неповторюваність процесу змін, модель розвитку будь-якого об'єкта може мати вигляд лише потоку.

Механізми розвитку підприємства у вигляду набору методів, функцій, принципів, потоків і елементів, по-перше, не взаємопов'язують ці складові у цілісне явище, а, по-друге, більше відповідають поняттю «методика», оскільки методика виконання процесу відображається за допомогою алгоритму – послідовності конкретних прийомів і умов перетворення вхідних даних у певний результат й акцентує увагу на практичному аспекті (технології реалізації).

Таким чином, така властивість розвитку підприємства як незворотність, що обумовлює принципову неповторювальність змін, заперечує сенс формулювання поняття «механізм розвитку підприємства», оскільки механізм відображає спосіб функціонування явища як цілісності, що, навпаки, передбачає повторювальність.

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CALCULATIONS ON THE EFFECT
OF OPERATIONAL SURPLUS FUND CREATION AND IMPLEMENTATION

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In order to increase the economic effectiveness of firms' operational activity, creation and implementation of the operational surplus fund is being set forward. This fund is

replenished through a firm's net operational profit either once-only or through accumulation and is augmented in every operational period within calculated limits. Calculations of operational surplus fund amount depend both on the expenses of a previous period and on the amount of a firm's net profit.

Taking into consideration the results of earlier investigations, one may conclude that the problem of shortage of means within an industrial period used to be solved through investment of a certain sum (target balance of cash means) on the settlement account. However, this sum might fail to cover the expenses of a certain period i. Such an issue can be solved through creation of the operational surplus fund whose amount is flexible, calculated for the i-period and based on the data of a previous period i-1 [2].

Operational surplus fund creation and implementation effect may be evaluated due to the results of a firm's activity over specified periods. The question is whether the calculated net profit and relative profitability indices would be the indices of effect and effectiveness of operational surplus fund implementation? Perhaps, the investigation into the cash flow amount changes, induced by operational cash flow corrections on recovery amount of operational surplus fund, would give bright evidence to the effect of a firm's operational surplus fund implementation. The present article puts forward mathematical calculations on the effect of operational surplus fund creation and implementation.

A cash flow balance that is positive on each step of calculations or on the majority of these steps appears to be the necessary condition for creation of a firm's operational surplus fund ORF: $DP_i > 0$, $(\Sigma DP_i > 0)$ $i \in [1,n]$ [2, p. 42]. Authors suggest to calculate the operational surplus fund amount in the following way [2, p. 44]: $ORF_i = 2 * \delta_i * Z_{i-1}$, where Zi-1 is the expenses of a period i-1.

$1 + z_i = e^{\delta}$, where δ_i is the ratio, computed according to the tables of exponential function values. Than the operational surplus fund mathematical model goes like this:

$$\begin{cases} ORF_i = 2 * \delta_i Z_{i-1} \\ \sum_{i=1}^{n} DP_i > 0 \end{cases}$$

Let us illustrate the operational surplus fund creation with a definite example [3]. A firm's initial operational surplus fund was formed at the rate of 100 thousand hryvnias. Initial surplus fund correction is held at the end of a year-long period. Inflation rate is 5 % per month. The rest of cash means on the account at the beginnings of month corresponds to a sum of 10 thousand hryvnias. This amount is insufficient for troubleproof functioning of the firm. That is why the administration decided to maintain a target rest of cash means at the rate of 18 thousand hryvnias. Its amount should increase in proportion to the rate of inflation throughout the next periods. During the third industrial period the firm purchases equipment to the sum of 25 thousand hryvnias at the expense of the costs that secure an operational period under consideration. The *Table 1* represents values of revenue D_i, expenses Z_i and net retained profit PN_i, as well as calculated amount of operational surplus fund ORF_i. The operational surplus fund amount of a next period ORF_{i+1} is calculated on the basis of the data due to the i-period. For every operational period there are values of the ratio δ_i, computed

according to the exponential function tables. At the same time, the table demonstrates the sums for recovery of exploited cash means and for achievement of the operational surplus fund rate ΔORF_i, calculated for the oncoming period.

Analyzing the above-mentioned case, one may see that the mathematical series, describing a firm's profit PN_i, does not reflect the effect of creation and implementation of a firm's operational surplus fund. It does not even reflect the fact that during the third month the firm has purchased equipment to the sum of 25 thousand hryvnias owing to the operational expenses.

Inherent effectiveness of a firm's activity might also be evaluated with the help of a system of relative indices. The most complete characteristics of financial activity effectiveness are provided by a set of profitability ratios, i. e. correlation between effect and expenses indices [5]. Thus, output sales profitability ratio *ROS* describes profitability of a firm's operational activity:

$$ROS_i = \frac{PN_i}{D_i}$$

PN_i – sum of the net profit, gained through a firm's operational activity during the period of i;

D_i – output sales volume for the period of i.

Current expenses profitability ratio *ROCC* describes the profit rate per a unit of expenses in the course of carrying out a firm's operational activity:

$$ROCC_i = \frac{PN_i}{Z_i}$$

PN_i – sum of the net profit, gained through a firm's operational activity during the period of i;

Z_i – sum of a firm's operational expenses in the period of i.

The calculated ratios *ROS* and *ROCC* are shown in the Table 1. However, *ROS* and *ROCC* ratios do not reflect the fact of equipment purchase in the third month along with temporary loss of solvency and liquidity. Moreover, these ratios obviously fail to describe the effects of operational surplus fund creation and implementation.

That is why the effect of operational surplus fund creation and implementation is suggested to be calculated subtracting the amount of total operational surplus fund recovery from the amount of total net cash flow, both taken within calculated limits. This difference has to be positive for a firm to keep functioning successfully and being financially secure. I.e.:

$$\sum_{i=1}^{n} DP_i - \sum_{i=1}^{n} \Delta ORF_i > 0 \; ; \; \sum_{i=1}^{n} DP_i - \sum_{i=1}^{n} \Delta ORF_i = 24.600 - 13.19 = 11.41$$

Table 1

Ratios of a firm's operational activity and relative indices of operational activity effectiveness

1	*Period*	*1*	*2*	*3*	*4*	*5*	*6*	*Sum*
2	**Revenue D_i**	136,300	148,000	160,800	174,800	189,900	206,400	
4	**Expenses Z_i**	118,500	128,800	139,900	152,100	165,200	179,600	
5	**Equipment Purchase**	-	-	25.000	-	-	-	
6	**δ_i**	0,080	0,090	0,090	0,090	0,090	0,090	
7	**$ORF_{i+1}=2\delta Z_i$**	**17,500**	**18,960**	**23,184**	**25,180**	**27,378**	**29,730**	
8	**PN_i**	17,800	19,200	20,900	22,700	24,700	26,800	
9	**DP_i (Cash Flow Balance)**	6,900	7,200	-17,100	8,400	9,300	9,900	ΣDP_i =**24.600**
10	**ΔORF_i (Surplus Fund Recovery)**	**2,360**	**-3,740**	**17,020**	**7,400**	**-0,610**	**-9,240**	$\Sigma\Delta$ **ORF_i** =**13.190**
11	**ROS_i**	0.130	0.129	0.129	0.129	0.130	0.140	
12	**$ROCC_i$**	0.150	0.149	0.149	0.149	0.149	0.149	

Therefore, in the case under consideration operational surplus fund creation should be considered effective and helping to boost the firm's liquidity, solvency and financial security as well as to raise its market value.

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