

EVALUATION OF THE EFFECTIVENESS OF THE FINANCIAL LIQUIDITY STRATEGY IN THE FOOD ECONOMY ENTERPRISES

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Abstract. The paper presents results of analysis of strategies of liquidity in two food companies. There were used for this purpose two methods – ratio analysis and calculation of the residual profit. The study refers to five-year period 2005–2009. Analyzed companies differed because of two different liquidity strategies. Calculated residual profit of both companies was positive, what proves that their liquidity management strategies enhance the value of these companies.

Key words: liquidity, effectiveness, residual profit

INTRODUCTION

Financial liquidity means the ability of an enterprise to achieve money flows which enable the payment of the exacting liabilities and the coverage of the unexpected cash expenditures [Wędzki 2003]. Each manager of a firm functioning in the market economy should know that one of the most important task of the firm is a maintenance of the financial liquidity. This frequently decides about the firm destiny. The experiences of the entirely developed market economies indicate that the main cause of bankruptcies is not the bearing of losses but the deprivation of financial liquidity [Czekaj, Dresler 2002]. The type of the applied strategy of the financial liquidity influences an increase and/or a decrease of the enterprise value both in a short and a long period. The ascertainment of its effectiveness should be an important task of the financial manager of each enterprise. The flow of time, and more precisely the change of the existing economical conditions within and around the enterprise makes the financial strategy applied by the firm management becomes less effective in the accomplishment of its aims. This causes the necessity of

the evaluation to what degree the strategy has become obsolete and what correction it demands [Wędzki 2003].

This work aims at the analysis of the strategy of financial liquidity and attempts to evaluate its effectiveness on the basis of two enterprises of food economy. The goal was accomplished with the use of both less laborious methods and decidedly more complex ones.

DATA SOURCES AND METHODOLOGY

The source data derived from the balances, accounts of incomes and losses, as well as the additional information from the companies, the organizational-legal form of which is the joint stock company. The analysis comprised two meat-processing enterprises: Duda Co. and Indykpol Co., in the period between 2005–2009.

The analysis of the effectiveness of the strategy of financial liquidity can be performed by two methods of a various degree of complexity. The simpler methods, easier in practice, are also less expensive, however they do not secure an entire information about what ceased to be effective in the adopted strategy. More developed methods supply such information, yet they are more laborious [Wędzki 2003].

The work uses two methods, i.e. the index analysis and the calculation of the residual income.

The method of the analysis of financial liquidity comprised the analysis of the following indexes: current ratio, quick ratio, cash conversion cycle. The last one consists of several auxiliary indexes creating one measure according to the formula [Wędzki 2003]:

$$\text{Cash conversion cycle} = \text{reserves cycle} + \text{amount due cycle} - \text{current liabilities cycle}.$$

The analysis was deepened by the index of the net liquid balance due to the formula:

$$\text{Index of net liquid balance} = \frac{\text{short term investments} - \text{credits and loans} - \text{other liabilities claim to debt securities}}{\text{assets}}$$

The index analysis is not sufficient for the detailed evaluation of the effectiveness of the financial strategy, therefore necessary is the calculation of the residual income which may be achieved by the enterprise applying the given strategy of the financial liquidity. The simplified formula of the residual income has the form [Wędzki 2003]:

$$RI = [ZS \times (1 - Tx) + A] - WACC \times (AOP + OKN) \geq 0,$$

where:

- RI* – residual income at the end of year,
- ZS* – income from sale achieved due to given strategy,
- Tx* – rate of income tax,
- A* – yearly amortization,
- WACC* – yearly rate of weighted average cost of capital,
- AOP* – operational assets at the end of year,
- OKN* – operational working capital at the end of year.

The weighted average cost of the capital is the sum of the way of the weighted financing of its share in the liabilities of the enterprise [Wędzki 2003]:

$$WACC = k_E \times u_E + k_d \times u_d,$$

where:

k_E – cost of own capital,

u_E – share of own capital in liabilities of the enterprise,

k_d – cost of borrowed capital,

u_d – share of borrowed capital in liabilities.

The cost of own capital was estimated with the CAPM method due to the formula [Dynus, Kołosowska, Prewysz-Kwinto 2002]:

$$R = R_f + \beta \times (R_m - R_f),$$

where:

R_f – rate of return of the free-risk investment,

R_m – rate of return from the market assets,

$(R_m - R_f)$ – average bonus for risk,

β – beta index for own capital of given enterprise.

The rate of the risk-free return was estimated on the basis of the average rate of profitability of 52 week treasury bonds. The beta index was calculated according to the formula [Mayo 1997]:

$$\beta = \frac{\sum_{i=1}^n (R_{it} - R_i)(R_{mt} - R_m)}{\sum_{i=1}^n (R_{mt} - R_m)^2},$$

where:

n – number of periods supplying information,

R_{it} – rate of return of i -stock in t -period,

R_{mt} – rate of return of market index in t -period,

R_i – arithmetic average of return rates of i -stock,

R_m – arithmetic average of return rates of market index.

The beta coefficient expresses the relation between the change of the stock price of a given firm and the change of the value of main stock index. If the index $\beta > 1$, it means that the stock price of a given company increases (decreases) faster than the increase (decrease) of the stock index and henceforth the stocks are encumbered with a higher risk than the average risk on the stock market. If the index $\beta < 1$, than the change of the stock price of a given company is weaker than the change of the stock index, and therefore the risk is lower. The third, i.e. utmost case, occurs when $\beta = 1$. In such situation the stock price of a given firm changes at the same rate as the stock index, and the investment risk in the stocks of that firm equals the average risk occurring on the stock market [Dynus, Kołosowska, Prewysz-Kwinto 2002].

RESULTS

The evaluation of the effectiveness of the strategy of financial liquidity in the studied companies was begun with the analysis of the ratio indexes: current and quick (Table 1). In Duda Co. in 2005 PLN 2,10 of working assets fell on PLN 1 of short-term liabilities. A similar situation occurred in 2006. However the index of current ratio was decreasing in the following years to achieve the level 0,47 in 2009. This denotes that the company has had problems with paying current liabilities in the recent period. This is also confirmed by the calculated index of quick liquidity.

Table 1. Indexes of liquidity and turnover of Duda Co. and Indykpol Co. in 2005–2009
Tabela 1. Wskaźniki płynności i obrotowości spółek: Duda oraz Indykpol w latach 2005–2009

Specification	Years				
	2005	2006	2007	2008	2009
Duda Co.					
Current ratio (multiple)	2,10	2,17	1,04	0,72	0,47
Quick ratio (multiple)	1,64	1,76	0,87	0,65	0,41
Cycle of resources (days)	31,02	32,33	26,04	16,33	8,17
Cycle of amount due (days)	60,45	68,87	95,25	105,36	31,42
Cycle of current liabilities (days)	26,30	30,36	71,38	107,53	13,62
Cycle of cash conversion (days)	65,17	70,84	49,91	14,16	25,97
Rate of net liquid balance	-0,03	-0,01	-0,13	-0,19	-0,34
Indykpol Co.					
Current ratio (multiple)	2,35	1,39	1,71	1,43	1,16
Quick ratio (multiple)	2,05	1,25	1,41	1,09	0,76
Cycle of resources (days)	9,30	7,91	12,94	20,62	27,22
Cycle of amount due (days)	34,26	41,82	37,92	41,39	46,98
Cycle of current liabilities (days)	31,24	36,46	37,35	52,55	38,15
Cycle of cash conversion (days)	12,32	13,27	13,51	9,46	36,06
Rate of net liquid balance	-0,19	-0,19	-0,14	-0,20	-0,28

Source: Author's own on the data from the companies.

Źródło: Opracowanie własne na podstawie danych spółek.

The index of the current ratio in Indykpol Co. also indicated the decreasing tendency in the analyzed period, however in 2009, PLN 1,16 of working assets fell on PLN 1 of current liabilities. Solely in 2009 this company was not able to pay its claimed liabilities (quick ratio below 1).

The indexes of the resources turnover, the amounts due and the current liabilities were calculated in order to denote the cycle of cash conversion in the analyzed companies (Table 1). The cycle fluctuated in Duda Co. in the analyzed period. The longest one, equaling 71 days, was noted in 2006, whereas the shortest one, i.e. 15 days, occurred in 2008. This means that the time span between the moment of the cash expenditure on raw and other

materials and the sale, therefore the achievement of the amounts due equaled merely two weeks. The longest cycle of cash conversion in Indykpol Co. equaled 37 days (in 2009), i.e. slightly over a month.

On the basis of the calculated indexes and the data included in the Table 2, it can be stated that the shortening of the cycle of cash conversion in Duda Co. in the analyzed period indicates an increase of the conservative tendencies in the strategy of financial liquidity in the firm. On the other hand, the aggressive-conservative strategy in Indykpol Co. slightly moves in the direction of the aggressive one.

Table 2. Cycle of cash conversion

Tabela 2. Cykl konwersji gotówki

Cycle	Type of strategy			
	Conservative	Aggressive	Aggressive- -conservative	Conservative- -aggressive
Cycle of resources	long	short	short	long
Cycle of amounts due	short	long	long	short
Cycle of current liabilities	long	short	long	short
Cycle of cash conversion	short	long	relatively long and/or short	relatively long and/or short

Source: Wędzki D.: Strategie płynności finansowej przedsiębiorstwa. Oficyna Ekonomiczna Kraków 2003, s. 273.

Źródło: Wędzki D.: Strategie płynności finansowej przedsiębiorstwa. Oficyna Ekonomiczna Kraków 2003, s. 273.

The index of the net liquid balance informs how the surplus of the most liquid assets relates to the non-operational sources of its financing as the share of the assets [Wędzki 2003]. In both analyzed companies in the entire period, the index of the net liquid balance was negative what means that the cash and its equivalents do not ensure payments of the claimed operational liabilities. Therefore the threat of losing the financial liquidity in those firms increases.

The considered strategy of the financial liquidity is acceptable for the enterprise (i.e. profitable, or loss-free at least), if the residual income is not negative [Wędzki 2003]. The residual income was estimated solely for the last analyzed year, i.e. 2009. All the data and the partial calculations are included in Table 3.

Had the estimations on the formulas presented in the above description of the method been applied it was assumed that the cost of the own capital of Duda Co. equals 3,1%, whereas that of Indykpol Co. amounts to 6,1%. The average weighed cost of the capital of the analyzed companies was then estimated to amount 5% (Duda Co.) and 6,6% (Indykpol Co.), respectively.

That enabled the assumption of the value of the residual income for the particular companies, which amount to PLN 39678700 for Duda Co., and PLN 1591800 for Indykpol Co. The residual income for both companies was not negative, and therefore the strategies of financial liquidity applied by those enterprises can be stated as proper.

Table 3. Stages of residual income estimation for Duda Co. and Indykpol Co. in 2009

Tabela 3. Etapy ustalenia zysku rezydualnego dla spółek Duda oraz Indykpol w 2009 roku

Specification	Duda Co.	Indykpol Co.
Beta index for the own capital of given firm β	0,52	0,48
R_f (average rate of profitability of 52-week treasury bonds in 2009)	4,654%	4,654%
R_m (average rate of turnover from food market in 2009)	1,665%	1,665%
Cost of own capital $R = k_E$	3,1%	6,1%
Share of own capital in liabilities u_E	50,7%	42,4%
Cost of borrowed capital k_d (average WIBOR 3m in 2009 +2,5)	6,91%	6,91%
Share of borrowed capital in liabilities of the firm u_d	49,3%	57,6%
Weighed average cost of capital WACC	4,98%	6,57%
Income from sale (thousands PLN) ZS	35908	19387
Rate of income tax T_x	19%	19%
Yearly amortization (thousands PLN) A	13398	12411
Operational assets for the end of 2009 (thousands PLN) AOP	158914	304827
Operational working capital for the end of 2009 (thousands PLN) OKN	-102593	98867
Residual income (thousands PLN) RI	39678,69	1591,78

Source: Own calculations.

Źródło: Obliczenia własne.

CONCLUSIONS

Systematic evaluation of the efficiency of the strategy of financial liquidity applied by the management and the rectification of it, if necessary, should ensure the survival of the enterprise in competitive and changing surroundings. The analyzed enterprises noted a drop of the indexes of the financial liquidity by the end of the studied period what indicates problems in performing various current liabilities. This is also confirmed by the analysis of the index of the net liquid balance. However, positively valued was the calculated positive residual income for both enterprises in 2009. It can indicate that the corrected strategy of the financial liquidity will contribute to the increase of the value of those companies in the future.

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OCENA EFEKTYWNOŚCI STRATEGII PŁYNNOŚCI FINANSOWEJ PRZEDSIĘBIORSTW GOSPODARKI ŻYWNOŚCIOWEJ

Streszczenie. W opracowaniu zaprezentowano wyniki analizy strategii płynności finansowej dwóch przedsiębiorstw gospodarki żywnościowej. Wykorzystano w tym celu metodę analizy wskaźnikowej oraz kalkulację zysku rezydualnego. Badania obejmowały okres pięciu lat 2005–2009. Analizowane przedsiębiorstwa różniły się między sobą ze względu na stosowaną strategię płynności finansowej. Skalkulowany zysk rezydualny obu przedsiębiorstw był nieujemny, co świadczy, że stosowane przez zarządzających strategie płynności poprawiają wartość tych przedsiębiorstw.

Słowa kluczowe: płynność finansowa, efektywność, zysk rezydualny

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