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# FINANCING STRATEGIES FOR LEASING COMPANIES

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### Abstract

*The paper describes the financing sources for the leasing companies (self – financing, capital increases, loans, venture capital, etc). Most of the times, these sources can be combined in an efficient way that leads to the minimum cost of financing. This is recommended when the most efficient financing instrument cannot cover the entire investment need. The authors need to present a model of simulation of the financing strategies directed to the procurement of some technical equipment by a leasing company, based on a minimum cost of the capital. This algorithm was integrated in the LEASYM Software, developed in Visual Basic.Net and meant to assist the managers of the leasing companies in selecting the best financial alternatives for their clients' investment projects. The program simulates the choice of the financing sources, with the main purpose of minimizing the costs.*

### Financing Strategies for Leasing Companies

There are several methodologies that lead to the substantiation of the procurement decision in leasing selecting a certain financing source. The most popular of them is the one based on the Net Present Value (NPV) criterion.

Another alternative could be the methodology of comparative analysis based on the Total Net Present Cost (TNPC) of the financing sources, because the calculation of this indicator considers not only the acquisition cost of the good(s), but some other elements as well:

- The expenses and fees specific for each transaction;
- The fiscal economy derived from the transaction;
- The profits tax;
- The actualization factor.

This indicator considers the fiscal economy (fiscal savings) specific to each transaction, which represents a strong argument for leasing. The structure of

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the expenses excludes the registration fees, the maintenance fees or the liability insurance, as they exist no matter the financing source.

### The Cost of the Goods Procured in Leasing (Financial)

Besides the cost of the goods procured by the leasing company, the user (the client of the leasing company) needs to pay the interest rate, an administration fee and the insurance fee (if needed). The administration fee is paid once, at the beginning of the contract. The cost of the leasing operation (CT<sub>l</sub>) for the user is:

$$CT_l = P_a + Dob_l + C_{gest} + C_{asig}$$

Where:

$P_a$  = The acquisition price of the goods, ( the CIP price);

$Dob_l$  = The total interest rate levied by the leasing company, calculated by adding the monthly interest rates;

$C_{gest}$  = The administration fee, calculated once, at the beginning of the contract, as a percentage of the initial value of the contract;

$C_{asig}$  = The insurance costs; they are calculated as follows: in the first year they represent a percentage of the initial value (the acquisition price and all the fees required), and every year they decrease in proportion to a certain quote.

This cost is higher than the acquisition price with  $D_{lt} + C_g + C_{asg}$  monetary units. However, such an analysis is not efficient if the actualization and the fiscal economy are not considered. The procurement decision needs to take into consideration the the Net Present Cost, which is calculated by deducting the fiscal economy from the total cost, both of them made actual at the initial moment of the operation.

The calculation formulas for the Net Present Cost of Leasing are:

$$CT_l = P_a + Dob_{leasing} + C_{gest} + C_{asig} = Av + P_{rinc} + V_{rm} + Dob_{leasing} + C_{gest} + C_{asig}$$

$$CT_{ded\ i} = Am_i + Dob_i + C_{gest} + C_{asig\ i}$$

$$Am_i = P_a / D$$

$$Dob_i = \sum Dob_{hi} = \sum r_{dl}(\%) / 12 * Sd_{lhi}$$

$$C_{gest} = P_a * Pr_{gest}(\%)$$

$$C_{asig\ i} = P_a * Pr_{asig}(\%) \quad pt\ i = 0$$

$$C_{asig\ i} = (P_a - \sum Am_i) * Pr_{asig}(\%) \quad pt\ i \geq 1$$

$$E_{f\ i} = CT_{ded\ i} * Imp_{pr}(\%)$$

$$\implies CTN_{ded\ i} = CT_{ded\ i} - E_{f\ i}$$

$$CTN_{neded\ i} = Av \quad (pt\ i = 0) + (P_{rinc\ i} - Am_i) + V_{rm} \quad (pt\ m = n+1)$$

$$P_{rinc\ i} = P_a - Av - P_{rinc\ i-1}, \quad i \geq 1$$

$$CTN_i = CTN_{ded\ i} + CTN_{neded\ i}$$

$$CTN_{act(leasing)} = \sum CTN_i * f_{act\ i}$$

$$f_{act\ i} = 1 / (1+a)^i$$

Where:

$A_v$  = The user's contribution to the financing project (the advance payment);

$P_{rinc}$  = The financed value minus the residual value;

$V_{r_m}$  = The residual value

$n$  = The term of lease (number of years);

$i$  = The year of the contract (values from 1 to  $n$ )

$CT_{ded}$  = The total deductible cost

$A_m$  = The amortization (writing off) of the goods - it is reflected in the leasing monthly rate;

$D$  = The normal length of operation for the goods;

$r_{dl}$  = The annual interest rate;

$S_{d_{lh}}$  = The monthly balance due in the month  $h$ ;

$h$  = The month of the year (values from 1 to 12);

$Pr_{gest}$  = The administration fee;

$Pr_{asig}$  = The insurance fee;

$E_f$  = The fiscal economy for the deductible expenses;

$Imp_{pr}(\%)$  = The profits tax;  $CTN_{ded}$  = costul total net deductibil

$CTN_{neded}$  = The net total undeductible cost;

$f_{act}$  = The actualization factor;

$a$  = The actualization coefficient;

When the term of lease exceeds one year, the actualization is based on the principles of the actuarial mathematics, which means that the Total Net Present Cost is the sum of the The Annual Net Present Costs actualized with the factor corresponding to the year „ $i$ ”.

### **The Cost of the Goods Procured with Cash Payments**

The value of the investment derived from the cash payments equals the acquisition price plus the profits tax, as from the moment of acquisition the buyer becomes the owner of the goods and it will have to pay taxes, according to the legislation of each country. The insurance expenses need also to be added to the total investment. The buyer will have fiscal deductions from the acquisition price only for the amortization of the goods corresponding to the month following the one in which the payment is done. The difference (the acquisition price minus the amortization described above) will represent taxable revenues.

The calculation formulas for the Net Present Cost of the Cash Payment are:

$$CT_{ch} = P_a + Imp_{pr} + C_{asig}$$

$$CT_{ded} = A_m (1 \text{ month}) + C_{asig}$$

$$E_f = CT_{ded} * Imp_{pr}(\%)$$

$$\implies CTN_{ded} = CT_{ded} - E_f$$

$$\begin{aligned} \text{Imp}_{pr} &= P_a * \text{Imp}_{pr} (\%) \\ \text{CTN}_{neded} &= (P_a - \text{Am}) + \text{Imp}_{pr} \\ \text{CTN} &= \text{CTN}_{ded} + \text{CTN}_{neded} \\ \text{CTN}_{act(cash)} &= \text{CTN} * f_{act} \\ f_{act} &= 1 / (1+a) \end{aligned}$$

Where:

$P_a$  – The acquisition price;  
 $\text{Imp}_{pr}$  – The profits tax;  
 $C_{asig}$  – The insurance fees;  
 $\text{CT}_{ded}$  – The total deductible costs;  
 $\text{Am}$  (1 month) – The amortization;  
 $E_f$  – The fiscal economy;  
 $\text{CTN}_{neded}$  – The net total undeductible costs;  
 $\text{CTN}_{ded}$  – The net total deductible costs;  
 $\text{CTN}$  – The net total costs;  
 $f_{act}$  – The actualization factor;

Regarding the VAT (value added tax), if the user is not allowed to deduct this tax, it will appear as an additional expense, which is to be added to the net cost of the transaction.

### The Cost of the Goods Procured with a Bank Credit

This is a very popular method of acquisition, but it has several disadvantages, such as: the need for bank guarantees, the requirements for high financial performances of the applicant and sometimes the fluctuating interest rate.

The total cost of the bank credit includes all the expenses related to the acquisition (the advance payment, the cost of the feasibility study, the insurance fees, the cost of the bank guarantee, the interest rates, the administration fee) plus the taxes for the expenses paid from taxable revenues. The taxes are to be calculated subtracting the deductible expenses (the interest rates, the administration fee, the insurance, the amortization, the cost of the feasibility study) from the total expenses and multiplying the difference with the tax percentage.

The calculation formulas for the Net Present Cost of Bank Credit are:

$$\begin{aligned} \text{CT} &= P_a + \text{Dob}_{credit} + C_{gest} + C_{asig} + C_{fezab} + C_{asig\ Pty} + \text{Imp}_{pf} = \text{Av} + P_{ramasa} \\ &+ \text{Dob}_{credit} + C_{gest} + C_{asig} + C_{fezab} + C_{asig\ Pty} + \text{Imp}_{pf} \\ \text{CT}_{ded\ i} &= \text{Am}_i + \text{Dob}_i + C_{gest\ i} + C_{asig\ i} + C_{fezab\ i} + C_{asig\ Pty\ i} \\ \text{Am}_i &= P_a / D \\ \text{Dob}_i &= \sum \text{Dob}_{hi} = \sum r_d(\%) / 12 * \text{Sd}_{hi} \\ C_{gest\ i} &= (P_a - P_{ramasa\ i}) * \text{Pr}_{gest}(\%) \\ C_{risc} &= P_a * \text{Pr}_{risc}(\%) \end{aligned}$$

$$\begin{aligned}
C_{\text{asig } i} &= P_a * Pr_{\text{asig}} (\%) \text{ pt } i = 0 \\
C_{\text{asig } i} &= (P_a - \sum Am_i) * Pr_{\text{asig}} (\%) \text{ pt } i \geq 1 \\
E_{f \text{ } i} &= CT_{\text{ded } i} * Imp_{\text{pr}} (\%) \\
&\implies CTN_{\text{ded } i} = CT_{\text{ded } i} - E_{f \text{ } i} \\
CTN_{\text{neded } i} &= Av \text{ (pt } i = 0) + (P_{\text{ramasa } i} - Am_i) + Imp_{\text{pf } i} \\
P_{\text{ramasa } i} &= P_a - Av - P_{\text{ramasa } i-1}, i \geq 1 \\
CTN_i &= CTN_{\text{ded } i} + CTN_{\text{neded } i} \\
CTN_{\text{act(credit)}} &= \sum CTN_i * f_{\text{act } i} \\
f_{\text{act } i} &= 1 / (1+a)^i
\end{aligned}$$

Where:

$C_{\text{gest } i}$  = The administration fee corresponding to the year „i”; it is calculated yearly to the remaining balance;

$C_{\text{fezabi}}$  = The costs of the feasibility study (paid once, at the beginning of the contract);

$C_{\text{asig } \text{Pty}}$  = The costs of the bank guarantees;

$D$  = The normal length of operation for the goods;

$Dob_{hi}$  = The interest rate corresponding to the month „h” of the year „i”, applied to the remaining balance;

$r_d$  (%) = The annual interest rate;

$Sd_{hi}$  = The remaining balance due in the month „h” of the year „i”;

$P_{\text{ramasa}}$  = The remaining balance due;

$a$  = The actualization coefficient;

For the bank credit, the actualization coefficient equals the interest rate levied by the bank.

### **The Cost of the Goods Procured with a Supplier Credit**

In this case, the deductible expenses are: the amortization, the interest rate and the insurance rate. We assume that the Casco insurance rate is calculated for the whole value of the good in the first year, and in the second year for the unamortized value, and the financial risk insurance rate is calculated for the whole value in the both years.

The calculation formulas are, in this case, similar with the bank credit ones, the difference being that the supplier of the good is , at the same time, the creditor (instead of the bank). Generally, the suppliers use credits from banks or other financial institutions to cover the amount that will be collected in the future from the final users, in order to avoid the potential deficit derived from these operations. For the automobiles, we can state that is „fashionable” that the suppliers (importers for a defined market) set up their own leasing companies to finance the potential clients, offering better conditions than other financial institutions.

An intermediary solution between these ones would be the leasing combined with the supplier credit, which means that the leasing company is credited with the goods by the supplier and offers it to the final user. They pay instalments to the supplier as they collect the amounts due from the users. The collection rate is, generally, lower than the payment rate (usually, they collect the money monthly and pay the instalments every three months).

The calculation formulas for the Net Present Cost of Supplier Credit are:

$$CT = P_a + Dob_{furnizor} + C_{risc} + C_{asig} + C_{asig\ Pty} + Imp_{pf} = Av + P_{ramasa} + Dob_{furnizor} + C_{risc} + C_{asig} + C_{asig\ Pty} + Imp_{pf}$$

$$CT_{ded\ i} = Am_i + Dob_i + C_{risc} + C_{asig\ i} + C_{asig\ Pty\ i}$$

$$Am_i = P_a / D$$

$$Dob_{fi} = \sum Dob_{fhi} = \sum r_d(\%)/12 * Sd_{hi}$$

$$C_{risc} = P_a * Pr_{risc}(\%)$$

$$C_{asig\ i} = P_a * Pr_{asig}(\%) \quad pt\ i = 0$$

$$C_{asig\ i} = (P_a - \sum Am_i) * Pr_{asig}(\%) \quad pt\ i \geq 1$$

$$E_{f\ i} = CT_{ded\ i} * Imp_{pr}(\%)$$

$$\implies CTN_{ded\ i} = CT_{ded\ i} - E_{f\ i}$$

$$CTN_{neded\ i} = Av \quad (pt\ i = 0) + (P_{ramasa\ i} - Am_i) + Imp_{pf\ i}$$

$$P_{ramasa\ i} = P_a - Av - P_{ramasa\ i-1}, \quad i \geq 1$$

$$Imp_{pf} = (CTN - CTN_{ded}) * Imp_{pf}(\%)$$

$$CTN_i = CTN_{ded\ i} + CTN_{neded\ i}$$

$$CTN_{act(credit)} = \sum CTN_i * f_{act\ i}$$

$$f_{act\ i} = 1 / (1+a)^i$$

Where:

$Dob_{furnizor}$  = the interest rate levied by the supplier;

$C_{risc}$  = the risk fee, calculated at the beginning of the contract;

$Pr_{risc}$  = risk quote that will be applied (percent);

$Pr_{asig}$  = the insurance quote (percent) – will be calculated for the entire value of the good in the first year, and in the second year for a diminished value, depending on the insurance company;

It is very difficult to compare the total payments for the cash procurement versus the leasing operations, if we do not consider the same period of time.

In this case we need to analyze the expenses related to the use of the goods for the entire period of the location (at least the insurance fee for the next years). Usually, the cash procurement leads to a lower financial effort comparing to leasing, but this means the use of capitals obtained in the past, and not future capitals obtained from the use of the goods. In the leasing operations, for the imported goods, the VAT and the custom duties will be paid at the residual value at the end of the contract (usually, in Romania, this is 20% of the acquisition value). For the cash procurement, these payments are to be done in the moment of the transaction, and the taxes are calculated to the entire value of the goods.

Based on this methodology, we developed a software and experimented it in several leasing companies. This way, we noticed that, applying the net present cost criteria, the bank credit is recommended (if the user has the necessary bank guarantees, the required financial performances and, of course, if the interest rate for the credit is lower than the leasing interest rate).

If we consider the total present payments, we find the bank credit to be more efficient as well. This happens when the leasing company finances the procurement of the goods using a bank credit. All the expenses related to the operation and the profits are recovered from the instalments paid by the final users.

The structure of the expenses related to the bank credit is very similar to the leasing operations. The exceptions for the leasing operations are the addition of the residual value to the total expenses, but there are no expenses for the feasibility study or with the insurance of the bank guarantees.

The interest rate for leasing is usually higher than the bank credit one, and the contract fee used in leasing operations is similar to the administration fee, levied by banks for a credit. The leasing operations would be more attractive if the leasing company financed it from its own capitals. For the imported goods, the leasing is preferred if the fiscal facilities compensate the cost difference.

We conclude that the advantages of the leasing operations are not related only to the payments, but to the complex facilities offered to the clients. If the interest rates for leasing would be lowered, the leasing was more efficient even to the respect of the payments made by the user. If the goods are imported, than leasing is preferred, if the custom duties apply. The former profit tax reductions in Romania decreased the leasing attractiveness.