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PROBLEMS OF THE ACCOUNTING BUSINESS ANALYSIS OF THE STRATEGY OF THE COMPANY IN A BALANCED SYSTEM OF INDICATORS

Annotation. *In the scientific report opportunities for integration of accounting business analysis into a balanced scorecard have been explored and a concentric model has been proposed. The report proposes a methodology, models and indicators for analyzing the financial strategy of the corporation. Models, methods and indicators for analysis of the business strategy, financial and operational risk of the companies have been proposed.*

Keywords: *accounting analysis, balanced system, operational risk, business risk*
JEL code: *M 40*

In today's market conditions, the need for flexible methodological scheme for accounting business analysis (ABA) of the Company is growing. ABA is to be based on a complex, systematic and balanced approach. The analysis should be consistent with the design of the balanced scorecard for strategic performance analysis (Fig. 1).

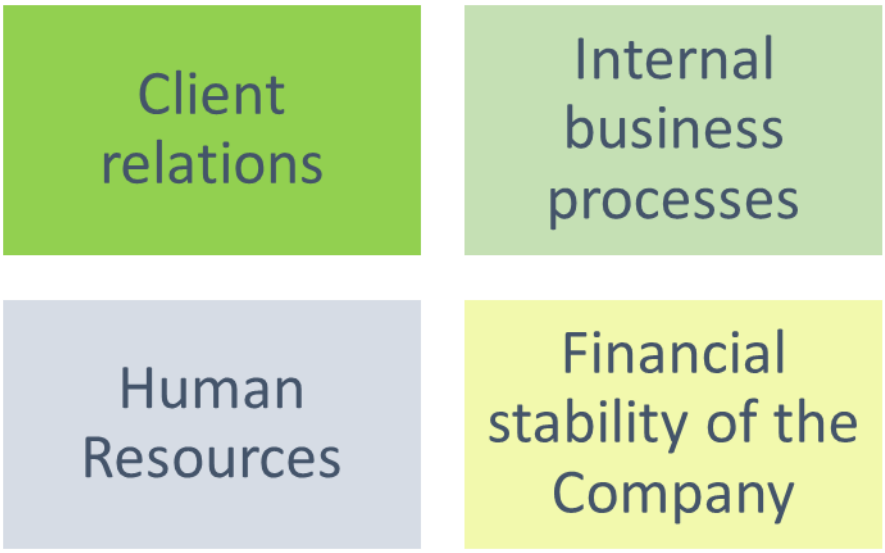

Fig. 1. The design of the balanced scorecard for strategic performance analysis

Financial risk represents variable intensity and variation of profits as a consequence of the Company's debt structure (debt to equity ratio). The financial risk analysis comprises the following:

1. Analysis of risk sources through application of sensitivity analysis or through application of scenario-based analysis.
2. Risk analysis through measurement of key performance indicators (KPIs): profits elasticity, standard deviations, variation coefficient.
3. Analysis of the Company's ability to cover its liabilities which includes measurement of its solvency (solvency ratio analysis), financial autonomy, indebtedness, financial flexibility, interest cover, financial leverage, liquidity (current ratio, quick ratio, cash ratio).
4. Analysis of the Company's ability to prevent and / or eliminate the risk: opportunities for regulation of the discount rate, the speed of cash flows in the context of different investment decisions.

ABA of the "*Gearing*" ratio can be used for measurement of the Company's financial leverage. The Company's capital structure analysis required combined measurement of the

company's *gearing*, Company's earnings per share (*EPS*) and levels of Company's financial leverage (*FL*).

Levels of the financial leverage can be measured through the following calculation:

$$FL = Prf(i)/Prf$$

where:

Prf (*i*) – gross profit including interest income;

Prf – gross profit excluding interest cost;

The purpose here is to analyse the effects from changes in capital structure on the Return on Equity (ROE) through the effect of financial leverage. The measurements can be structured as follows (Table 1):

Table 1

Indicators for analysis of the effect of financial leverage

Key performance indicators *In BGN thousand*	**Debt 0%**	**Debt 35%**	**Debt 55%**
1. Equity	105 000	105 000	105 000
2. Share capital	105 000	68 250	57 750
3. Debt	-	36 750	47 250
4. Gearing in % ((debt to equity) x 100			
5. Gross profit (including interest income)	31 500	31 500	31 500
6. Interest cost	0	3 675	4 725
7. Gross profit excluding interest costs (p.5 – p.6)	31 500	27 825	26 775
8. Income tax	9 450	8 347	8 032
9. Net profit	22 050	19 478	18 743
10. Number of ordinary shares (1 share = BGN 1 050)	100	65	55
11. Profit per share	220	299	341
12. Earnings per share (EPS) % 100.0	135.9	155.0	
13. Financial leverage (p.5/p.7)	1.00	1.13	1.18
14. Return on Equity (RoE),% (p.9/p.2) x 100	21.00	28.50	32.40

The metrics above show direct correlation between changes in capital structure, net income per share and levels of financial leverage. With the increase of the debt portion with Gearing from 0 to 55%, the EPS increases from BGN 220 thousand to BGN 341 thousand. The increase of the financial leverage from 1.00 to 1.18 is related with the increase of the Return on Equity in the range of 21.00% to 32.40%. There is a favorable effect for the Company as the portion of the debt increases in the capital structure. The increase of the financial leverage leads to increase in Return on Equity. The increase of the debt portion should be within reasonable limits and Weighted Average Cost of Capital (WACC) shall be also considered. WACC is to be increasing within reasonable limits as well, so that risk of imbalance of the capital structure and liquidity and insolvency risks can be mitigated.

In the course of capital structure analysis in addition to measurement and analysis of the financial leverage, liquidity and solvency ratios shall be observed in parallel.

The financial strategy of the Company is to consider and shall be based also on the measurement mehtods of investment analysis where time value of money is incorporated.

$$NFV_E = CAP_0(1+r)^n$$

$$NPV_E = \frac{EISLS}{(1+r)^n},$$

where:

NFV_E и NPV_E – Future and respectively Present net value of the Company's capital;

CAP_0 – value of capital at the beginning of the period;

EISLS – Expected Income Sales;

$(1+r)^n$ – discount factor;

n – number of years in the periods.

The models of analysis where time value of money is incorporated allows for prediction and budgeting of the future Company's revenue and profits.

$$NFV_E \text{ x } CAP_0 = EISLS$$

$$EPrf_e = \frac{NFV_E \text{ x } CAP_o \text{ x } ROS}{100}$$

$$S(D)_{cap} = GE_0 ,$$

where:

ROS – Return on Sales (or Return on Income);

$EPrf_e$ – Expected Operating Profit;

$S(D)_{cap}$ – Capital Surplus (Capital Deficit);

GE_0 – Estimated Capital Return .

The alternatives of capital structure when investing capital should be subject to comparative analysis.

It shall be considered that the financial strategy is closely linked to the production and trading strategy of the company. The objects of analysis can be represented schematically as follows (Fig. 2):

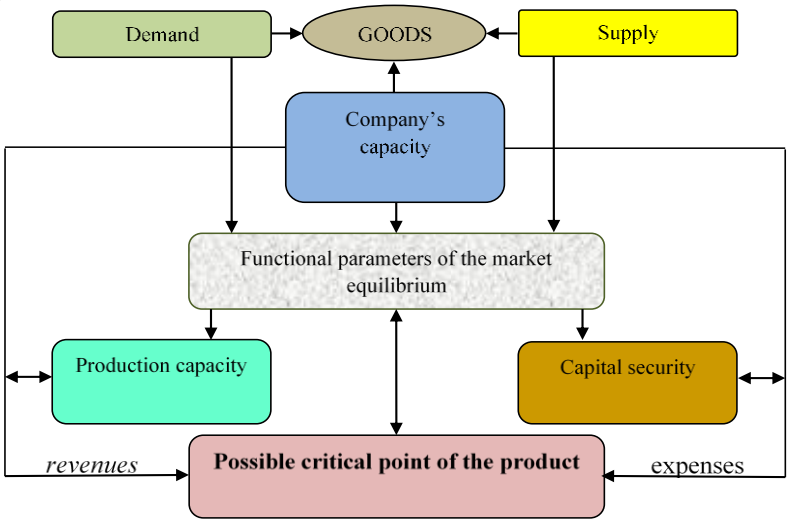

Fig. 1. The objects of analysis

The analysis of the market situation presupposes an assessment of the functional parameters of the equilibrium. It is defined by the factors of demand and supply of goods, the dynamics of the production capacity of the company and its capital security. On this basis, by analyzing the critical point of the products, a choice can be made of the production strategy of the company. Here it is considered that the choice of a profitable product is a leading element of the production and trade strategy of the company.

The analysis of the production and product strategy of the company can be based on the study of the dynamic balance between revenue and expenses.

It is appropriate to use the following method to determine the critical sales volume:

$$Q \text{ x } P_i - (Q \text{ x } VE_i + CE) = Prf(LS)$$

$$Q \text{ x } P_i - Q \text{ x } VE_i - CE = Prf(LS)$$

$$Q \text{ x } (P_i - VE_i) - CE = Prf(LS) BEP \rightarrow Prf(SLS) = 0$$

$$Q^{BEP} \text{ x } (P_i - VE_i) - CE = 0$$

$$Q^{BEP} \text{ x } (P_i - VE_i) = CE$$

$$(P_i - VE_i) = M_i$$

$$Q^{BEP} = \frac{CE}{P_i - VE_i} \text{ или } Q^{BEP} = \frac{CE}{M_i},$$

where:

VE_i- variable costs per unit of production

P_i – price per unit of production;
M_i – marginal income per unit (profit − variable costs);
Q^{BEP} – critical volume of sales.

The model for analysis proposed provides opportunity for managing the critical point and critical volume of the respective goods which is based on changes and decisions related to variable costs, fixed costs and selling prices.

Example: A company has four production divisions in four different locations which operate in different market regions where they have access (Table 2). It is required to select the production division where it is most appropriate to begin the production of product "X". The goal is to maximize company's profit in shortest term.

Table 2

Business indicators for CVP analysis

Product details	Possible scenarios:			
	I	II	III	IV
1. P_i (in BGN) unit price	100	120	100	100
2. VE_i (in BGN) variable costs per unit	80	70	75	80
3. *CE* (in BGN) fixed costs	10000	10000	9500	9500
4. Q^{BEP} (units) critical volume	500	200	380	475
Company's production division:	A	B	C	D

The analysis of the four options above shows that the most profitable decision for the company is to select the production of product "X" in production division "B".

ABA leads to the conclusion that under the circumstances in this division the critical point occurs at a lower critical volume – 200 units of production. If we precise the analysis between option I and II through application of method of chain substitutes, the following results will occur (Table 3):

Table 3

Indicators for factor analysis of the sales critical volume

Indicators	Values
1. Critical volume for division A (units)	500
2. Critical volume for division B, (units).	200
3. Difference between critical volumes for A and B (units).	-300
4. Factors impact:	
а) decrease in the variable costs in division B vs. division A (units)	-167
б) impact of fixed costs (units)	0
в) impact of the option for BGN 20 increase unit selling price in B vs. division B (100-20) (units)	-133
Total (overall) impact (units)	-300

The results suggest for looking for opportunities to decrease fixed costs at least to levels of fixed costs in option III and IV. This would decrease the critical value in option II with an addition of 10 production units:

$$\frac{9\ 500}{50} - \frac{10\ 00}{50} = 190 - 200 = -10\ units$$

The most favourable price for the critical point is the price is in the region where production units of division B are sold. It is obvious that the technology in the same division allows for the lowest amount of variable costs compared to the other three options.

The model for analysis of the critical volume provides for finding solution for desired volume of production where certain level of profit is guaranteed with constant or floating value of the other parameters of the product. Based on this model, in the presence of data for daily or hourly labour productivity, the moment at which the critical point of the product will be reached can be determined. By changing the parameters, the occurrence of this moment can be managed so as to be an optimal proportion to the moments of occurrence of the critical points of other types of products manufactured within the company. The preliminary analysis of the product structure can be performed through linear programming.

Example of preliminary analysis through graphical model.

A Company produces two types of product – X_1 and X_2. These are produces within three main divisions with following variable overheads (machine time consumption and fixed assets consumption) – Table 4:

Table 4

Product structure and resources by centers of responsibility

	Machine hours per item		Maximum level of machine hours based on production capacity
Production department	***Product X_1***	***Product X_2***	
I	30	60	180
II	50	40	200
III	70	0	280

Profit per production unit is as follows:

а) profit from product X_1 – BGN 9 thousand;

б) profit from product X_2 – BGN 6 thousand

It is required, through application of graphical model of analysis, to determine the optimal quantity to be produced from each product so that profits are maximised under the existing data for production overheads. It is required to establish the optimal product mix which maximises profit at company level.

Model for analysis:

1. Modelling of objective function, constraining conditions and the coordinates of the lines delimiting the area of optimal decisions:

$$Lev = 9x_1 + 6x_2 = Prf \rightarrow max$$
$$30x_1 + 60x_2 \leq 180l_1 \ (180/30, 180/60) = (6.3)$$
$$50x_1 + 40x_2 \leq 200l_1 \ (200/50, 200/40) = (4.6)$$
$$70x_1 + 0x_2 \leq 280l_1 \ (280/70, 0/40) = (4.0)$$
$$x_1 > 0, \quad x_2 > 0.$$

2. Analysis through graphical model application (Fig. 3):

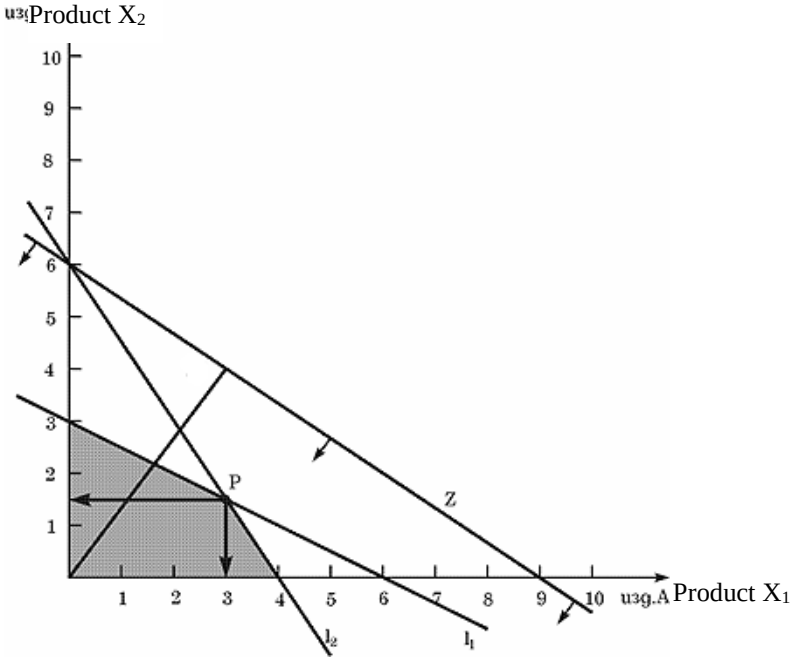

Fig. 3. Analysis through graphical model application

3. The number line of the function is translated towards the origin of the coordinate system. The point P is where the plotted number line crosses the feasible region (area of the optimal decisions) at first point. The optimal solution represents the coordinates of point P.(3;1,5). The optimal feasible solution under the existing constraints is achieved at production of 3000 units of production from X_1 and 1500 units of production from X_2.

4. The optimal product mix structure which maximises profits (*max Prf*), is as in the Table 5:

Table 5

Optimal product structure

Product	Volume of production – Q	Product share (%)
X_1	3000	77
X_2	1500	33
Total	4500	100

The Company shall produce X_1 and X_2 in the proportion of 77% and 33% respectively where total production volume amounts to 4500 units of production with maximum profit of BGN 36 000 thousand (9 300 + 6 150).

Conclusion

A dynamic and situational business metrics of the Accounting Business Analysis are needed in accordance with the peculiarities of the market and competitive environment. This requires an integration of different types of analysis within a balanced system of indicators in accordance with modern management science. It is necessary to improve the scientific method and techniques of the ABA. The methods of induction, deduction, analysis and synthesis must be harmonized with the principle of optimal content of accounting indicators. The information provision of the business accounting analysis in a balanced system of indicators poses significant challenges to the accounting and the systems for integrated reporting in the enterprises and corporations.

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