

NORMATIVE DETERMINATION OF CURRENT ASSETS – AN EFFICIENT TECHNIQUE TO MANAGE THEM

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Abstract. The efficient management of current assets has a significant importance in an enterprise, as it influences both the determination of their size and financing sources. If the size of current assets is excessive, own sources are usually insufficient, and the company has to resort to borrowed sources, which are quite expensive. The efficient management of current assets is particularly important in the case of the small and medium-sized enterprises, which often encounter problems with financing the extra working capital. The analysis and determination of norms for both current assets in general and their respective elements is one of the most efficient techniques for their managing.

Keywords: *current assets, stocks of goods and materials, product in progress/ work in progress, short-term receivables, planning, norm/normative, reserve in days, management of current assets*

Introduction

To achieve its intended objective, a manufacturing company, regardless of its size, field of activity, or form of ownership, needs current/circulating assets in addition to the fixed assets. The profitability of any manufacturing company is greatly influenced by the degree of use of assets, consisting of fixed assets and current assets. Manufacturing companies use fixed assets to transfer raw materials into finished goods. Current assets are needed to purchase raw materials, accessories, to stock up the various stages of the production process, sell finished products, and recover the resources they spend. Current assets ensure the continuity of production and marketing processes in the company.

Current assets represent the money advanced for the establishment of two types of funds: circulating production funds and circulation funds. Circulating production funds serve the production field, while circulation funds serve the circulation field.

Thus, current assets are made up of stocks, short-term achievable values, as well as available values. Current assets in the balance sheet are ranked according to the time needed for assets to be converted into cash. The faster this transformation is, the higher the company profitability is and more manageable the enterprise financial situation is.

Literature review

The relationship between current assets management, current assets investments and profitability has much more interest in financial and accounting literature.

A significant portion of a firm's capital structure is represented by short-term assets and other resources that mature in less than a year (Garcia-Teruel & Martinez-Solano, 2007). This implies that the financial management of a business hinges on the management of its short-term operations which then drive to the long-term goals.

In recent years, working capital management has gained importance as managers and academicians recognize the importance of the efficient management of a firm's liquidity as vital in the survival of the firm, especially at a time of global financial turmoil (Uremadu et al., 2012).

It is also noted that the management of current assets and liabilities which are financed by the working capital takes a lot of managerial time and effort and thus assumes greater importance (Chang et al., 1995).

Working capital is the value of current assets and current liabilities. Current assets include cash, accounts receivables, raw materials, work-in-progress, and finished goods inventories, while current liabilities include accounts payables, notes payables, and accruals. Many corporate finance managers focus on the management of these individual components of the working capital to improve overall efficiency (Nobanee, H., Abraham, J. (2015).

Ishmael and Kehinde (2013) examine the effects of components of current assets on the profitability in the Ajaokuta Iron Industry. The study concluded that there are different proportions of current assets in the industry (for example, there is a huge amount of current assets in receivables, cash, and bank). The results revealed that the profitability analysis of Ajaokuta Iron Industry has shown an upward trend in the period 2001-2010.

Working capital management decisions are of particular importance to small business firms due to their heavy dependence on owner finances, trade credit and short-term bank loans. When coupled with inadequate long-term financing, poor working capital management can lead to the failure of small business firms.

Studies in the UK and the US have shown that weak financial management – particularly poor current assets management and inadequate long-term financing - is a primary cause of failure among small businesses (Berryman, 1983). However, the failure rate among small businesses is very high compared to that of large businesses.

A good management of current assets is impossible without the determination of norms for each of their components.

M. Gheorghitsa (2011), A. Tomsa (2012), T.A. Frolov (2012), and L.N. Chechevitsyna (2016) considers that the determination of norms for each component of current assets is the basis for the rational use of the company's economic resources. It consists in the development of justified normative and norms of their expenditure, which are necessary for the creation of permanent minimum stocks but sufficient for uninterrupted operation of the company.

The normative of each item of current assets characterizes the minimum stocks of commodity-material values calculated in days of the stock or in other units.

The normative of current assets is determined in monetary terms for individual elements (groups) of current assets and, in general, for the company.

Toiker Dmitrii (2009) mentioned that when determining the need for components of current assets, it is necessary to take into consideration that, firstly, they are responsible for the production costs of enterprises and their shortages can lead to interruptions in the production process. Secondly, the receipt of revenue often does not coincide with the time shipment of products and the beginning of a new production cycle, that is, the time of consumption of material resources.

The purpose of research

Under a fierce economy, when each company is interested, at least, to maintain its position on the market, there should be no problems with providing the necessary current assets. However, in Moldova, many businesses, especially the small- and medium-sized ones, are facing problems with the financing of current assets. This situation is often conditioned by the fact that enterprises have excessive raw materials and finished products stocks at the warehouse. When the period of debt collection is high, the company is no longer able to finance current assets from its own sources, so it often resorts to the source next to own source (stable liabilities), and when the latter is not sufficient, the company resorts to borrowed sources, which usually contributes to the cost increase. To avoid such situations, companies need to conduct current assets analysis and efficient stock management. To do so, it is necessary to determine the company needs for each component of current assets. Optimal provision of components of current assets leads to minimization of

costs, improvement of financial results, to ensuring the rhythm and coherence of the work of the company.

The main purpose of stock management is to optimize its size, which has a positive influence on the financial condition of the enterprise.

It is worth noting that today, many small businesses do not perform the analysis of stocks and stock planning (determination of norms for each item of current assets), the results of which can serve as a basis for their efficient management. This situation is caused by the fact that enterprises do not carry out the planning of current assets.

The aim of this research is to present the methodology for determining the norm (minimum necessary) of different items of current assets. The norm can be calculated for the following elements of current assets: raw materials, work-in-progress, finished goods inventories and future expenses, while in the case of accounts receivables and cash, norms are not calculated.

Research results

Incorrect determination of the need for current assets can generate both insufficiency and surplus of current assets. If an insufficiency of current assets is formed as a result of the incorrect determination of the need for current assets, such a situation will cause breach of the rhythm and reduction of the production volume, the non-compliance with the contractual obligations towards clients, and consequently the decrease of the company's sales, profit and financial instability. The stocks surplus on some elements of current assets leads to freezing the company's own financial resources in different stocks, which diminishes the ability of the company to finance fixed capital investments to increase the efficiency of production (Figure 1).

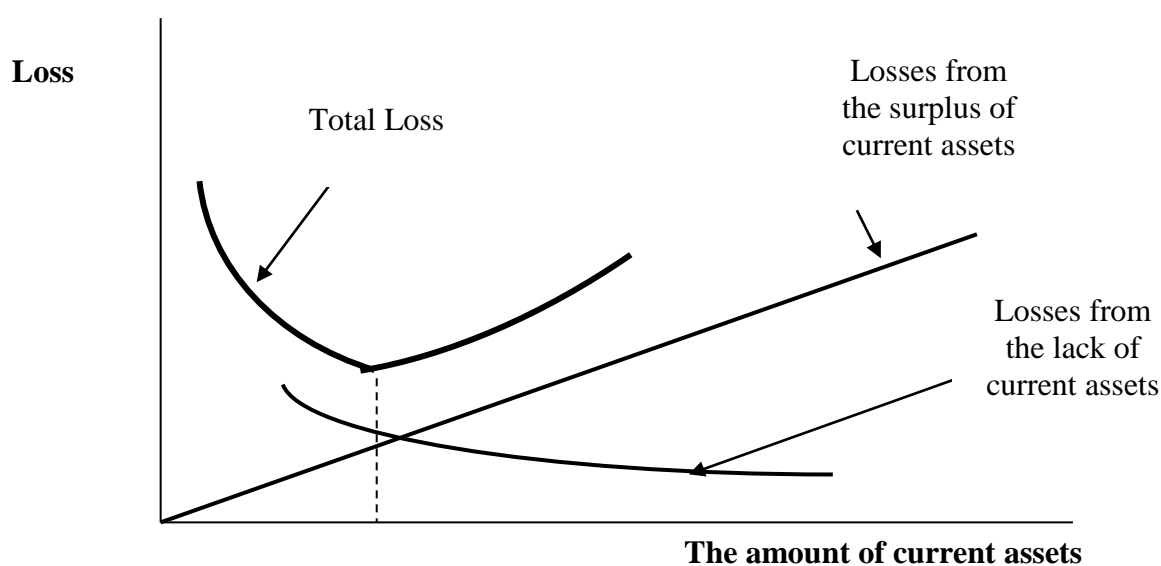


Figure 1. Optimal value of current assets Source: [7]

The need for current assets depends on several factors, such as: production and marketing of manufactured goods; production cycle; types and structure of the raw material used; growth rates of production volume, etc. The size and accuracy of determining the need for current assets also depends on the time they are in the production sphere and the sphere of circulation.

The time in the production sphere includes the period during which the current assets take the form of stocks of raw materials on the warehouse and unfinished goods. The time within the circulation includes the period during which current assets take the form of the stock of finished goods at the warehouse, the delivered but unpaid product, the receivables and the cash.

The higher the rotation speed of the current assets is, less current assets will be needed.

Every company is interested in reducing the need for current assets, yet this reduction must be grounded, as sufficient current assets ensure a rhythmic activity. That is why, determining the optimum need for current assets has a special importance in the company.

The optimal need for current assets is determined as the sum of the advanced money in the creation of production stocks (stock of goods and materials), unfinished goods (work in progress) and the stock of finished product at the warehouse. The process of calculating the optimum size of current assets, sufficient to ensure the normal activity of the company, can be ensured by determining the norms for each item of current assets. Thus, the determination of norms for each element of current assets means the determination of the minimum size of current assets, but sufficient for the rhythmical and efficient assurance of the company activity. The norm determination for each element of current assets contributes to highlighting and capitalizing on internal reserves, reducing the production cycle, faster product selling.

Normative determination includes determination of both norm of reserve in days and the norm of current assets.

Three methods can be used to determine the optimum need for current assets:

- Analytical or statistical method,
- Coefficient method,
- The method of direct mathematical calculations.

The essence of the analytical method is reduced to correcting existing stocks of different elements of current assets by reducing surplus or liquidating assets that can no longer be used in the company. According to this method, the norm of current assets for the planning period is calculated based on the adjustment of the value of current assets of the reported period by using the coefficients, indicating the changes of production volume and the duration of rotation of current assets.

Example:

During the reported period, the company achieved 46 million MDL sales (VV_R) by using average annual current assets (MC_R) worth 8,8 million MDL. For the planning period, sales are planned to increase by 12% and to reduce the circulation time (D) by 5 days. The required current assets for the planned period based on the use of the coefficient method shall be determined as follows:

1. Determination of sales (VV_{pl}) and the rotation period (D_{pl}) of the current assets for the planning period:

$$\begin{aligned} VV_{pl} &= VV_r * 1,12 = 46 * 1,12 = 51,52 \text{ (million MDL)} \\ D_r &= 360 * MC_r / VV_r = 360 * 8,8 / 46 = 69 \text{ (days)} \\ D_{pl} &= 69 - 5 = 64 \text{ (days)} \end{aligned}$$

2. Adjustment of the need for current assets for the planning period based on the sales increase ratio and the reduction of the rotation time of the current assets

$$MC_{pl} = D_{pl} * VV_{pl} / 360 = 64 * 51,52 / 360 = 9,16 \text{ (million MDL)}$$

Thus, the need for current assets for the planning period determined according to the analytical method will account for 9,16 million MDL.

As a rule, the analytical method and the coefficient method can be applied by companies operating for more than a year, having a well-organized production process, clear production program, statistical information for previous periods, but which have no specialists with planning skills in the field of current assets.

When a company is newly created (at the start of the operation period) or is already in operation but undergoes essential changes in the production schedule or working arrangements with customers and suppliers, it is recommended to use the mathematical method to determine the need of current assets.

This method can be used to calculate the need for the following elements of current assets: production reserves (raw material, accessories, fuel, packaging, spare parts, etc.), work in progress, finished product at the warehouse, future expenses. For accounts receivables and cash, the company does not calculate the norm.

According to this method, the need for current assets is determined for each element separately based on the corresponding mathematical formula.

The total norm of current assets represents a sum of norms of production reserves (raw material, accessories, fuel, packaging, spare parts, etc.), work in progress, finished product at the warehouse and future expenses calculated based on this method.

The norm of total current assets represents the sum of norms determined per each element (see the formula 1):

$$N_{total} = N_{rp} + N_{pce} + N_{pf} + N_{chv}, \quad (1)$$

where: N_{total} – total norm of current assets, MDL

N_{rp} - norm of current assets under production reserve, MDL

N_{pce} - norm of current assets under unfinished goods, MDL

N_{pf} - norm of current assets under finished goods at the warehouse, MDL

N_{chv} - norm of current assets under future expenditure.

The norm of current assets can be calculated for each group separately, considering its specific features:

The norm for each element of production reserves can be calculated according to the following formula:

$$N_{rpi} = C_{zi} * R_{zi}, \quad (2)$$

where: N_{rpi} – the norm for element i of the current assets under production reserves, MDL

C_{zi} - average daily consumption of element i , MDL

R_{zi} - the reserve for element i in days.

The standby norm in days for each element can be calculated by the formula:

$$R_{ti} = R_t + R_{cd} + R_{as} + R_s, \quad (3)$$

where: R_{ti} - total reserve in days for element i , days

R_t - transport reserve, days

R_{cd} - current reserve at warehouse, days

R_{as} - insurance (guaranteed) reserve, days

R_s - seasonal reserve, days.

The transport reserve is calculated based on the period required to cover the distance from the supplier to the enterprise and considering the time needed for paperwork.

In case multiple suppliers, the transport reserve is calculated as the weighted average value of the distance to be covered and the size of the delivered batch.

Example (Table 1):

Table 1

Supply information from different vendors		
Suppliers	Size of supplied batch, tons	Supplier-client travel time, days
Supplier 1	40	10
Supplier 2	30	15
Supplier 3	35	12

$$R_t = (40*10+30*15+35*12)/(40+30+35) = 12 \text{ (days)}$$

The average amount of the transport reserve calculated according to the weighted average would be 12 days.

The current inventory reserve of the goods is the reserve in days, which ensures the necessities of production between two consecutive supplies (see figure 2)

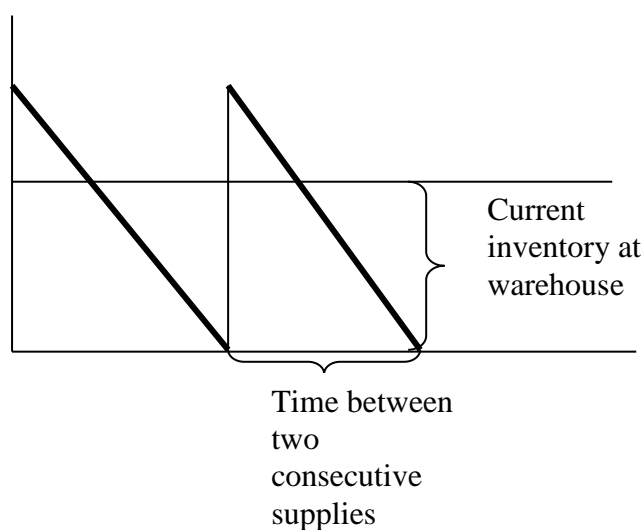


Figure 2. Current inventory reserve at warehouse

Source: [7]

The average current reserve in days is calculated in the amount of 50% of the timeframe of two consecutive supplies:

$$R_{cm} = t/2 \quad (4)$$

where: R_{cm} – the average reserve, days

t – timeframe of two consecutive supplies, days.

The average timeframe between supplies can be determined by the formula:

$$t = 360 (180;90)/A \quad (5)$$

where: A - number of supplies during the planning period.

The insurance reserve (guaranteed) is intended to meet the production needs of raw material in the event of supply deviations from the established schedule.

The size of this reserve is usually set at 50% of the current reserve size. This limit can be increased in the following cases:

- the company is located far from suppliers of raw materials,
- supplied materials are unique (or rare),
- the finished product formula requires many components supplied from multiple suppliers.

The seasonal reserve is determined for enterprises that have a seasonal character in their business.

The norm of current assets as unfinished goods can be calculated by taking into consideration the production cycle and the rate of expenses increase according to the formula:

$$Npce = Cpr * Tc * Kch, \quad (6)$$

where: $Npce$ - normative of work in progress, MDL,

Cpr - production cost of the average daily production quantity,

Tc - production cycle, days,

Kch - the growth rate of expenditures.

As seen in formula 6 on the norm of unfinished goods, the duration of the production cycle, the average daily cost of the production and the rate of expenditures growth have a direct influence.

The production cycle represents the time taken to perform the operations of technological process. It includes the time required for the preparation and processing of raw material and time for transmission of unfinished goods from one operation to the next, starting with the first operation and ending with the handover of the finished product to the warehouse.

The expenditure growth rate is characterized by the finishing degree of the product and is calculated as a ratio of the cost of unfinished goods in the cost of finished production.

The costs increase varies from one company to another and can be both uniform and non-uniform (slow or accelerated).

When the expenses increase takes place evenly, the coefficient of their growth can be calculated by the formula:

$$Kch = [M + 0,5(Cpf - M)]M \quad (7)$$

where: Kch - expenditures growth rate,

Cpf - cost of finished production, MDL

M - cost of raw material used in the production process.

In case of uneven expenditure growth, the value of the coefficient can be calculated as an average of coefficients for several phases of the production process by the formula:

$$Kch = \frac{\sum Ki}{i} \quad (8)$$

where: Ki - costs growth factor of phase I of the production process,

i - stages of the production process for which the expenditure growth coefficient was determined.

The growth of expenditure rate for a certain phase is determined by the formula:

$$Ki = Ci / Cpf \quad (9)$$

where: Ci - cost of production in progress at phase I of the production process, MDL

Cpf - production cost of the finished product. MDL

3. *The norm of the current assets as finished product at the warehouse* depends on the average daily production quantity of the ready-made production and the reserve in days.

This norm may be determined by the formula:

$$Npf = Cvmz * Tz \quad (10)$$

where: Npf - norm of finished product at the warehouse, MDL

$Cvmz$ - production cost of the average daily quantity of finished product, MDL

Tz - standby standard in days for the finished product at the warehouse.

The number of reserve days for the finished product at the warehouse is calculated as the sum of the timeframe required to form the delivery batch and complete all the documents required to deliver the product.

$$Tpf = Tp + Td \quad (11)$$

where: Tpf - number of reserve days for the finished product at the warehouse, days

Tp - time required for batch formation, days

Td - time required to complete the necessary documents, days.

The norm of current assets under the form of future expenses is calculated based on the following formula:

$$Nchv = Chian + Chd + Chc \quad (12)$$

where: $Nchv$ - norm of current assets under the form of future expenses, MDL

$Chian$ - amount of future expenses at the beginning of the year, MDL

Chd - future expenditures included in the total expenses of current year, MDL

Chc - future expenses that will be allocated to the production cost in the planned period, MDL.

Applying the above-mentioned formulas, we will calculate below the norm of stocks at the "Alfa" Company, which is a small enterprise (table 2).

Table 2

Determination of norms for different elements of current assets, "Alfa" Company

Elements of current assets	Annual cost of raw materials, Th MDL	Total cost of production, Th MDL	Share of raw materials cost in the total production cost		Reserves, days	Production cycle, days	Stock normative, Th MDL
Stock of raw materials	10800				25		750
Stock of work in progress (unfinished goods)		18500	0,58			15	610
Stock of finished goods		18500			30		1540

The calculated norm serves as a basis for inventory analysis, efficient control and management.

Inventory analysis in a company targets several aspects. However, the primary direction consists in tracking both totally and by elements of inventories of the real sizes compared to the norm, as this comparison influences both the size of the current assets and the source of their financing.

The table below shows the size of the actual stocks at the "Alfa" company.

Table 3

Production stocks, "Alfa" company, Th MDL

Elements of current assets (stock)	Stock norms	Real stock	swerve	
			absolute	relative, %
Stock of raw materials	750	2830	+2080	+277,3
Stock of work-in progress (unfinished goods)	610	930	+320	+52,5
Stock of finished goods	1540	4520	+2980	+193,5

Data in Table 3 show a significant exceedance of the real stock size over the normative size. To finance the surplus of current assets, the company placed an additional 5380 thousand MDL in the circuit.

This funding was primarily made from its own source (net profit). In the analyzed period, the "Alfa" Company obtained a profit of 2865,8 thousand MDL. Stable liabilities, served as another source of financing, which amounted to 435,2 thousand MDL. A third source was the increase in short-term financial debts by 2079 thousand MDL.

The main causes leading to the occurrence of stocks above or below the normative ones are established and studied after the three stages of the economic circuit: supply, production, sales. Of course, some of the reasons may be objective, being caused by changes in the volume and structure of production, change of the market, supply conditions. In these cases, the enterprise will use its own source or even short-term loans to cover the surplus of current assets.

There may also be subjective reasons, such as non-product activity, overtaking production costs, uncompetitive quality of finished products, creation of stocks above needs, etc. That is why it is strictly necessary to carry out the determination of norms and analysis for each type of stock, which serves as a basis for their efficient management.

Conclusions

For the efficient management of current assets in an enterprise, the analysis of their use must be carried out both in general and on each element of them. A qualitative analysis of current assets is possible only when the company calculates norms for current assets, the necessary/minimum size of current assets, which ensures its activity at a normal pace, on the one hand, and on the other - increase the efficiency of using the available resources. Determination of norms both for current assets in total and for each element apart serves as the basis for their analysis and efficient management. Efficient management of current assets ensure the high profitability of the company.

Bibliography:

Books:

1. Chechevitsyna, L. The Economics of Organization: International Banking Institute, Textbook, Rostov, 2016.
2. Economics of Economic Units. / Coord.: A. Tomša et.al. Chisinau: Central Printing House. 2016
3. Frolov, T. Economics, Lecture notes. Taganrog: Publishing house of TIT FYU, 2012
4. Gheorghitsa, M. Economics of industrial firm, Chisinau, ABC Typography, 2011

Journal published papers:

5. Berryman, J. Small Business Failure and Bankruptcy: A survey of the Literature. In: *European Small Business Journal*, 1983, 1[6]. 47-59.
6. Chang, C., Dandapani, K., Prakash, A. Current assets policies of European and Asian Corporations: A critical Examination. *Management International Review*, 1995, Vol. 35, pp. 105-117.
7. Garcia-Teruel, P. J., & Martinez Solano, P. The effects of working capital management SME profitability. In: *International Journal of Managerial Finance*, 2007, 3(2), 164-177. Available at: <https://scholar.google.co.za/scholar?q=The+effects+of+working+capital+management+SME+profitability&btnG=&hl=en&assdt=0%2C5>
8. Ishmael, O., & Kehinde, J. S. Profitability analysis trend of components of current assets and their prospects in Ajaokuta iron industry. *eCanadian Journal of Accounting and Finance*, 2013, 1(2), 28-37. Available at: <http://www.ecanadianjournals.com/index.php/journal-list?layout=edit&id>
9. Nobanee, H., Abraham, J. Current Assets Management of Small Enterprises. In: *Journal of Economic Studies*, 2015, 42(4). Available at: https://www.researchgate.net/publication/282410851_Current_assets_management_of_small_enterprises
10. Toyker, D. Development of methods of analysis of the working capital of industrial enterprises, The thesis abstract on competition of a PhD of economic sciences, Moscow, 2009, Available at: [file:///C:/Users/Maria/Downloads/0-793011%20\(3\).pdf](file:///C:/Users/Maria/Downloads/0-793011%20(3).pdf)
11. Toyker, D. How to calculate the need for current assets // *Management accounting and finance.*, 2008. 3 (15)
12. Uremadu, S. Egbide, B. and Enyi, P. Working Capital Management, Liquidity and Corporate Profitability among quoted Firms in Nigeria Evidence from the Productive Sector, *International Journal of Academic Research in Accounting, Finance and Management Sciences*, 2012, Vol. 2, No.1, pp. 80-97, available at: <https://dokumen.tips/documents/working-capital-management-liquidity-and-corporate-profitability-.html>