Секція 4. Теоретичні й прикладні аспекти розвитку економічної теорії та її інноваційно-інвестиційний потенціал в сферах техніки, технології, технічного регулювання і забезпечення якості.

POSSIBILITIES OF USING UKRAINIAN COMPANIES' OPEN FINANCIAL STATEMENTS IN THE PROFITABILITY ANALYZING OF CASH FLOWS

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Ukrainian financial statements provide an opportunity to analyze the company's financial results on the basis of two documents: 1) the Statement of Financial Performance (Statement of Comprehensive Income); 2) Cash Flow Statement.

Cash flow information is more transparent, easier to control, less affected by accounting policies, and more clearly shows whether a company generates real money. Therefore, it is obvious that when assessing the profitability, along with the other profitability ratios, it is also necessary to take into account return on cash flow ratios.

Traditionally, in financial analysis, Ukrainian researchers use a system of cash flow profitability ratios, which is presented, in particular, by I. Spilnik and O.Zagorodnaya (2017). Among the most frequently used cash flow profitability ratios are indicated: 1) Return on Positive Cash Flow; 2) Return on Net Cash Flow; 3) Return on Average Cash Balance; 4) Return on Net Operating Cash Flow; 5) Return on Net Investment Cash Flow; 6) Return on Net Financial Cash Flow. In the numerator of all these indicators (except for Return on Net Operating Cash Flow), I. Spilnik and O. Zagorodnaya (2017) proposed to take into account the Net Profit [1]. Unlike I. Spilnik and O. Zagorodnaya (2017) we consider more informative

calculating return on operating, investment and financial cash flows by net cash flow, but not positive cash flow. Table 1 presents the methodology for calculating these profitability indicators for Ukrainian companies' open financial statements.

Table 1 – The system of cash flow profitability ratios that can be calculated from the Ukrainian companies' open financial statements

Coefficient name	Formula	Calculation from Ukrainian companies' open financial statements
Return on Positive Cash Flow (*ROPCF*)	$ROPCF = \frac{NP}{TPCF}$, where *NP* – Net Profit; *TPCF* – Total Positive Cash Flow.	$\frac{code\ at\ line\ 2350\ (or\ code\ at\ line\ 2355)}{\left(\begin{array}{c}(code\ at\ line\ 3000 + code\ at\ line\ 3005 + code\ at\ line\ 3006 + \\ + code\ at\ line\ 3010 + code\ at\ line\ 3095) \\ + \\ (code\ at\ line\ 3200 + code\ at\ line\ 3205 + code\ at\ line\ 3215 + \\ + code\ at\ line\ 3220 + code\ at\ line\ 3225 + code\ at\ line\ 3250) \\ + \\ (code\ at\ line\ 3300 + code\ at\ line\ 3305 + code\ at\ line\ 3340)\end{array}\right)}$
Return on Net Cash Flow (*RONCF*)	$RONCF = \frac{NP}{NCF}$, where *NCF* – Total Net Cash Flow.	$\frac{code\ at\ line\ 2350\ (or\ code\ at\ line\ 2355)}{code\ at\ line\ 3400}$
Return on Average Cash Balance (*ROACB*)	$ROACB = \frac{NP}{ACB}$, where *ACB* –Average Cash Balance.	$\frac{code\ at\ line\ 2350\ (or\ code\ at\ line\ 2355)}{\frac{1}{2}(code\ at\ line\ 3405 + code\ at\ line\ 3415)}$
Return on Net Operating Cash Flow (*RONOCF*)	$RONOCF = \frac{OP}{NOCF}$, where *OP* –Operating Profit; *NOCF* –Net Operating Cash Flow.	$\frac{code\ at\ line\ 2190\ (or\ code\ at\ line\ 2195)}{code\ at\ line\ 3195}$
Return on Net Investment Cash Flow (*RONICF*)	$RONICF = \frac{NP}{NICF}$, where *NICF* – Net Investment Cash Flow.	$\frac{code\ at\ line\ 2350\ (or\ code\ at\ line\ 2355)}{code\ at\ line\ 3295}$
Return on Net Financial Cash Flow (*RONFCF*)	$RONFCF = \frac{NP}{NFCF}$, where *NFCF* – Positive Financial Cash Flow.	$\frac{code\ at\ line\ 2350\ (or\ code\ at\ line\ 2355)}{code\ at\ line\ 3395}$

Unfortunately, when calculating the RONICF and RONFCF ratios according to the methodology presented in Table 1, the principle of matching profit and cash flow is not observed. So, in the numerator of the coefficient RONICF is net profit, and in the denominator – the net cash flow from investment activities. But net profit is generated not only by investment activities, but also by the operating and financial activities. Therefore, it would be more correct in the numerator of the RONICF formula to take into account only the net profit from investment activities. But the open financial statements of Ukrainian companies do not provide such information. The situation is similar with the ROFCF calculation method.

The general conceptual formula for cash flow profitability metrics, which are presented in Table 1, can be expressed as follows:

$$Return\ \ on\ Cash\ Flow = \frac{Profit}{Cash\ Flow}, \text{ де} \quad (1)$$

According to A. Abdul Rahman (2017), «profitability refers to the company's ability to generate profits as a return on the funds invested» [2]. Thus, the generally accepted concept of the profitability metrics suggests that in the numerator we indicate the results of the company, and in the denominator – the resources and (or) costs through which these results were generated.

Debatable is the question of whether it is possible to interpret cash flows as resources or as results of the company. If we consider cash flows as a dynamic form of a company's cash resources, the conceptual formula for cash flow profitability (1) is relevant. However, there is another approach, which involves looking at cash flows as the result of the company. Then in the formula of profitability cash flows should be indicated in the numerator, and in the denominator – resources or costs. The general conceptual formula for such metrics of cash flow profitability can be expressed as follows:

$$Cash\ Flow\ \ Return\ \ on\ Resources\ \ (or\ Costs) = \frac{Cash\ Flow}{Resources\ \ (or\ Costs)} \quad (2)$$

It is on this principle that the Cash Flow Return on Investment (*CFROI*) formula is designed. This is one of the most frequently used financial analysis formula in international practice. It was developed by HOLT Value Associates and, as B. J. Madden (1999) points out, is an important tool for assessing the economic value of a firm, its shareholder value [3]. The metric shows the ability of a company to generate cash flows per unit of capital employed.

The Ukrainian companies' open financial statements makes it possible to calculate this indicator in a simplified adapted form as follows:

$$CFROI = \frac{Net\ \ Operating\ \ \ Cash\ Flow}{Capital\ \ \ Employed} \quad (3)$$

or

$$CFROI = \frac{Net\ \ Operating\ \ \ Cash\ Flow}{Equity + Non\ \ Current\ \ Liabilities} \quad (4)$$

A possible formula for calculating the *CFROI* for the Ukrainian companies' financial statements is:

$$CFROI = \frac{code\ \ at\ \ line\ \ 3195}{code\ \ at\ \ line\ \ 1495 + code\ \ at\ \ line\ \ 1595} \quad (5)$$

Forming profitability metrics that show the company's ability to generate cash flows per unit of revenue, assets, equity, investments, we get an analogue of the classic profitability ratios *NPM*, *ROA*, *ROE*, *ROI* (Table 2).

Table 2 - Basic formulas for the profitability of revenues, assets, equity and investments based on profit and cash flow

Profitability by Profit	Profitability by Cash Flow
Gross Profit Margin [4; 5]: $GPM = \frac{Gross\ Profit}{Revenue} = \frac{code\ at\ line\ 2090\ (or\ code\ at\ line\ 2095)}{code\ at\ line\ 2000}$	Positive Cash Flow Margin: $PCFM = \frac{Positive\ Cash\ Flow}{Revenue} = \frac{\left(\begin{array}{c}(code\ at\ line\ 3000 + code\ at\ line\ 3005 + code\ at\ line\ 3006 + \\ + code\ at\ line\ 3010 + code\ at\ line\ 3095) \\ + \\ (code\ at\ line\ 3200 + code\ at\ line\ 3205 + code\ at\ line\ 3215 + \\ + code\ at\ line\ 3220 + code\ at\ line\ 3225 + code\ at\ line\ 3250) \\ + \\ (code\ at\ line\ 3300 + code\ at\ line\ 3305 + code\ at\ line\ 3340)\end{array}\right)}{code\ at\ line\ 2000}$
Net Profit Margin [4; 5]: $NPM = \frac{Net\ Profit}{Revenue} = \frac{code\ at\ line\ (or\ code\ at\ line\ 2355)}{code\ at\ line\ 2000}$	Net Cash Flow Margin $NCFM = \frac{Net\ Cash\ Flow}{Revenue} = \frac{code\ at\ line\ 3400}{code\ at\ line\ 2000}$
Return on Assets [6; 7]: $ROA = \frac{Net\ Profit}{Total\ Assets} = \frac{code\ at\ line\ 2350\ (or\ code\ at\ line\ 2355)}{code\ at\ line\ 1300}$	Cash Flow Return on Assets: $CFROA = \frac{Net\ Cash\ Flow}{Total\ Assets} = \frac{code\ at\ line\ 3400}{code\ at\ line\ 1300}$
Return on Equity [8; 9]: $ROE = \frac{Net\ Profit}{Equity} = \frac{code\ at\ line\ 2350\ (or\ code\ at\ line\ 2355)}{code\ at\ line\ 1495}$	Cash Flow Return on Equity: $CFROE = \frac{Net\ Cash\ Flow}{Equity} = \frac{code\ at\ line\ 3400}{code\ at\ line\ 1495}$
Return on Investment [10]: $ROI = \frac{Net\ Profit}{Capital\ Employed} = \frac{code\ at\ line\ 2350\ (or\ code\ at\ line\ 2355)}{code\ at\ line\ 1495 + code\ at\ line\ 1595}$	Cash Flow Return on Investment: $CFROI = \frac{Net\ Cash\ Flow}{Capital\ Employed} = \frac{code\ at\ line\ 3400}{code\ at\ line\ 1495 + code\ at\ line\ 1595}$

So, as we can see, the Ukrainian companies' financial statements contain information that allows to calculate a number of cash flow profitability metrics. There are various approaches to the design of cash flow profitability metrics: some of them interpret cash flow as a dynamic form of company's monetary resources, and others – as a result of financial activity. Cash flow profitability metrics are less susceptible to distortion than traditional profitability metrics calculated by profit. Unfortunately, the statistical reports of the Ukraine State Statistics Service do not contain information about the cash flows of the Ukrainian business entities, so there is no possibility to compare the obtained values with industry average indicators. This makes it difficult

to carry out comparative analytical work when using metrics of cash flow profitability.

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