change, practically regardless of whether one or more factors have changed.

3. Conclusions

The analyzed financial models are a tool for quantifying the impact of one or more factors on the increase in the value of the enterprise. Based on them, procedures for financial management of the value of the enterprise may be developed, which may include:

- the duration of commercial debt rotation - the measures to increase the repayment term of commercial debt on the basis of revision of the terms of the contracts,

carried out in accordance with the cash-flow management measures for commercial debts;

- the duration of claims rotation - measures to timely and integrally collect receivables on the basis of the review of the terms of the contracts, carried out in accordance with the cash-flow-related receivables management measures;
- the production cycle length - measures to reduce the production cycle length by implementing advanced technology and technologies in production, optimizing the delivery schedule of raw materials and materials, employees' qualification and level of their involvement;
- cash-flow related to trade debts - measures to reduce the purchase costs of raw materials and materials, including the reduction of payment terms, the search for new suppliers. Replace raw materials and materials purchased with cheaper materials;
- cash-flow related to receivables - measures to increase the attractiveness of the manufactured production on the market, the introduction of flexible payment conditions, the search for reliable partners, the timely and full collection of receivables;
- discount rate - measures to reduce production process risks as well as supplier and customer risk.

Summarizing the issues examined, it must first be noted that the list of issues presented is not complete, and second, each of these models has a unique value, yet the most fundamental one can be considered as Damodaran's model. Walsh's model is appealing by its simplicity and can be recommended for the company's express diagnosis. Egherev and Mordashev's models are more complete, they can be considered as a development of Damodaran's ideas and other specialists in analyzing the sensitivity of business value components.

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