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Methods of Functional Factor Analysis of Financial Profitability Innovation Company

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Abstract: Recently the main concept of economic analysis was assessment of plan's performance using many indicators mostly physical ones. In terms of market structure development economic indicators took the first place. They show how various companies and organizations use production resources. It allows to compare efficiency of their functioning more objectively. Economically and logically, it is determined by efficiency definition actuality for use organizations' resources. In modern world economic events occur depending on actions of multiple factors with each one having its own parameters. The article considers author's multifactor model of financial profitability allowing to find primary causes of equity capital profitability changing more complex in comparison with other models. The author's model of financial profitability is analyzed by author's functional analysis methods that allow to make conclusion about company's financial profitability changing more easy to understand and less labor-consuming as well as to estimate amount of factor impact on investigated criteria's changing in system of economic management and criteria's changes tendency. Provided data is proved with traditional methods of factor analyses.

Key words: Factor analyses · Financial profitability · Effect of factor features changes · Comparative ration

INTRODUCTION

The author's model of financial profitability is designed to discover and analyze factors that determine the operating effectiveness of commercial organizations, as well as to estimate the degree of impact of these factors, their change trends and importance. Financial profitability is the main component of the index of economic growth. That is why the owners of commercial organizations are very interested in studying it under conditions of highly competitive environment. In a study of theoretic-methodological foundations of innovation as a major contribution was made by such foreign scientists, as Th. Schumpeter, PF Drucker, F. Hayek, E. Mansfield, A. Hosting, IM Pinnings, B. Santo and others [1-3]. Therefore in the modern context the research of the effectiveness of investment activity is the key factor in commercial organization development [4-8].

To determine the influence of factors on the dynamics of profitability of owned capital (hereinafter referred to as 'financial profitability') (*Rf*) we shall use the primary calculation formula for this criterion (Formula 1):

$$Rf = \frac{P}{SK} \tag{1}$$

where: P – Net profit (profit after profit tax, distributable profit); SK – average value of owned capital.

Then based on the known formula of financial profitability, the author derived the model of financial profitability for innovative company. It appears as follows (Formula 2):

$$Rf = \left(\frac{ZK}{SK*Ki}\right)*\left(\frac{SA}{ZK}\right)*\left(\frac{AK}{SA}\right)*\left(\frac{PK}{AK}\right)*\left(\frac{IK}{PK}\right)* \left(\frac{Vi}{IK}\right)*\left(\frac{SSi}{Vi}\right)*\left(\frac{PVi}{SSi}\right)*\left(\frac{(PP*Ki}{PVi}\right)*\left(\frac{(PDN*Ki}{(PP*Ki)}\right)*\left(\frac{(P*Ki)}{(PDN*Ki)}\right) \tag{2}$$

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where: *Rf* – financial profitability; *ZK* – average value of borrowed capital; *SK* – average value of owned capital; *SA* – asset value; *AK* – average capital stock, advanced into active assets (funds stored for purchase or other receipt of production goods and labor power); *PK* – average size of real capital, advanced into active assets, used for business reasons (entrepreneur's capital); *IK* – average size of innovation capital – pre-start costs and other nonrecurring costs, related to innovative product engineering; V_i – net proceeds of the innovative product sale – proceeds of the innovative product sale, that the company receives after tax (VAT, excise duties and similar binding payments); SS_i – cost of sales of innovative products; PV_i – gross profit from innovative products; *PP* – total sales profit for company; *PDN* – total before-tax profit for company; *P* – total net profit for company; K_i – innovative sales index. Herewith the innovation sales index (K_i) or the fraction of innovative products in the total output can be calculated from the Formula 3:

$$Ki = \frac{Vi}{V} \quad (3)$$

where: *V* – Total net proceeds for the company.

While analyzing the financial profitability, the current model is appropriate to use if the sales exposure of innovative products prevails in the realization of main products, i.e. $K_i > 0{,}5$.

Further the Filatov E.A. transforms his model (Formula 2) into the 11-factor model of financial profitability for innovative company (Formula 4):

$$Rf = F_1 * F_2 * F_3 * F_4 * F_5 * F_6 * F_7 * F_8 * F_9 * F_{10} * F_{11} \quad (4)$$

Or in short (Formula 5):

$$R_f = \prod_{n=1}^{11} F_n \quad (5)$$

where: $ZK / (SK*K_i)$ $(F)_1$ – financial lever arm of innovative activity (financial risk coefficient); SA / ZK (F_2) – total capital / borrowed capital ratio; AK / SA (F_3) – advanced into active assets capital share of the total capital stock; PK / AK (F_4) – entrepreneur's capital share of the capital advanced into active assets; IK / PK (F_5) – innovation capital share of the entrepreneur's capital; V_i / IK (F_6) – in the middle of the model there is factor 6 – the rate of return of innovation capital; SS_i / V_i (F_7) – expenditures for 1 dollar of innovative products; PV_i / SS_i (F_8) – production profitability of innovative products from gross profit; $((PP*K_i) / PV_i)$ (F_9) – sales profit / gross profit from innovative products ratio; $((PDN*K_i) / (PP*K_i))$ (F_{10}) – before-tax profit / sales profit from innovative products ratio; $((P*K_i) / (PDN*K_i))$ (F_{11}) – net profit / before-tax profit from innovative products ratio.

The model of financial profitability shown in the Formula 2, after the reduction, is restored to the initial state (Formula 1).

$$Rf = \frac{(P * Ki)}{(SK * Ki)} = \frac{P}{SK} \quad (1)$$

Further, based on methods of factor analysis developed by the author, we shall evaluate the degree of impact of 11 factors on a change in financial profitability [9-13].

The initial data for alternative factor analysis are presented in Table 1.

The auxiliary data on comparative coefficients for the factor analysis are presented in Tables # 2, 3.

Six Filatov's methods alternative methods of factor deterministic analysis (Formulas 1.1 - 6.11) are shown in Tables 4-6.

Methods 1.1 and 1.2, 2.1 and 2.2, 3.1 and 3.2 are reflex to each other due to the influence of adjusting coefficients.

Method # 1.1 (Formulas 1.1 – 1.11 in the Table 4) is based on the difference between planned net figures that can be adjusted by comparative coefficients (A_1, $B_1 – B_9$).

Method # 1.2 (Formulas 2.1 – 2.11 in the Table 4) is based on the difference between actual net figures that can be adjusted by comparative coefficients (A_{22}, $B_{10} – B_{18}$).

Method 2.1 (Formulas 3.1 – 3.11 in the Table 5) is based on the ratio of deflection of initial factor to initial planned factor multiplied by planned net figure that can be adjusted by comparative coefficients (A_1, $B_1 – B_9$).

Method 2.2 (Formulas 4.1 – 4.11 in the Table 5) is based on the ratio of deflection of initial factor to initial actual factor multiplied by actual net figure that can be adjusted by comparative coefficients (A_{22}, $B_{10} – B_{18}$).

Method 3.1 (Formulas 5.1 – 5.11 in the Table 6) is based on the ratio of deflection of net factor to the difference between actual net factors and planned factors that can be adjusted by comparative coefficients (A_1, $B_1 – B_9$).

Method 3.2 (Formulas 6.1 – 6.11 in the Table 6) is based on the ratio of deflection of net factor to the difference between actual net factors and planned factors that can be adjusted by comparative coefficients (A_{22}, $B_{10} – B_{18}$).

Table 1: The initial data for factor analysis

p/p	Indicators	Initial factor #	Plan*0	Fact**I	Deviation***Δ
1	V_i – net proceeds of the innovative product sale, thousand dollars		1000000	1300000	300000
2	SS_i – cost of sales of innovative products, thousand dollars		753600	1022500	268900
3	PV_i – gross profit from innovative products, thousand dollars (1 – 2)		246400	277500	31100
4	K_i – innovation sales index		0,66	0,60	-0,06
5	*PP* – total sales profit for company, thousand dollars		395000	473000	78000
6	*PDN* – total before-tax profit for company, thousand dollars		286000	353000	67000
7	*Ð* – total net profit for company, thousand dollars		200000	276503	76503
8	*ZÊ* – average value of borrowed capital, thousand dollars		601000	708000	107000
9	*SÊ* – average value of owned capital, thousand dollars		900000	845000	-55000
10	*SA* – asset value, thousand dollars		1501000	1553000	52000
11	*AK* – advanced capital, thousand dollars		720800	670000	-50800
12	*PK* – entrepreneur's capital, thousand dollars		570775	581000	10225
13	*IK* – innovation capital, thousand dollars		482127	495707	13580
14	*Rf* – financial profitability (7/9) = (15 * 16 * 17 * 18 * 19 *20 * 21 * 22 * 23 * 24 * 25)		0,222222222	0,327222485	0,105000263
15	financial risk coefficient (8/(9*4))	F_1	1,011784512	1,396449704	0,384665192
16	ratio of total capital to loan (10/8)	F_2	2,49750416	2,193502825	-0,304001335
17	the share capital is really advanced in assets in total capital (11/10)	F_3	0,480213191	0,431423052	-0,048790139
18	entrepreneur's capital share of the capital advanced into active assets (12/11)	F_4	0,791863208	0,867164179	0,075300972
19	innovation capital share of the entrepreneur's capital (13/12)	F_5	0,844688362	0,853196213	0,008507851
20	the rate of return of innovation capital (1/13)	F_6	2,07414229	2,62251693	0,54837464
21	expenditures for 1 dollar of innovative products (2/1)	F_7	0,7536	0,786538462	0,032938462
22	production profitability of innovative products from gross profit (3/2)	F_8	0,326963907	0,271393643	-0,055570264
23	sales profit / gross profit from innovative products ratio ((5*4)/3)	F_9	1,058035714	1,022702703	-0,035333012
24	before-tax profit / sales profit from innovative products ratio ((6*4)/(5*4))	F_{10}	0,724050633	0,746300211	0,022249579
25	net profit / before-tax profit from innovative products ratio ((7*4)/(6*4))	F_{11}	0,699300699	0,783294618	0,083993918

where: * 0 – last (base) period (year), taken as a base of comparison; ** I – reporting (current) period (year); *** Δ – change for the period, calculated as the difference between fact and plan (I – 0).

Table 2: Divisible comparative coefficients for one factor

Designation of comparative coefficient	Coefficients calculation	Value	Coefficients product (value)
A_1	$F_{1(I)} / F_{1(0)}$	1,380184899	1,0
A_2	$F_{1(0)} / F_{1(I)}$	0,724540604	
A_3	$F_{2(I)} / F_{2(0)}$	0,878277947	1,0
A_4	$F_{2(0)} / F_{2(I)}$	1,138591723	
A_5	$F_{3(I)} / F_{3(0)}$	0,898399003	1,0
A_6	$F_{3(0)} / F_{3(I)}$	1,113091173	
A_7	$F_{4(I)} / F_{4(0)}$	1,095093409	1,0
A_8	$F_{4(0)} / F_{4(I)}$	0,913164112	
A_9	$F_{5(I)} / F_{5(0)}$	1,010072177	1,0
A_{10}	$F_{5(0)} / F_{5(I)}$	0,990028260	
A_{11}	$F_{6(I)} / F_{6(0)}$	1,264386220	1,0
A_{12}	$F_{6(0)} / F_{6(I)}$	0,790897579	
A_{13}	$F_{7(I)} / F_{7(0)}$	1,043708150	1,0
A_{14}	$F_{7(0)} / F_{7(I)}$	0,958122249	
A_{15}	$F_{8(I)} / F_{8(0)}$	0,830041597	1,0
A_{16}	$F_{8(0)} / F_{8(I)}$	1,204758899	
A_{17}	$F_{9(I)} / F_{9(0)}$	0,966605086	1,0
A_{18}	$F_{9(0)} / F_{9(I)}$	1,034548664	
A_{19}	$F_{10(I)} / F_{10(0)}$	1,030729313	1,0
A_{20}	$F_{10(0)} / F_{10(I)}$	0,970186825	
A_{21}	$F_{11(I)} / F_{11(0)}$	1,120111303	1,0
A_{22}	$F_{11(0)} / F_{11(I)}$	0,892768422	

The result on methods 1.1, 2.1, 3.1 is presented in Table 7, the result on methods 1.2, 2.2, 3.2 is presented in Table 8.

The purpose of the author's research was to develop new methods of factor deterministic analysis that would more fairly and reasonably evaluate its results, based on the suggested comparative coefficients.

According to the author's methods presented above, we shall calculate how the effect of change of factor characteristics (ECFC – the influence of adjustment factors) influences the change in net figures (Formula 6).

Table 3: Multiplicative comparative coefficients

Designation of comparative coefficient	Factor multipliers included into coefficient calculation	Value
B_1	A_1*A_3	1,212185959
B_2	$A_1*A_3*A_5$	1,089026657
B_3	$A_1*A_3*A_5*A_7$	1,192585914
B_4	$A_1*A_3*A_5*A_7*A_9$	1,204597851
B_5	$A_1*A_3*A_5*A_7*A_9*A_{11}$	1,523076923
B_6	$A_1*A_3*A_5*A_7*A_9*A_{11}*A_{13}$	1,589647797
B_7	$A_1*A_3*A_5*A_7*A_9*A_{11}*A_{13}*A_{15}$	1,319473795
B_8	$A_1*A_3*A_5*A_7*A_9*A_{11}*A_{13}*A_{15}*A_{17}$	1,275410082
B_9	$A_1*A_3*A_5*A_7*A_9*A_{11}*A_{13}*A_{15}*A_{17}*A_{19}$	1,314602557
B_{10}	$A_4*A_6*A_8*A_{10}*A_{12}*A_{14}*A_{16}*A_{18}*A_{20}*A_{22}$	0,937306479
B_{11}	$A_6*A_8*A_{10}*A_{12}*A_{14}*A_{16}*A_{18}*A_{20}*A_{22}$	0,823215609
B_{12}	$A_8*A_{10}*A_{12}*A_{14}*A_{16}*A_{18}*A_{20}*A_{22}$	0,739576083
B_{13}	$A_{10}*A_{12}*A_{14}*A_{16}*A_{18}*A_{20}*A_{22}$	0,809904893
B_{14}	$A_{12}*A_{14}*A_{16}*A_{18}*A_{20}*A_{22}$	0,818062399
B_{15}	$A_{14}*A_{16}*A_{18}*A_{20}*A_{22}$	1,034346824
B_{16}	$A_{16}*A_{18}*A_{20}*A_{22}$	1,079556210
B_{17}	$A_{18}*A_{20}*A_{22}$	0,896076560
B_{18}	$A_{20}*A_{22}$	0,866152161

Table 4: Methods 1.1 and 1.2 of alternative factor analysis using comparative coefficients

	Formulas / calculations	
Formula #	The main part of the formula	Correction coefficients
1.1	$\Delta Rf\ (F_1) = Rf_0*(A_1) - Rf_0$	–
1.2	$\Delta Rf\ (F_2) = (Rf_0*(A_3) - Rf_0)*$	A_1
1.3	$\Delta Rf\ (F_3) = (Rf_0*(A_5) - Rf_0)*$	$\hat{A}_1$
1.4	$\Delta Rf\ (F_4) = (Rf_0*(A_7) - Rf_0)*$	B_2
1.5	$\Delta Rf\ (F_5) = (Rf_0*(A_9) - Rf_0)*$	B_3
1.6	$\Delta Rf\ (F_6) = (Rf_0*(A_{11}) - Rf_0)*$	B_4
1.7	$\Delta Rf\ (F_7) = (Rf_0*(A_{13}) - Rf_0)*$	B_5
1.8	$\Delta Rf\ (F_8) = (Rf_0*(A_{15}) - Rf_0)*$	B_6
1.9	$\Delta Rf\ (F_9) = (Rf_0*(A_{17}) - Rf_0)*$	B_7
1.10	$\Delta Rf\ (F_{10}) = (Rf_0*(A_{19}) - Rf_0)*$	B_8
1.11	$\Delta Rf\ (F_{11}) = (Rf_0*(A_{21}) - Rf_0)*$	B_9
2.1	$\Delta Rf\ (F_1) = (Rf_1 - Rf_1*(A_2))*$	B_{10}
2.2	$\Delta Rf\ (F_2) = (Rf_1 - Rf_1*(A_4))*$	B_{11}
2.3	$\Delta Rf\ (F_3) = (Rf_1 - Rf_1*(A_6))*$	B_{12}
2.4	$\Delta Rf\ (F_4) = (Rf_1 - Rf_1*(A_8))*$	B_{13}
2.5	$\Delta Rf\ (F_5) = (Rf_1 - Rf_1*(A_{10}))*$	B_{14}
2.6	$\Delta Rf\ (F_6) = (Rf_1 - Rf_1*(A_{12}))*$	B_{15}
2.7	$\Delta Rf\ (F_7) = (Rf_1 - Rf_1*(A_{14}))*$	B_{16}
2.8	$\Delta Rf\ (F_8) = (Rf_1 - Rf_1*(A_{16}))*$	B_{17}
2.9	$\Delta Rf\ (F_9) = (Rf_1 - Rf_1*(A_{18}))*$	B_{18}
2.10	$\Delta Rf\ (F_{10}) = (Rf_1 - Rf_1*(A_{20}))*$	A_{22}
2.11	$\Delta Rf\ (F_{11}) = (Rf_1 - Rf_1*(A_{22}))$	–

Table 5: Methods 2.1 and 2.2 of alternative factor analysis using comparative coefficients

	Formulas / calculations	
Formula #	The main part of the formula	Correction coefficients
3.1	$\Delta Rf\ (F_1) = (\Delta F_1/F_{1\,0}) * Rf_0$	–
3.2	$\Delta Rf\ (F_2) = (\Delta F_2/F_{2\,0}) * Rf_0*$	A_1
3.3	$\Delta Rf\ (F_3) = (\Delta F_3/F_{3\,0}) * Rf_0*$	$\hat{A}_1$
3.4	$\Delta Rf\ (F_4) = (\Delta F_4/F_{4\,0}) * Rf_0*$	B_2
3.5	$\Delta Rf\ (F_5) = (\Delta F_5/F_{5\,0}) * Rf_0*$	B_3
3.6	$\Delta Rf\ (F_6) = (\Delta F_6/F_{6\,0}) * Rf_0*$	B_4
3.7	$\Delta Rf\ (F_7) = (\Delta F_7/F_{7\,0}) * Rf_0*$	B_5
3.8	$\Delta Rf\ (F_8) = (\Delta F_8/F_{8\,0}) * Rf_0*$	B_6
3.9	$\Delta Rf\ (F_9) = (\Delta F_9/F_{9\,0}) * Rf_0*$	B_7
3.10	$\Delta Rf\ (F_{10}) = (\Delta F_{10}/F_{10\,0}) * Rf_0*$	B_8
3.11	$\Delta Rf\ (F_{11}) = (\Delta F_{11}/F_{11\,0}) * Rf_0*$	B_9
4.1	$\Delta Rf\ (F_1) = (\Delta F_1/F_{1\,1}) * Rf_1*$	B_{10}
4.2	$\Delta Rf\ (F_2) = (\Delta F_2/F_{2\,1}) * Rf_1*$	B_{11}
4.3	$\Delta Rf\ (F_3) = (\Delta F_3/F_{3\,1}) * Rf_1*$	B_{12}
4.4	$\Delta Rf\ (F_4) = (\Delta F_4/F_{4\,1}) * Rf_1*$	B_{13}
4.5	$\Delta Rf\ (F_5) = (\Delta F_5/F_{5\,1}) * Rf_1*$	B_{14}
4.6	$\Delta Rf\ (F_6) = (\Delta F_6/F_{6\,1}) * Rf_1*$	B_{15}
4.7	$\Delta Rf\ (F_7) = (\Delta F_7/F_{7\,1}) * Rf_1*$	B_{16}
4.8	$\Delta Rf\ (F_8) = (\Delta F_8/F_{8\,1}) * Rf_1*$	B_{17}
4.9	$\Delta Rf\ (F_9) = (\Delta F_9/F_{9\,1}) * Rf_1*$	B_{18}
4.10	$\Delta Rf\ (F_{10}) = (\Delta F_{10}/F_{10\,1}) * Rf_1*$	A_{22}
4.11	$\Delta Rf\ (F_{11}) = (\Delta F_{11}/F_{11\,1}) * Rf_1$	–

$$\Delta rf\ (FKn) = \Delta Rf\ (FCOn) * (1 - Kn) \quad (6)$$

where: $\Delta Rf\ (FKn)$ – influence of the effect of changing of factor indicators (ECFI) on the change of the effective indicator; $\Delta Rf\ (FCOn)$ – influence of the corresponding factor on change the effective indicator according to the basic part of the author's method formula; K – correction coefficient; n – corresponding factor number.

ECFI on the author's methods is presented in Tables # 9, 10.

Verification formula of the correctness of ECFI calculation on the author's methods is presented in formula 7.

$$(\Delta Rf\ (FC) - \text{the main part of the formula}) + \Delta Rf\ (FKn) = 0 \quad (7)$$

Table 6: Methods 3.1 and 3.2 of alternative factor analysis using comparative coefficients

	Formulas / calculations	
Formula #	The main part of the formula	Correction coefficients
5.1	$\Delta Rf\ (F_1) = \Delta Rf - (Rf_1 - (Rf_0 * A_1)$	–
5.2	$\Delta Rf\ (F_2) = \Delta Rf - (Rf_1 - (Rf_0 * A_3))*$	A_1
5.3	$\Delta Rf\ (F_3) = \Delta Rf - (Rf_1 - (Rf_0 * A_5))*$	$\hat{A}_1$
5.4	$\Delta Rf\ (F_4) = \Delta Rf - (Rf_1 - (Rf_0 * A_7))*$	B_2
5.5	$\Delta Rf\ (F_5) = \Delta Rf - (Rf_1 - (Rf_0 * A_9))*$	B_3
5.6	$\Delta Rf\ (F_6) = \Delta Rf - (Rf_1 - (Rf_0 * A_{11}))*$	B_4
5.7	$\Delta Rf\ (F_7) = \Delta Rf - (Rf_1 - (Rf_0 * A_{13}))*$	B_5
5.8	$\Delta Rf\ (F_8) = \Delta Rf - (Rf_1 - (Rf_0 * A_{15}))*$	B_6
5.9	$\Delta Rf\ (F_9) = \Delta Rf - (Rf_1 - (Rf_0 * A_{17}))*$	B_7
5.10	$\Delta Rf\ (F_{10}) = \Delta Rf - (Rf_1 - (Rf_0 * A_{19}))*$	B_8
5.11	$\Delta Rf\ (F_{11}) = \Delta Rf - (Rf_1 - (Rf_0 * A_{21}))*$	B_9
6.1	$\Delta Rf\ (F_1) = \Delta Rf - ((Rf_1 * A_2) - Rf_0)*$	B_{10}
6.2	$\Delta Rf\ (F_2) = \Delta Rf - ((Rf_1 * A_4) - Rf_0)*$	B_{11}
6.3	$\Delta Rf\ (F_3) = \Delta Rf - ((Rf_1 * A_6) - Rf_0)*$	B_{12}
6.4	$\Delta Rf\ (F_4) = \Delta Rf - ((Rf_1 * A_8) - Rf_0)*$	B_{13}
6.5	$\Delta Rf\ (F_5) = \Delta Rf - ((Rf_1 * A_{10}) - Rf_0)*$	B_{14}
6.6	$\Delta Rf\ (F_6) = \Delta Rf - ((Rf_1 * A_{12}) - Rf_0)*$	B_{15}
6.7	$\Delta Rf\ (F_7) = \Delta Rf - ((Rf_1 * A_{14}) - Rf_0)*$	B_{16}
6.8	$\Delta Rf\ (F_8) = \Delta Rf - ((Rf_1 * A_{16}) - Rf_0)*$	B_{17}
6.9	$\Delta Rf\ (F_9) = \Delta Rf - ((Rf_1 * A_{18}) - Rf_0)*$	B_{18}
6.10	$\Delta Rf\ (F_{10}) = \Delta Rf - ((Rf_1 * A_{20}) - Rf_0)*$	A_{22}
6.11	$\Delta Rf\ (F_{11}) = \Delta Rf - ((Rf_1 * A_{22}) - Rf_0)$	–

Table 7: The result on methods 1.1, 2.1, 3.1

p/p	The main part of the formula	Correction coefficients		The result
1	$\Delta Rf\ (F_1) = 0{,}084485533$	–		0,084485533
2	$\Delta Rf\ (F_2) = -0{,}027049345$	1,380184899	A_1	-0,037333098
3	$\Delta Rf\ (F_3) = -0{,}022577999$	1,212185959	B_1	-0,027368734
4	$\Delta Rf\ (F_4) = 0{,}021131869$	1,089026657	B_2	0,023013168
5	$\Delta Rf\ (F_5) = 0{,}002238262$	1,192585914	B_3	0,002669319
6	$\Delta Rf\ (F_6) = 0{,}058752493$	1,204597851	B_4	0,070773127
7	$\Delta Rf\ (F_7) = 0{,}009712922$	1,523076923	B_5	0,014793528
8	$\Delta Rf\ (F_8) = -0{,}037768534$	1,589647797	B_6	-0,060038667
9	$\Delta Rf\ (F_9) = -0{,}007421092$	1,319473795	B_7	-0,009791936
10	$\Delta Rf\ (F_{10}) = 0{,}006828736$	1,275410082	B_8	0,008709439
11	$\Delta Rf\ (F_{11}) = 0{,}026691401$	1,314602557	B_9	0,035088584
	0,115024245			0,105000263

Table 8. The result on methods 1.2, 2.2, 3.2

p/p	The main part of the formula	Correction coefficients		The result
1	$\Delta Rf\ (F_1) = 0{,}090136508$	0,937306479	B_{10}	0,084485533
2	$\Delta Rf\ (F_2) = -0{,}045350328$	0,823215609	B_{11}	-0,037333098
3	$\Delta Rf\ (F_3) = -0{,}037005975$	0,739576083	B_{12}	-0,027368734
4	$\Delta Rf\ (F_4) = 0{,}028414655$	0,809904893	B_{13}	0,023013168
5	$\Delta Rf\ (F_5) = 0{,}003262978$	0,818062399	B_{14}	0,002669319
6	$\Delta Rf\ (F_6) = 0{,}068423014$	1,034346824	B_{15}	0,070773127
7	$\Delta Rf\ (F_7) = 0{,}013703342$	1,079556210	B_{16}	0,014793528
8	$\Delta Rf\ (F_8) = -0{,}067001716$	0,896076560	B_{17}	-0,060038667
9	$\Delta Rf\ (F_9) = -0{,}011305100$	0,866152161	B_{18}	-0,009791936
10	$\Delta Rf\ (F_{10}) = 0{,}009755541$	0,892768422	A_{22}	0,008709439
11	$\Delta Rf\ (F_{11}) = 0{,}035088584$	–		0,035088584
	0,088121503			0,105000263

Table 9: ECFI on methods 1.1, 2.1, 3.1

	Formulas / calculations		
Indicator	ΔRf (FCOn) table 7	(1 – Kn)	The result
$\Delta Rf\ (FK_1)$			0,000
$\Delta Rf\ (FK_2)$	-0,027049345	-0,380184899	0,010283752
$\Delta Rf\ (FK_3)$	-0,022577999	-0,212185959	0,004790734
$\Delta Rf\ (FK_4)$	0,021131869	-0,089026657	-0,001881300
$\Delta Rf\ (FK_5)$	0,002238262	-0,192585914	-0,000431058
$\Delta Rf\ (FK_6)$	0,058752493	-0,204597851	-0,012020634
$\Delta Rf\ (FK_7)$	0,009712922	-0,523076923	-0,005080605
$\Delta Rf\ (FK_8)$	-0,037768534	-0,589647797	0,022270133
$\Delta Rf\ (FK_9)$	-0,007421092	-0,319473795	0,002370844
$\Delta Rf\ (FK_{10})$	0,006828736	-0,275410082	-0,001880703
$\Delta Rf\ (FK_{11})$	0,026691401	-0,314602557	-0,008397183
			0,010023982

Table 10: ECFI on methods 1.2, 2.2, 3.2

	Formulas / calculations		
Indicator	ΔRf (FCOn) table 8	(1 – Kn)	The result
$\Delta Rf\ (FK_1)$	0,090136508	0,062693521	0,005650975
$\Delta Rf\ (FK_2)$	-0,045350328	0,176784391	-0,008017230
$\Delta Rf\ (FK_3)$	-0,037005975	0,260423917	-0,009637241
$\Delta Rf\ (FK_4)$	0,028414655	0,190095107	0,005401487
$\Delta Rf\ (FK_5)$	0,003262978	0,181937601	0,000593658
$\Delta Rf\ (FK_6)$	0,068423014	-0,034346824	-0,002350113
$\Delta Rf\ (FK_7)$	0,013703342	-0,079556210	-0,001090186
$\Delta Rf\ (FK_8)$	-0,067001716	0,103923440	-0,006963049
$\Delta Rf\ (FK_9)$	-0,011305100	0,133847839	-0,001513163
$\Delta Rf\ (FK_{10})$	0,009755541	0,107231578	0,001046102
$\Delta Rf\ (FK_{11})$			0,000
			-0,016878760

On methods 1.1, 2.1, 3.1 the result is obtained:
(0,105000263 – 0,115024245) + (0,010023982) = 0
–0,010023982 + 0,010023982 = 0
On methods 1.2, 2.2, 3.2 the result is obtained:
(0,105000263 – 0,088121503) + (–0,016878760) = 0
0,016878760 – 0,016878760 = 0

11-fold factor Filatov model consists of functionally-interdependent factors. This interrelation is the author's personal contribution that widens the existing field of knowledge about the subject of research, adds new coefficients, specifies the existing phenomenon, discovers new regular patterns and therefore develops scientific ideas about the world.

The more detailed the research of the dependence between net figures and various factors is, the more accurate the results of the analysis and the performance evaluation of commercial organizations are. Without the detailed and comprehensive study of factors it is impossible to draw valid conclusions about the performance results, find the reserves and substantiate various plans and managerial decisions.

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