
**KNOWLEDGE OF PROFITABILITY AND LIQUIDITY – A FACTOR FOR
ACHIEVING ENTERPRISE’S FINANCIAL EQUILIBRIUM**

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Abstract: The issue of profitability of industrial enterprises is topical at all stages and phases of their development. The topical nature of this issue is defined by: 1) The competitive and dynamic market requires industrial enterprises to continue maintaining stable financial position, good profitability and liquidity, by ensuring permanent equilibrium between them. 2) The profitability increase causes decrease of the enterprises' liquidity level, and vice versa. This objective fact necessitates the achievement and maintenance of balance between the values of indicators that measure profitability and liquidity. 3) The image of an enterprise towards internal and external subjects. The good values of key business indicators are an important factor for the establishment of the enterprise's positive image towards different subjects (clients, suppliers, banks, government authorities, enterprise's staff, etc.), with which it maintains business relations. 4) Advanced information and communication technologies allow to carry out business analysis, including the analysis of the enterprise's financial equilibrium and its elements (financial stability, profitability and liquidity) in real time, which gives the opportunity to develop and make early decisions for the management of the financial results, profitability, liquidity and financial stability, and therefore of the financial equilibrium of the industrial enterprises in Bulgaria. Furthermore, adverse trends in the enterprise's business that could have negative impact on the financial stability and the balance between profitability and liquidity, thus causing their financial misbalance, could be detected in timely manner.

In economic practice in Bulgaria, the common methodologies for analysis of profitability calculated on the basis of enterprises' assets, capital, equity, expenses and revenue, are applied only. Calculating profitability on different basis is useful for the business, as it allows to identify and assess the power and direction of impact of the direct factor system by functional centers of responsibility and binding different aspects of the overall business of industrial enterprises. This allows to identify objectively existing causalities between key business indicators that describe the business efficiency. Obtained analytical information gives the financial management the opportunity to make appropriate, justified and timely decisions for the management of the overall business, and for the achievement and maintenance of market stability and financial equilibrium of the enterprise in operational and strategic aspect.

This study is aimed at working out an analytical model binding asset-based profitability and liquidity of industrial enterprises. This is about profitability of production capital – these are all assets used for production activities – fixed tangible assets and short-term assets. It should be noted that an objective relation exists between the profitability of production capital and the total liquidity, which to our opinion is important for the business.

The object of this study covers profitability and liquidity considered as elements of the system defining the financial equilibrium, and its subject matter – the interrelation between profitability of production capital and the total liquidity of industrial enterprises.

Keywords: profitability, liquidity, financial stability, financial equilibrium, analysis.

1. INTRODUCTION

The profitability of enterprises in the industrial sector of the country is a challenging issue at all stages of their development. It is driven by the following conditions:

- Competition is the basic mechanism of the market economy. The market, characterized by dynamism and a certain degree of entropy, requires maintenance of a sound financial position, good profitability and liquidity of the enterprises in the industrial sector of the country.

- Higher profitability entails worsening of companies liquidity and vice versa. This objective circumstance imposes the need to achieve and maintain a proper balance between the values of the parameters of profitability and liquidity.

- The processes of globalization and intense movement of persons, goods and capital. An objective necessity arises to carry out analysis and evaluation of both the profitability of national economy, of individual sectors and of enterprises, and of the individual profitability of individual products.

- The image of the enterprise before external entities. Good values of key business indicators, including profitability, both in day-to-day and strategic aspect is an important factor affecting the formation of positive attitude of external actors to the company and its business.

- The image of the enterprise before the employees (staff).
- Up-to-date information and communication technologies enable business analysis, including profitability analysis, to be carried out online. This allows the development and making of advanced decisions for the management of financial performance, profitability and the financial position of enterprises in the industrial sector of the country.

Knowledge about profitability and various models for its analysis provide various opportunities for the financial management of industrial enterprises to produce and make correct and justified managerial decisions for business development in a day-to-day and strategic aspect. This allows individual industrial enterprises to achieve and maintain financial equilibrium. Significant here is the objectively existing relationship between profitability and liquidity of an enterprise as system components essential for the financial equilibrium of the enterprise. We are talking specifically about the relationship between the profitability of productive capital and the degree of the total liquidity of an enterprise.

2. PROFITABILITY AND LIQUIDITY

Profitability expresses the economic efficiency (effectiveness) of the activity of business units, expressed through the net income.⁹ It is a relative parameter, which characterizes the efficiency of the business of individual companies, industries and the national economy. In the reproduction process it is "important not only to recover the cost of production,¹⁰ but also to get profit. The profit margin "itself does not show exactly enough the degree of efficiency¹¹ of the business of an individual enterprise, the industry or the economy of the country.

Therefore, the profit margin needs to be compared and referred to a relevant base – assets, productive assets, capital, equity, fixed capital, income, expense, production cost, etc.

The issue of the essence of profitability is widely discussed in specialized literature. In the accounting and analytical literature in the country since the 20s of the last century to the present the views of a number of Bulgarian scientists are known, such as: D.Dobrev, S.Cholakov, D.Kolev, K.Pergelov, K.Chukov, M.Timchev, T.Trifonov, L.Todorov, etc. who in one way or another have contributed to the theoretical knowledge in the field of business analysis.

In the opinion of K.Chukov profitability "in the broadest sense of the word is profit-earning."¹² The normal functioning and prosperity of each undertaking "suggests such a level of profitability that the enterprise, after paying the taxes, can cover all their costs, including and those for expanding the production."¹³ In essence, profitability "this is the ability of an enterprise to generate profit"¹⁴ i.e. it is able "with the earnings from their business not only to recover the costs incurred, but also to make a profit."¹⁵ K.Chukov suggests that "the baseline in profitability analysis (*my note - is*) distinguishing, analysis and assessment of the impact of various factors on the dynamics of profitability. For this purpose various factor models with an economic logic can be applied."¹⁶ It is underlined that factor models for profitability analysis, evaluated on different bases, reveal the most important causal links between the parameters for the analysis of financial position and financial performance.¹⁷

In our opinion this is about objectively existing links between the key business performances indicators dealt with in the two interrelated aspects with each other. On the one hand, this is the link between financial performance (profit) and profitability, considered as factorial and resulting parameter. On the other hand, these are the objectively existing cross-links between profitability, liquidity, financial stability and the risk of commercial insolvency and bankruptcy considered as elements of the system, characterizing financial equilibrium, respectively the imbalance of industrial enterprises. Not without reason it is underlined that factor models for profitability analysis are the models for the prediction of financial sustainability (*my note - stability*) of the enterprise.¹⁸ In this connection K.Chukov

⁹ Rechnik po politicheska ikonomiya, Partizdat, Sofiya, 1975, p.577

¹⁰ Ibid., p.577

¹¹ Ibid., p.577

¹² Chukov Kr., "Analiz na prihodite, pechalbata i rentabilnostta na predpriyatieto", IK "Yurapel", Sofiya, 1995, p.69

¹³ Ibid., p. 69

¹⁴ Chukov Kr., "Finansovo-stopanski analiz na predpriyatieto", UNSS, Sofiya, 2011, p.184

¹⁵ Ibid., p.184, Chukov Kr., R.Ivanova, "Finansovo-stopanski analiz", IK-UNSS, Sofiya, 2014, p.223

¹⁶ Chukov Kr., "Analiz na prihodite, pechalbata i rentabilnostta na predpriyatieto (problemi i resheniya)", UI "Stopanstvo", Sofiya, 2009, p.88

¹⁷ Ibid., p.88

¹⁸ Sheremet A., R.Sayfulin, E.Negashev, "Metodika finansovogo analiza", "Infra-M", Moskva, 2001, p.82

suggests that the causation between the above mentioned parameters “are indispensable tools for an “explanation” (assessment) of the occurred situations.”¹⁹

According to us, profitability is an economic category. It is a general relative indicator, which characterizes the efficiency of enterprise's overall activity. Profitability may be calculated on different bases: assets; productive assets; the entire invested capital; equity; fixed capital; called capital; revenue; revenue from sales; expenditures; production cost, etc.

For industrial enterprises, the parameter of profitability of productive assets (productive capital) is of specific interest. These are the assets that are employed in the production and sales of products. What is meant are floating tangible assets (real capital assets) and current assets (floating productive capital).²⁰

Profitability of productive capital is an important business parameter, which characterizes the efficiency of business operations of industrial enterprises. It shows the amount of profit from sales of products per 100 BGN of invested capital in production operations. The productive capital includes the portion of the enterprise resources, which is contained in its tangible assets and in a part of current assets.

Profitability of productive capital is considered as a separate subject of analysis. From this point of view various direct and indirect factors affect the dynamics of the parameter. Business analysis, using elements of the method, establishes and evaluates the strength and the direction of the impact of direct factors on formation and change of productive capital profitability. One of these factors is the degree of overall liquidity of an enterprise. Therefore, in this present study we would like to emphasize the objectively existing relationship between the profitability of productive capital and the overall liquidity of the company.

In the specialized literature in the country, the liquidity is defined in the following manner. According to V.Kasarova “liquidity (current solvency) is one of the most important characteristics of the financial situation of the undertaking, specifying the ability of payment of bills and in fact is one of the bankruptcy indicators. The purpose of liquidity analysis is to evaluate the ability of the enterprise in a timely and thorough manner to meet their short-term obligations at the expense of their current assets.”²¹ The level of “solvency is characterized primarily by the liquidity parameters”,²² and “the degree of liquidity is the ability of the assets to be converted into money (the most liquid assets) without visible reduction of their value.”²³

We believe that this opinion does not make a distinction between enterprise liquidity and assets liquidity. Such differentiation is evident in the opinion of L.Todorov, who suggests that “liquidity of an asset shall mean the feasibility of converting it into cash”²⁴, and “liquidity of an enterprise means its ability to cover their current obligations with cash and other quick assets. It is a prerequisite to ensure solvency and characterizes the short-term financial stability of the enterprise.”²⁵

In our view, the liquidity is also an economic category. The liquidity of an enterprise expresses its ability to cover their short-term liabilities with available current assets, excluding deferred expenses. Short-term liabilities include the outstanding portion of long-term liabilities to be paid during the year.

For the analysis and evaluation of liquidity, absolute and relative parameters can be used the values of which are determined according to the data of the balance sheet. An absolute parameter for the analysis and evaluation of liquidity is the net working capital, and relative indicators are the factors characterizing the various degrees of liquidity. In the group of relative parameters other indicators can also be used for the analysis and evaluation of liquidity.

For the purposes of liquidity analysis and management, the importance of this parameter can be calculated both as at the date of the financial statement (statics) and as average for the reference period (dynamics).

¹⁹ Chukov Kr., “Analiz na prihodite, pechalbata i rentabilnostta na predpriyatieto (problemi i resheniya)”, UI “Stopanstvo”, Sofiya, 2009, p.88, cit. Sheremet A., R.Sayfulin, “Metodika finansovogo analiza”, “Infra”, Moskva, 1996, p.117-118

²⁰ Chukov Kr., R.Ivanova, “Finansovo-stopanski analiz”, IK-UNSS, Sofiya, 2014, p.263

²¹ Kasarova V., Dimitrova R., Analiz na finansov otchet, nauchen rakopis, depoziran v TSNTB. № Nd 373/2005, p.29

²² Kasarova V., Modeli i pokazateli za analiz na finansovata ustoychivost na kompaniyata, studiya, p.20

²³ Ibid., p.20

²⁴ Todorov L., Otsenka na finansovata ustoychivost (chast 2) – Otsenka na likvidnostta i platezhosposobnostta, 19.05.2012, <http://cfo.cio.bg/305>

²⁵ Ibid

3. ANALYSIS MODEL

Profitability of productive assets (PT^{pa}) is defined as a percentage ratio of the profits from sales of products (Pf^s) and the average amount of productive assets (A^{pa}) – **model 1:**

$$PT^{pa} = \frac{Pf^s}{A^{pa}} \times 100 = \frac{Pf^s}{\overline{TFA} + \overline{CA}} \times 100$$

Where:

\overline{TFA} is the average value of fixed assets, and

\overline{CA} - is the average value of current assets.

The average size of the fixed assets and current assets is calculated as an arithmetic average or as historical values using the carrying amounts of these assets.

The coefficient of overall liquidity of an enterprise ($K^{o.l.}$) is calculated as a ratio of the average amount of current assets to the average amount of its short-term debts (\overline{CL}):

$$K^{o.l.} = \frac{\overline{CA}}{\overline{CL}}$$

It shows the average value of current assets, which corresponds to one lev of average short term debts of the enterprise.

From the last formula the average value of current assets of the enterprise can be expressed, i.e.:

$$\overline{CA} = K^{o.l.} \times \overline{CL}$$

We replace the resulting formula in the source model for calculation of profitability of productive assets, and as a result thereof we get an improved analysis model, describing the relationship between the profitability of productive capital and a degree of overall liquidity of the enterprise - **model 2:**

$$PT^{pa} = \frac{Pf^s}{\overline{TFA} + \overline{CA}} \times 100 = \frac{Pf^s}{\overline{TFA} + K^{o.l.} \times \overline{CL}} \times 100$$

The formula shows that the dynamics of profitability of production capital is affected by four direct factors:

- 1) Changes in the amount of profits from sales of products.
- 2) Changes in the average value of fixed assets.
- 3) Changes in the coefficient of overall liquidity.
- 4) Changes in the average amount of short-term debts of the enterprise.

4. VALIDATION OF ANALYSIS MODEL

The needed for the analysis information about the activity of leading enterprises of the canning industry in Bulgaria for two consecutive reporting periods is summarized in Table 1. Using the data provided in the table, the values of profitability of productive assets (model 1), as well as the profitability of these assets in relation to the overall liquidity of the enterprise (model 2) are calculated.

Table 1. Input data (thousand BGN)

Enterprises	Profit from sales of products		Average value of:					
			fixed assets		current assets		short-term debts	
	2015 y	2016 y	2015 y	2016 y	2015 y	2016 y	2015 y	2016 y
E1	1100	740	14497	15372	4435	3475	3131	2245
E 2	5015	7780	26608	28248	8165	6508	3681	3799

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E 3	2815	1270	14650	15720	4316	3645	2487	2068
E 4	1695	1698	15145	15275	3860	3738	2143	1950
E 5	640	1915	3585	5875	729	1073	360	468
E 6	2015	2120	14015	13310	2610	3495	1450	1608
E 7	430	545	8470	8580	1385	1355	671	656
Group total	13710	16068	96970	102380	25500	23288	13922	12793

From the carried out calculations, table 2 shows that both models for determination of profitability of production assets have yielded identical results. The improved model 2 for the analysis and evaluation of production assets profitability allows us to analyze the impact of changes in the degree of overall liquidity of an enterprise on the changes that have occurred in the profitability of production assets. This analysis provides knowledge and allows the financial management of industrial enterprises to take adequate and justified decisions to maintain the balance between the importance of productive assets profitability and the overall liquidity.

Table 2. Additional calculated parameters

Enterprises	Overall liquidity index, BGN		Profitability of productive assets, %			
			Model 1		Model 2	
	2015 y	2016 y	2015 y	2016 y	2015 y	2016 y
E1	1,42	1,55	5,81	3,93	5,81	3,93
E 2	2,22	1,71	14,42	22,39	14,42	22,39
E 3	1,74	1,76	14,84	6,56	14,84	6,56
E 4	1,80	1,92	8,92	8,93	8,92	8,93
E 5	2,02	2,29	14,84	27,56	14,84	27,56
E 6	1,80	2,17	12,12	12,62	12,12	12,62
E 7	2,06	2,07	4,36	5,49	4,36	5,49
Group total	1,83	1,82	11,19	12,79	11,19	12,79

The effect of the above mentioned four direct factors on the dynamics of production assets profitability for 2016 in comparison with 2015 can be determined by the method of successive substitutions. For the first enterprise that influence is summarized in table 3.

Table 3. Enterprise 1

Factors affecting change in production assets profitability	Factors influence, percentage points	
	+	-
1. Changes in the average value of fixed assets	-	-0,26
2. Changes in short-term debts	0,38	-
3. Changes in the overall liquidity index	-	-0,09
4. Changes in profit from sales of products	-	-1,91
Factors leading to an increase in the profitability of production assets	0,38	-
Factors leading to a decrease of profitability of production assets		-2,26
Overall factors impact		-1,88

Similarly, the intensity and direction of influence of direct factors on the dynamics of productive assets profitability can be established also for the other enterprises of this industry.

The data in table 3 show that the profitability of production assets of the first undertaking has decreased by 1,88 percentage points, due to the overall effect of the direct factors involved in model 2. In other words, the influence of the direct factors is just as much, as is the change in the profitability of production assets in 2016 compared to 2015, namely 1,88 percentage points (3,93-5,81).

From the table we can see also that the reduction of short-term debts of the first enterprise by 886 thousand BGN (2245 - 3131) has led to an increase in the profitability of production assets by 0,38 percentage points. All other factors have a negative influence. For example: an increase in fixed assets by 875 thousand BGN (15372 - 14497) has led to a reduction in the profitability of production assets by 0,26 percentage points; the increase of the coefficient of overall liquidity by BGN 0,13 (1.55-1.42) has caused a reduction of this derived parameter by 0,09 percentage points, and the decrease of the profits from the sales of products by BGN 360 thousand (740-1100) has led to a reduction in profitability of production assets by 1,91 percentage points.

Theoretical research and the results of the analysis show that there is an inverse dependence between the profitability of productive assets and the level of overall liquidity of the enterprise. With the increase of the coefficient of overall liquidity the productive assets profitability decreases, and vice versa.

5. CONCLUSION

The knowledge about profitability and liquidity, as well as about the objectively existing relationship between them, is useful for the financial management for the generation and making timely, justified and adequate decisions to achieve equilibrium between the values of these key business indicators. This is a valid prerequisite for achieving and maintaining the financial equilibrium of the enterprise in a day-to-day and strategic aspect.

In accordance with the set objectives and tasks, as well as depending on the needs of financial management of information, the analysis of profitability of productive assets can be enhanced by establishing the intensity and the direction of the influence of the following factors:

- 1) Changes in the profitability of sales.
- 2) Changes in the effectiveness of the use of fixed tangible assets, expressed by means of the absorption coefficient.
- 3) Changes in the coefficient of overall liquidity.
- 4) Change in the turnover of short-term debts, expressed through the engagement rate of short-term equity.

In this way the scope of knowledge about objectively existing causal links between key business indicators and the factors justifying them is broadening, which is of particular importance for business practice.

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