

CORRELATED ANALYSIS OF CLIENT-CREDIT COST WITH THE ONE OF SUPPLIER - CREDIT COST

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ABSTRACT: *The given client-credit has associated several types of costs. If a company gives client-credit for a certain period of time, then it will have to finance its activity from other sources. Another aspect is the one related to the size of allotted sum. The sum that must be covered does not equal the turnover. The impact on financing the operating cycle is found usually only under the form of expenses which are made up of variable costs (because amortization must not be paid, the profit is included in the price). Thus, the sum which must be covered is not related to the non-cashed turnover from the client-credit, but only to variable costs. This will be the sum that must be covered from the financing sources. Supplier-credit is a source attracted, usually it has no cost.*

KEY WORDS: *total commercial claims; total commercial debts; cost of client-credit; cost of supplier-credit; absolute gap of financing.*

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1. GLOBAL ANALYSIS OF THE LEVEL AND DYNAMICS OF COMMERCIAL CLAIMS AND DEBTS

The global analysis of the level and dynamics of commercial claims and debts refers to comparing the level, dynamics, structure and efficiency of seller and buyer commercial credit management.

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1.1. Global analysis of commercial credits' level

The goal is to identify the company's position and the impact in absolute values on the financial resources management.

Total commercial claims (Cr_{com}) are made up of:

- claims to clients (CI), for the exchange value of sold goods (given seller credit);
- claims to suppliers (Afz), for advance money paid (given buyer credit).

Total commercial debts (D_{com}) are made up of:

- debts to suppliers (Fz), for the delivered goods (received seller credit);
- debts to clients (Acl), for the received advance money (received buyer credit).

The difference between the level of commercial claims and commercial debts represents a surplus of financial resources or an additional necessary to be financed of the operational cycle, named absolute gap of financing:

$$\begin{aligned} FE_{com} &= Cr_{com} - D_{com} = (CI + Afz) - (Fz + Acl) = (CI - Fz) + (Afz - Acl) = \\ &= FE_{cv} + FE_{cc} = FE_{CI} + FE_{Fz} \quad (1) \end{aligned}$$

where:

FE_{com} – additional necessary to be financed or surplus of financial resources

FE_{cv} – from seller commercial credits (received and given)

FE_{cc} - from buyer commercial credits (received and given)

FE_{CI} - from relations of commercial credit with clients

FE_{Fz} - from relations of commercial credit with suppliers

If:

- a) $Cr_{com} > D_{com}$, that is $FE_{com} > 0$, a surplus of necessary to be financed results from the management of commercial credits, which requires financial resources to cover them;
- b) $Cr_{com} < D_{com}$, that is $FE_{com} < 0$, a surplus of financial resources results from the management of commercial credits, which can be used to finance other activities;
- c) $Cr_{com} = D_{com}$, that is $FE_{com} = 0$, the additional necessary to be financed is null.

1.2. Global analysis of commercial credits' dynamics

The change in the value of absolute financing gap from commercial credits can be explained on the basis of the change in all implied categories. The evolution of constitutive elements in one way or another will determine the indicator's evolution.

$$\begin{aligned} \Delta FE_{com} &= \Delta Cr_{com} - \Delta D_{com} = (\Delta CI + \Delta Afz) - (\Delta Fz + \Delta Acl) = \\ &= (\Delta CI - \Delta Fz) + (\Delta Afz - \Delta Acl) = \Delta FE_{cv} + \Delta FE_{cc} \quad (2) \end{aligned}$$

2. GLOBAL ANALYSIS OF COMMERCIAL CREDIT STRUCTURE

Three structures can be observed:

- a) two different:
 - structure of commercial claims on components (client-credit and advance money to suppliers)
 - structure of commercial debts on components (supplier-credit and advance money received from clients).
- b) a correlated structure, of surplus or additional necessary of financial resources on components:
 - on the type of commercial credits (buyer and seller);
 - on stakeholders (clients and suppliers).

The evolution in one way or another of the value and dynamics of constitutive elements determines the change in the structure of the analyzed phenomenon, which is compared depending on the company's commercial policies. (Kyerboach & Coleman, 2007)

3. CORRELATED ANALYSIS OF COMMERCIAL CREDITS' DURATION

It can be observed on several ways:

- a) on types of credits:
 - seller credit (client-credit duration with supplier-credit duration);
 - buyer credit (average duration of advance money received from clients with advance money given to suppliers).
- b) on stakeholders:
 - on clients;
 - on suppliers.

A special importance has the comparison in days of client-credit (dz_{CI}) with the duration in days of supplier-credit (dz_{Fz}), having an important impact on the company's liquidity.

- a) if $dz_{CI} > dz_{Fz}$, that is the duration in days of client-credit is longer than the duration in days of supplier-credit, then at the company's level a deficit of financial resources is created, shown in the increase of the necessary in working assets of the operation, with unfavorable impact on the operation treasury;
- b) if $dz_{CI} < dz_{Fz}$, that is the duration in days of client-credit is shorter than the duration in days of supplier-credit, then at the company's level a surplus of financial resources is created, shown in the decrease of the necessary of working assets of the operation, with favorable impact on the operation treasury. (Miculeac & Monea, 2011, p. 185)

In the second case, it is possible not to register an absolute surplus of liquidity, because:

- the duration of client-credit is:

$$dz_{CI} = \frac{CI_t}{Ca_t} T \quad (3),$$

- and the duration of supplier-credit is:

$$dz_{Fz} = \frac{Fz_t}{Cfz_t} T \quad (4)$$

In order not to register an absolute deficit of liquidity, at least the following relation must take place:

$$\frac{CI_t}{Ca_t} T \leq \frac{Fz_t}{Cfz_t} T \quad (5)$$

If there is equality, the liquidity is null.

$$\begin{aligned} \frac{CI_t}{Ca_t} T = \frac{Fz_t}{Ca_t} T &\Leftrightarrow \frac{CI_t}{Ca_t} T = \frac{Cfz_t}{Ca_t} \cdot \frac{Fz_t}{Cfz_t} T \Leftrightarrow \frac{CI_t}{Ca_t} T = \\ &= \frac{Che_t}{Ca_t} \cdot \frac{Cfz_t}{Che_t} \cdot \frac{Fz_t}{Cfz_t} T \Leftrightarrow dz_{CI} = S_e \cdot g_{fe} \cdot dz_{Fz} \quad (6) \end{aligned}$$

$$dz_{CI} \leq S_e \cdot g_{fe} \cdot dz_{Fz} \quad (7)$$

that is

$$\frac{dz_{CI}}{dz_{Fz}} \leq \frac{Cfz}{Ca} \Leftrightarrow \frac{Ca}{Cfz} \leq \frac{dz_{Fz}}{dz_{CI}} \quad (8)$$

that is

$$dz_{Fz} \geq dz_{CI} \cdot \frac{Ca}{Cfz} \quad (9)$$

where:

$(Fz_t/Ca_t)T$ – average duration to cover the debts to suppliers from the turnover;

S_e – surety indicator for operation, expenses from operation made to get 1 lei of turnover;

g_{fe} – quantity of expenses with acquisitions from suppliers in the operation ones;

Cfz/Ca – may be interpreted as a surety ratio (liquidity threshold), although it represents the quantity of expenses with acquisitions from suppliers in the turnover.

This means that if $dz_{CI} < dz_{Fz}$, there does not necessarily appear an absolute surplus of liquidity, as long as the duration in days of suppliers does not exceed the equality.

Thus, when evaluating the liquidity evolution as a result of gaps between commercial credits, there appear other factors of influence like the efficiency of the operation activity (measured through the level of operating expenses necessary to get 1 lei of turnover) and its specific measured as quantity of expenses with acquisitions from suppliers in the total of operating expenses. (Emery et al., 2004)

The main impact of the change in the duration of seller credit rotations has as a direct effect on the change in the necessary of working assets of the operation, having a favorable or unfavorable impact on the company's treasury. (Wood's & Sangster, 2008)

The change of the two average durations is reflected as it follows:

1) The change in the necessary of working assets of the operation, on the basis of the change in the average duration of receipts from clients and on the basis of the change in the average duration of payments to suppliers:

$$\Delta NFRE_{(\Delta dz_{CI}, \Delta dz_{Fz})} = [Ca_1(dz_{CI1} - dz_{CI0})/T] - [Cfz_1(dz_{Fz1} - dz_{Fz0})/T] \quad (10)$$

a) The change in the necessary to be financed of the operating cycle, on the basis of the change in the average duration of receipts from clients:

$$\Delta NFCE_{(\Delta dz_{CI})} = [Ca_1(dz_{CI1} - dz_{CI0})/T] \quad (11)$$

b) The change in the financing resources of the operating cycle, on the basis of the change in average duration of payments to suppliers:

$$\Delta SFCE_{(\Delta dz_{Fz})} = [Cfz_1(dz_{Fz1} - dz_{Fz0})/T] \quad (12)$$

2) The change in the net treasury, on the basis of change in the average duration of receipts from clients and on the basis of the change in the average duration of payments to suppliers:

$$\Delta TN_{(\Delta dz_{CI}, \Delta dz_{Fz})} = [Cfz_1(dz_{Fz1} - dz_{Fz0})/T] - [Ca_1(dz_{CI1} - dz_{CI0})/T] \quad (13)$$

4. CORRELATED ANALYSIS OF COMPARATIVE COSTS

4.1. Cost of client-credit

The cost sources for the client-credit depend on the financing source used to cover this deficit:

a) If the necessary to be financed related to the client-credit is covered from the working assets, then:

- if the working assets are made up of own capitals, the average cost of own capitals is used;

- if the working assets are made up of own capitals and medium and long-term debts, the average cost of permanent capitals is used;
- b) If the necessary to be financed related to the client-credit is covered from debts to suppliers, then:
 - if the company does not benefit of reductions to pay its debts in a shorter time, the source has no cost;
 - if the company benefits of reductions to pay its debts in a shorter time, the source has a cost;
- c) If the necessary to be financed related to the client-credit is covered by short-term bank credits, then their real cost is used (different of interest).
- d) If the necessary to be financed related to the client-credit is covered by all sources, then depending on their contribution, the weighted average cost of resources is used.

Another aspect is the one related to the size of allotted sum. The sum that must be covered does not equal the turnover. (Van Horne & Wachowicz, 2005)

The impact on financing the operating cycle is found usually only under the form of expenses which are made up of variable costs (because amortization must not be paid, the profit is included in the price). Thus, the sum which must be covered is not related to the non-cashed turnover from the client-credit, but only to variable costs. This will be the sum that must be covered from the financing sources.

Thus, the total cost of the monetary unit of client-credit can be evaluated as it follows:

$$K_{CI} = dz_{CI} \cdot \overline{Ca_z} \cdot r_{cv} \cdot \overline{k_K} = \frac{CI}{Ca} \cdot T \cdot \frac{Ca}{T} \cdot \frac{Cv}{Ca} \cdot \frac{C_{sf}}{Cv_{sf}} \quad (14)$$

where :

$$\overline{Ca_z} = \frac{Ca}{T} \quad \text{- average daily turnover;}$$

$$r_{cv} = \frac{Cv}{Ca} \quad \text{- variable expenses ratio}$$

$$\overline{k_K} = \frac{C_{sf}}{Cv_{sf}} \quad \text{- cost of financing source}$$

The cost of client-credit is obtained by reporting the absolute value of the cost at the absolute level of the balance from clients:

$$\overline{k_{CI}} = \frac{k_{CI}}{CI} \quad (15)$$

There is also a cost related to the change in the commercial credit policy, even if this fact result of lack of liquidness:

$$K_{op} = \frac{Ca_0}{T} \cdot (\Delta dz_{CI}) \cdot (1 - rcv) \cdot \overline{k_K} \quad (16)$$

4.2. Cost of supplier-credit

Supplier-credit is a source attracted, usually it has no cost. This thing is valid only if the company does not benefit of reductions to pay its debts to suppliers in a shorter time.

But if the supplier gives reduction for the payment of the acquired goods in a shorter time, the source bears a cost, and this average cost is given by:

$$\overline{k_{dzFz}} = \left(\frac{d_{Cfz\%}}{100\% - d_{Cfz\%}} \right) \cdot \left(\frac{T}{dz_{Fz} - d_{Fzd}} \right) = \frac{Cfz - Cfzd}{Cfzd} \cdot \left(\frac{T}{\Delta dz_{Fz}} \right) \quad (17)$$

where:

$d_{Cfz\%}$ - percentage discount, relative reduction of expenses with the supplier, as result of the fact that the debt will be paid sooner;

dz_{Fz} - average duration of payment within which it does not benefit of discount;

dz_{Fzd} - average duration of payment within which it benefits of discount;

$dz_{Fz} > dz_{Fzd}$

5. CONCLUSIONS

In the last part of the article we have compared the cost of client - credit to the cost of possible financing sources and we have reached the following conclusions:

If the average cost of the working assets and of bank credits is higher than the one of the supplier-credit, there are the following situations:

a) if $k_{dzCI} > k_{dzFz}$, then the coverage of the client-credit from the supplier-credit is efficient, because a reduction of financial resources cost would be created;

b) if $k_{dzCI} = k_{dzFz}$, then the financing of supplier-credit from the client-credit is indifferent;

c) if $k_{dzCI} < k_{dzFz}$, then the coverage of the client-credit from the supplier-credit is not efficient, because an increase of financial resource cost would be created.

If the average cost of the working assets is lower than the one of bank credits and lower than the one of the supplier-credit, there are the following situations:

a) if $k_{dzCI} > k_{FR}$, then the coverage of the client-credit from the working assets is efficient, because a reduction of financial resources cost would be created;

b) if $k_{dzCI} = k_{FR}$, then the financing of supplier-credit from the working assets is indifferent;

c) if $k_{dzCI} < k_{FR}$, then the coverage of the client-credit from the working assets is not efficient, because an increase of financial resources cost would be created;

If the average cost of bank credit is lower than the one of the working assets and lower than the one of supplier-credit, there are the following situations:

- a) if $k_{dzCI} > k_{Cr}$, then the coverage of the client-credit from the credit is efficient, because a reduction of financial resources cost would be created;
- b) if $k_{dzCI} = k_{Cr}$, then the financing of supplier-credit from the credit is indifferent;
- c) if $k_{dzCI} < k_{Cr}$, then the coverage of the client-credit from the credit is not efficient, because an increase of financial resources cost would be created.

Possible future researches on this topic:

- analysis of the efficiency of resources allotted in claims towards clients;
- correlated analysis of commercial credits' duration.

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