

WORKING CAPITAL OPTIMIZATION IN SLOVAKIAN PRODUCTION COMPANY

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Abstract: Important task of the financial policy of the firm is to determine necessary level of working capital that provides finances for production financing. It can be quantified by various indexes, but most decisive factor presents volume of sales from realization of the firm's activity. Correlation method can be used for determination of total need of short term property. Using of this method by the way of time series of data about sales volume and short term property from the past periods helps to construct regression function of their mutual relation. According such relation there is possible to state also expected need of working capital of the firm for future period.

Keywords: short term property, working capital, financial decision, source of financing, volume of sales

JEL Classification: G31

1. INTRODUCTION

Present state of the firm's financial stability and sufficient liquidity belong among most important goals of any financial management. Mainly qualitative and effective financial management of the firm is key factor of the firm's success at the market. One of the ways for financial stability and liquidity achievement is management of working capital that can provide target level of the capital for financing of the short term activity of the firm and payment of the firm's liabilities.

Short term activities of the firm are base for improving of the working capital volume and its optimization can retain demanded level of financial processes. [4]

One of the important task of working capital management is stating of the demanded need of short term property since its optimal level provide normal running of the firm with possibly lowest costs. Therefore there is necessity to give attention to the analysis and planning of every elements of the short term property.

2. FORMULATION OF SCIENTIFIC PROBLEM

Many studies have been conducted in corporate finances regarding long-term investment and financial decisions. However, short term asset investments play a significant role in the financial decisions. [6] Therefore management of the firm must give great attention to the working capital management. Working capital, known also as active capital, provide financing of service activity of the firm and it can be determined as short term assets (STA) that are available for service activity of the firm after covering of the short term liabilities (STL), including debts.

$$WC = STA - STL \quad (1)$$

Working capital (WC) can be determined also as part of the short term assets that is not covered by short term foreign capital. It can be calculated as a state of working capital or as a change of working capital. Changes in working capital result from the economical activities that firm performed in the given period. In case when firm creates profit, property of the firm is growing as well, and by this way also working capital. We can say that working capital depends on profit. Optimal deploying of the individual

elements of the working capital, for example deploying of the payment to suppliers, improve profit of the firm. [8] From the short term view there are any disturbing time elements, therefore we can say that working capital can be equal with profit that equals cash flow.

Importance to manage working capital can results from the following reasons:

- It serves for providing of the firm's liquidity
- It serves for control of financial development of the firm
- It presents source for financing – so called internal financing
- It serves for evaluation of the firm's credibility
- It influences paying ability of the firm

From the view of the mentioned there is reason to analyze reasons for any decreasing of the working capital and providing of working capital increasing with regard to the optimal state of the working capital. Optimization of the working capital level presents optimization of its individual elements. Some of such elements include cash in the bank, cash in deposit accounts, stocks, debtors, creditors and overdrafts. [10]

During management of the working capital level management of the firm can use following measurements. In case company needs to increase working capital, it can be done through growth of the owner's deposit, credit receiving from the bank, sale of the long term property that is already not used, and increasing of net profit. In case company needs to decrease working capital, it can pay dividends, allocate service loss, refund credits, and provide long term property or long term loans.

Due to the control of financial development there is very important to control and analyze regularly mainly short term area, since this area is influenced by great variation. Management of the firm must calculate therefore with financing of contingency work that is generally difficult due to the possible changes. [7] Such changes can be followed through working capital, where we can derive important knowledge about financial situation of the firm and to evaluate economy of the financial situation of the firm. Working capital influences greatly value of the firm's

owners. Relation among working capital and value of the owners is determined by effective working capital strategy, which is in the practical conditions characterizes as follows: [12]

- Conservative strategy – long term capital is used not only for financing of long term property and permanent need of short term property, but also for temporal need of working capital.
- Classical strategy: it regards golden rule of financing. Permanent need of short term property is covered by long term consolidate sources; temporal need is financed by short term sources.
- Aggressive strategy: short term foreign capital is used also for financing of permanent need of short term property; it is very dangerous way of financing due to the possible instability of the firm.

3. PROCESS AND METHODOLOGY

Optimal level of the working capital depends on the volume of the firm's activity that can be quantified by number of indexes. Main factors for determination of total need of working capital are as follows:

- Concrete process of short term property cycle,
- Volume of the firm's activity and its growth,
- Policy of the firm during determination of the working capital need.

Process of working capital cycle depends on the branch and activity of the given firm. Process of the service cycle can be characterized by the indexes, as for example speed and turning time of the short term property.

Correlation and index method can be used for determination of the total need of the working capital. Correlation method serves for construction of regression function of the mutual relation among sales level and short term property from the previous periods by the way of time series. The function is the base on which there is possible to determine also expected need of working capital according expected volume of the sales. Decision maker must identify optimum correlation between working capital, the rotation of its individual elements and the company profitability. [9]

Short term property is structured during using of index method to the part that is directly dependent on the sale volume j (stocks of the material, products, claims from the business, etc.) and to the part that is indirectly dependent on the sales volume (stocks of the consumables, energy, etc.). Total need of working capital can be calculated according following equation:

$$N_e = S_d \cdot I_s \cdot (1 - S_e) + S_i \cdot I_{CH} \quad (2)$$

N_e – expected need of short term property

S_d – initial state of the short term property that depends directly on the sale volume

I_s – index of expected growth of the sales

S_e – expected speed up of the short term property turnover, depending on the sale volume, expressed by decimal number

S_i – initial state of the short term property that depends on the sales volume indirectly

I_{CH} – index of expected change of the short term property dependent on the sale volume indirectly

Third factor that determines need of working capital is policy of the firm during determination of its need. It results generally from the cost quantification, connected with capital investing in the short term property and from the quantification of the losses and risks, connected with insufficient volume of the working capital. [5]

Optimization of working capital counts with risk conditions that the management of the firm has to face. In the real world optimal policy of the working capital management means mainly cost minimization approach. [11]

4. PRESENTATION OF RESEARCH RESULTS

Important task of the financial policy of the firm is determination of the necessary level of working capital that means volume of the finances that are necessary for financing of the service. One of the decisive factors that influence level of financing presents volume of the firm's activity. It can be quantified by various indexes, mainly by volume of realization sales. [2] We have used correlation method for determination of short term property need in Slovak Food Company. Company is acting at the market from 1994 and it rose as a business company that deals with food sale in the region of east Slovakia. Main activity of the company is bakery production with most modern production technology. It covers needs of the east as well as middle regions of Slovakia. At the future company wants to penetrate also to the whole market of Slovakia through permanent innovation of production equipments, technological processes and products.

By the way of correlation method using and by the way of time series of sales data and short term property from the previous periods we constructed regression function that expresses their mutual relation. According the function there is possible to determine according expected volume of the sale for future period also expected need of short term property (STP) as well as optimal volume of working capital (table 1).

Mutual dependence of the sale volume and short term property investing can be expressed by the way of regression line with general expression according following equation:

$$Y_0 = a + bx_i \quad (3)$$

Parameter a , b is calculated as follows:

$$a = \frac{\sum_{i=1}^n Y_i}{n} \quad b = \frac{\sum_{i=1}^n x_i \cdot Y_i}{\sum_{i=1}^n x_i^2} \quad (4)$$

Y_0 – expected need of short term property

Y_i – short term property investing during individual periods $i \dots$

n ,

n – number of analyzed data (periods),

x_i – deviation of the sale in the period i (X_i) from the average sale (\bar{X}) during analyzed periods.

Table 1 Input data for calculation of necessary level of Working Capital

Time period	1.	2.	3.	4.	1.	2.	3.	4.	1.	2.	3.	4.
Sales thousand €	129	137	145	133	156	149	159	144	142	137	143	154
Short term property thousand €	39	43	49	35	59	57	61	45	51	44	55	64

Source: internal material of the company

Resulting from the higher mentioned general shape of regression line we can assume that sales are independent index X and short term property is dependent index Y.

Due to the determination of regression function and due to the observance if there is mutual dependence of the two mentioned indexes we have used Microsoft Excel program and we found out following correlation (figure 1).

From the correlation scope we can evaluate, that there is existing mutual dependence between analyzed indexes and intensity of the dependence can be expressed by the way of correlation coefficient R^2 . Correlation coefficient can achieve values from the interval $<-1; 1>$. Through further MS Excel using we found out value of correlation coefficient that is:

$$R^2 = 0,8447$$

Value of correlation coefficient proves strong and positive dependence. Regression line had been given consequently to the scope of correlation. Its trend illustrates figure 2.

Equation of the regression line presents result from MS Excel and its shape is following:

$$y = 0,9121 \cdot x - 81,172$$

y – short term property invested
x – volume of quarterly sales.

Shape of the regression line that is mentioned higher, described mathematical dependence among invested short term property and sales. According mentioned equation there is possible to assume short term property investing according relation on the expected sales volume.

Company did not give till present time great attention to the determination of the necessary level of short term property, depending on the achieved sales. From the mentioned we can assume that this model can be very useful tool for the management of the working capital in the firm. According concrete value of the expected sales we can calculated through simple equation of regression line also expected need of short term property and by this way also working capital of the firm.

5. DISCUSSION AND IMPLICATIONS

Total potential of the working capital of the firm presents case when short term property is considered as liquid tool for covering of the short term liabilities.

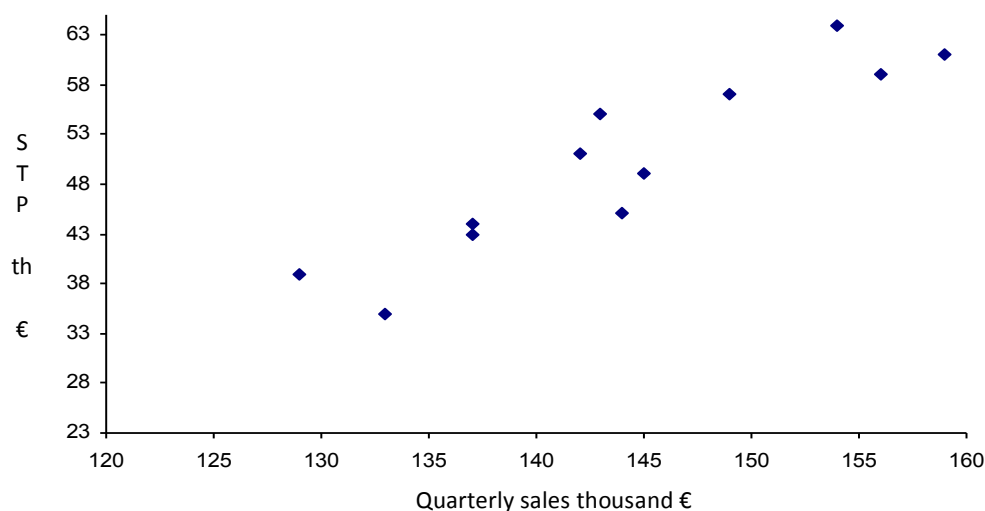


Figure 1 Illustration of correlation of the analyzed indexes

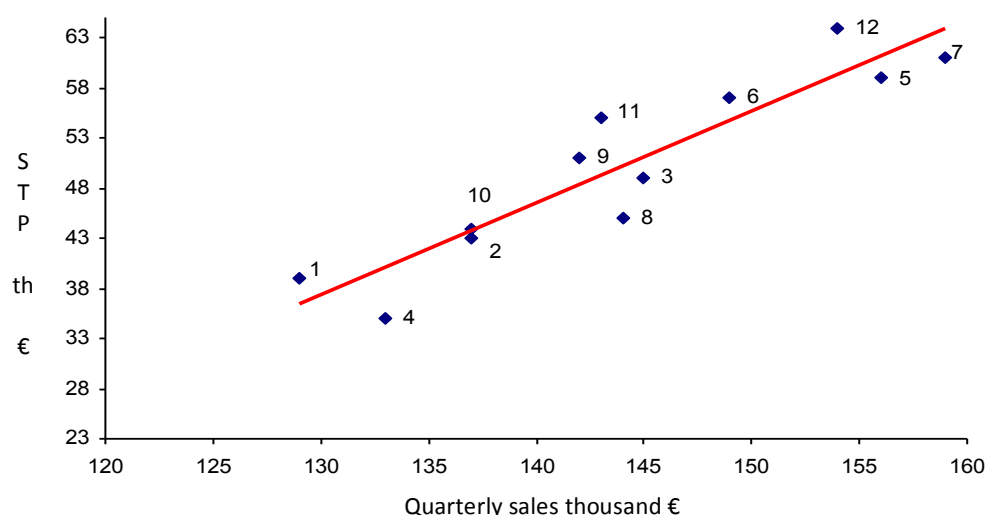


Figure 2 Dependence of the short term property on the sales

Due to the problems to change whole volume of short term property to money optimal volume of working capital is considered level 30-50% from the volume of short term property. In the analyzed company level of the working capital is smoothly negative. It was caused by decreasing of stocks and increasing of the bank credits. Analysis of stocks during whole analyzed period proved growth of the material stocks. Company should deal from the view of working capital optimization mainly with stocks as an element of the short term property and to orientate to the following costs decreasing:

- costs for stocks provision (ordering, fulfilling of the stocks, contracting of business agreement, costs for manipulation, invoices accounting, invoice liquidation),
- costs for storing (losses during storing, wages of stock keeper, depreciation of stock spaces, maintenance of stores),
- costs, caused by decrease of stocks value (durability of stocks),
- capital stocks (investing of the financial sources).

In area of stocks management there is possible to decrease mentioned costs by applying of optimization models. Goal of their application is to organize investing and moving of the production stocks through determination of optimal volume of order, number of delivery and delivery cycles with aim that costs could be minimized and finally economical result of the firm could be improved. (Hammer, 2007)

As for the management of claims there is also negative development. Claims from the business relations during analyzed period increased and at the same time turnover period of claims increased as well that means, company cooperates with firms that can have financial difficulties. Costs of investing are growing with claims growth and therefore company must try to decrease them. Costs of claims can be considered as costs for claims administration, recovery of claims, losses from the unrecovered claims.

As prevention against unrecovered claims rising company could apply basic file of credit policy with following tasks: [1]

- determination of credit limits against clients and control of their observance,
- control of claims after payable period,
- initiation of payment (through sanctions, reminder),
- report of clients data,
- verification of the client credibility,
- control of payment conditions of the orders,
- regular monitoring of the claims,
- analysis, plans and control of the credit relations and claims.

As for the management of the financial property there is negative situation. Company is threatened by lack of cash tools that increases risk of liquidity and increasing of costs that connect with insolvency of the company.

6. CONCLUSIONS

One of the important tasks of the financial policy is to determine necessary level of working capital. Analyzed company did not give attention to determination of the short term property need according achieved sales. Therefore we can conclude that optimization of working capital can be very helpful for the firm's management.

Mutual dependence of the sales volume and short term property investing can be expressed through regression line with shape that describes mathematical dependence of the sales and short term property. According concrete value of the expected sales and according simple quantification of regression line there was calculated expected need of short term property and working capital for the firm's activity financing. From the correlation we can see that there is mutual dependence between following indexes. Mentioned process can help the firm to plan its future activity, by which there is possible to penetrate to other markets and to increase firm's economical result.

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