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Leasing as a Form of Financing Development Projects

Leasing jako forma finansowania projektów rozwojowych

THE NOTION AND ECONOMIC IMPORTANCE OF LEASING

The purpose of all business operating in market economy is to maximise profits. The achievement of this purpose requires making beneficial investment decisions which generate profitable cash flows. In order to start a planned investment one needs the availability of finance. The capital which finances current activities of an enterprise comes from its owner (owners) and its creditors. Therefore the capital of a company can be divided into two categories: own capital (investment of the owner, partners, investments of shareholders, stock capital etc.) and external capital, which consists of borrowed funds, loans and other liabilities.

It is a common practice in countries with market economy to finance development projects with external capital rather than with own savings accumulated through years. The external finances can be obtained by a company on the money and capital markets. Leasing is one of the forms of financing, which facilitates businesses access to investment resources without having to buy them.

Leasing is an agreement, on the basis of which one party (lessor) gives the other party (lessee) the right to use certain material good for agreed time in exchange for agreed payment (leasing instalments).[1]

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[1] E. Nowak, M. Sobczyk, *Rachunek wartości pieniądza w czasie*, Wyd. UMCS, Lublin 1995, p. 79.

Practically any fixed asset can be subject of a leasing agreement: means of investment, (movable and immovable) and also consumption goods of durable use. Means of investment may include computer equipment and software, production machines, office equipment (telex, photocopier, fax machine), technological lines, cars etc. Leasing of estates applies to factory buildings and constructions, storages, shops.

Leasing has appeared on the world market as a result of two contradictory tendencies: technological progress which was forcing producers to modernise their means of production which were quickly getting old (required high capital investments) and difficulties with selling the produced goods. In economy leasing came to use in the USA in 1952, when in San Francisco a company called "United States Leasing Corporation" was set up for business. The company leased means of production for food processing industry.[2] The statistics reveal that at present approximately 30% of investments in the United States of America are based on leasing.[3] High turnovers in leasing transactions are also reported in England (approx. 23%), Spain (approx. 17%), France (approx. 16%), Italy (approx. 15.8%), and Germany (approx. 14%).[4] So we can safely state that at present leasing is a widely used economic instrument. Companies belonging to the European Federation of Leasing Companies (LEASEUROPE) which has approx. 980 member companies have reached – in the beginning of the 90s – turnover of approx. 76 bln US dollars.

In Poland controlled by centrally planned economy leasing did not have any significant role. On domestic market leasing was in little extent used by construction companies. There were also some international leasing transactions mainly involving production machines for textile, industry, metal industry, food and vegetable processing and timber processing.[5] After 1989 the importance of leasing has grown significantly (and is still growing). First of all the number of leasing companies has increased. These companies deal with leasing of machines, devices, cars and other investment resources in professional manner. It is estimated that at present there are approximately 100 leasing companies in Poland. In 1994 approximately 35 thousand leasing agreements were signed in Poland and their value amounted to 6.5 trillion old zlotys.[6] Thanks to leasing in-

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[2] A. Oniszczuk, E. Skrzypek, *Leasing*, PTE, Lublin 1992, p. 5.

[3] K. Kruczalak, *Leasing – ogólna charakterystyka*, "Prawo Przedsiębiorcy" 1995, no 17–18, p. 32.

[4] *Ibid.*, p. 32.

[5] J. Poczobutt, *Wszystko o leasingu*, "Przegląd Podatkowy" 1991, no 3, p. 12.

[6] G. Cieloch, *Leasingowe abc*, "Leasing" 1995, no 6, p. 8.

struments the Polish computer market has developed, numerous production companies, transportation companies have appeared, trade and catering businesses have obtained extra finances.

The biggest market share of all leasing transactions in Poland belongs to European Leasing Fund (25.8%), then there is Bel Leasing (10.1%), Carcade Invest (9.1%) and BRE Services (8.6%).[7] The value of goods leased by the above companies in 1994 was respectively: 149.9 mln zl, 58.9 mln zl, 52.5 mln zl, and 50 mln zl (in new currency). 10146 leasing contracts were signed in 1994 with European Leasing Fund, 2652 with Bel Leasing, 2666 with Carcade Invest (there is no information about the number of leasing contracts signed by BRE Services).

Leasing as a form of financing development projects has specific features. It allows to finance with external funds a larger share or even whole costs of investments made by lessees. Even the costs of delivery and installation of the leased equipment can be financed through leasing agreement. Thanks to that, the lessee can use his capital reserve for other purposes. Costs of using the leased equipment are paid with profits generated by the use of that equipment. If leasing accompanies sales, then it accelerates the exchange of goods into money and supports the process of reproducing capital. In longer periods leasing stabilises the conditions in which the lessee operates and makes it easier to him to forecast his expenditures. It is so because the terms of repayment of leasing instalments are adjusted to the planned benefits of the user of the leased equipment. It is also very important for the lessees that they have greater ability to adjust their production or services offer to the pace of technological progress. In the situation when the leased equipment is quickly getting used-out in economic terms, it may also be easier to exchange it into more modern equipment if it is only leased and not owned by the company. While using leasing one may also avoid costs related to the sale of old or simply redundant equipment.

Leasing also brings benefits for the lessor. He gets paid for the equipment and thanks to the leasing system the demand for goods he is selling increases. Leasing can be used by all economic subjects no matter what is their form of ownership, so they can be companies with legal status (limited companies, stock companies, companies with the sleeping partner), private companies owned by one person, civil companies, associations and other organisations involved in economic activity.

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[7] L. Czarnecki, *Ranking polskich firm leasingowych - 1994*, "Leasing" 1995, no 5, p. 14.

Bank loans cannot replace leasing. Banks are not prepared to service a big number of potential lessees. Moreover Banks require collateral for their loans, which cannot always be offered by a customer. Leasing agreements are secured by the very object of leasing. Loan granting procedures in banks are quite lengthy (they can last up to several weeks). It is also important that leasing can be deducted from taxes.

The drawback of leasing is the fact, that despite making payments which can be even higher than the initial value of the leased object, the lessee does not automatically purchase that object. Also the range of rights of the lessee in case of his delay in fulfilling all the terms of the contract is quite narrow, whereas the lessor has plenty of rights. In extreme cases the lessor even has the right to break the agreement and take immediate actions. Despite the above drawbacks leasing is a big opportunity to modernise the economy through the transfer of techniques and technologies. Thanks to leasing numerous companies can faster increase the value of their own capital and accelerate their development.

TYPES OF LEASING

Leasing is an attractive solution also because it can have many forms. The International Accounting Standard number 17, which regulates the principles of accounting treatment of leasing agreements, distinguishes two basic kinds of leasing: financial (capital, proper) leasing and operational (current) leasing.[8] We are dealing with financial leasing when the lessor allows the lessee to use an object during the period of that objects technical longevity (i.e. the time during which there is a technical ability to use that thing). Specialist machines and devices are usually subject of financial leasing. Leasing agreements of this kind are usually signed for the period of 3 to 10 years (sometimes even longer). An important element of financial leasing is the fact, that the costs of maintaining of the subject of leasing are – in principle – paid by the lessee. In Polish economic reality financial leasing has minor importance.

In operational leasing – unlike in the case of financial leasing. The subject of leasing can be used by many subsequent lessees. It means that lessee uses the objects of lease for a period shorter than the time of its economic usefulness. All costs related to the object of leasing are paid by the lessor. It is also his duty to maintain the object in appropriate condition.

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[8] M. Gmytrasiewicz, K. Szczepański, *Leasing w Polsce*, Wyd. Prawnicze, Warsaw 1992, p. 31.

From the point of view of the two parties of leasing agreement one can distinguish direct and indirect leasing.[9] In direct leasing the transaction is carried out between two parties: the owner of the object of lease (who frequently is its producer) and the user, that is the lessee. When there is a mid-agent (specialist leasing company) between the lessor and the lease, then we are dealing with indirect leasing. The mid-agent purchases the object of lease from its owner and leases it to the customer. Leasing companies frequently do not have sufficient capital to finance such transactions. Therefore they frequently use bank loans. So in fact there are four parities involved in transactions of this type: a bank, leasing company, supplier of equipment and lessee. If a leasing transaction directly involves a financing institution (the lender) it is called a leverage leasing.

According to criteria of responsibilities of each party of leasing agreement one can distinguish full and clear leasing. In case of clear leasing costs of service, maintenance, repair and insurance related to the object of leasing are paid by the lessee. In case of full leasing all these costs are paid by the lessor.

The subject of leasing can also be used as a criteria for categorising leasing. According to this criteria we can distinguish the following leasing groups:

● leasing of organised production facilities, with all the machines and equipment;

● leasing of single pieces of equipment;

● revolving leasing, when there is a possibility to replace the leased object with a new one;

● defined leasing, when the possibility of replacing the leased object with a new one is not taken into account;

● first hand leasing, when a lessee in the first user of the object;

● second hand leasing, when a lessee receives a used piece of equipment (in the best case he is the second user of the equipment).

The increasing range of leasing cases the emergence of more and more sublime forms of leasing. As an example we can give reverse or Norwegian leasing. In reverse leasing the owner sells his property (e.g. an estate, land, production equipment) and simultaneously signs a leasing agreement with the buyer. In such a case the buyer of the property becomes the lessor and its former owner becomes the lessee. This type of transaction allows the former owner to continue using the property and relieves him from having to pay high capital costs. This type of transaction increases financial liquidity of the company, which converts the capital frozen in fixed assets into cash (working capital).

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[9] L. Lewandowska, T. Janusz, *Leasing*, Res Polona, Łódź 1994, p. 18.

The funds obtained from the sale can be used by the company for financing current operations, and the company is still the user of the sold property.

In case of Norwegian leasing – which is a special form of reverse leasing – the leasing payments are all made in advance for the whole period of the agreement.[10] Lack of spreading the payments in time eliminates the need to take into account the future value of cash. Thanks to that both parties of the leasing agreement avoid the impact of inflation rate. Additional benefit of Norwegian leasing is its simple transaction procedure and tax benefits (all the leasing rent is treated as a cost of income).

CALCULATION OF LEASING PAYMENTS

The following parameters affect the amount of leasing payments:

1) length of the time of using the object of lease (the longer the leasing period, the higher amount of leasing payments);

2) the amount of initial payment (higher downpayment, lower instalments);

3) interest rate;

4) the amount of lessors commission;

5) the size of costs related to leasing (e.g. appraisal costs, notary payment, insurance costs);

6) the way leasing payments are made (ahead of a period, after a period);

7) the price of purchase of the leased asset (in agreements with a purchase option).

Leasing payments include:

a) properly calculated, so called decent value of the leased object, e.g. the value for which the object can be exchanged between the seller and the buyer;

b) leasing payments for the whole period of leasing agreement.

The first element of leasing payments can be described as return of capital lent by the lessor, the second element is the rate of return of that capital. It should be mentioned that leasing payments are not – in general – re-evaluated. This means that they are set when the leasing agreement is signed and do not change during the leasing period. The first instalment is usually paid object of lease handled to the user and the following payments are usually paid on a monthly basis. That is related to the lending risk taken by the lessor. Monthly payments

[10] P. Kaczmarek, *O leasingu norweskim*, "Leasing" 1995, no 4, p. 14–16.

allow more effective financial control of the lessee, which would not be as effective if the payments were not as frequent.

The amount of leasing payments may cover general costs of the lessor (costs of purchase or producing of the object of lease, interests, administration costs and calculated profit) or they may not. In the first case we call it leasing with full amortisation, in the second – leasing with partial amortisation of the object of lease.

Calculation of the amount of leasing payments is based on the principle of multiplying the value of capital involved in the economic activity. A discount calculation is used, which allows the lessor to determine the present value of future financial incomes, which are a sum of all payments of leasing instalments.

Let N mean the number of leasing instalments of equal value specified in the agreement, r – interest rate and R – leasing instalment. Future value of leasing payments made in the beginning of each period (advance payments) is:[11]

$$R(1+r) + R(1+r)^2 + \ldots + R(1+r)^N = Rq\frac{q^N-1}{q-1}, \; q \neq 1$$

where $q = 1 + r$.

When we discount the future value of the sum of N leasing payments with a discount formula $(1+r)^{-N} = q^{-N}$, we receive present value of leasing payments

$$Rq\frac{q^N-1}{q-1} \cdot q^{-N} = Rq\frac{1-q^{-N}}{q-1}$$

To make a transaction profitable for the lessor, the present value of the sum of leasing payments should equal the value of leasing asset, that is:

$$K = Rq\frac{1-q^{-N}}{q-1}$$

where K is the value of leased asset.

Thus, the amount of leasing instalment can be described with the following formula:

$$R = \frac{K(q-1)}{q(1-q^{-N})} = \frac{K(q-1)}{q-q^{1-N}}$$

When leasing payments are made in the end of month or agreed period (payment without advance), future value of the sum of all payments is:

[11] M. Dobija, J. Kuchmacz, J. Taborek, *Dyskonto, kredyt, renta*, Centrum Kreowania Liderów, Skierniewice 1992, p. 13.

$$R + R\,(1+r) + R\,(1+r)^2 + \ldots + R\,(1+r)^{N-1} = Rq\frac{q^N - 1}{q - 1},\; q \neq 1$$

In this case present value of the sum of the leasing instalments is:

$$R\frac{q^N - 1}{q - 1} \cdot q^{-N} = R\frac{1 - q^N}{q - 1}$$

The amount of leasing instalment in case of payments without advance is calculated as:

$$Kq^N = R\frac{q^N - 1}{q - 1},\; R = \frac{Kq^{-N}(q - 1)}{q^N - 1}$$

The above considerations show how important in calculating leasing payments is the interest rate r (in case of discount calculations it is called a discount rate). Discount rate is defined as the amount used by investors to discount future incomes from an investment project in order to determine their present value.[12] That rate is a function of three elements: rate of return (profit), inflation rate and the risk rate. Rate of return determines the pace of increasing capital, which is expected by the investor. The basis for determining this rate is the interest rate of refinancing loan offered by the Central Bank. The inflation rate is related to cash value used for measuring the value of goods. The forecast inflation rate increases the discount rate. The risk premium (risk rate) is involved in cases when income from a project is not certain. It is obvious that it is better to invest in safe projects. But if an investor decides to make a risky transaction, he expects some compensation in exchange (bonus for the risk). Thus finally the discount rate can be presented as:

$$r = z + i + s$$

where z is investor's rate of return, i – inflation rate and s – risk rate (all the figures are expresssed in percentages).

The above presented methods of calculating leasing instalments assumed full use (amortisation) of the object of lease of the period of the agreement. However the object of lease can still retain some value (the end value of the object of leasing is different from zero). This fact should be taken into account in calculations of leasing instalments. When leasing payments are made in advance, the amount of single instalment is calculated as follows[13]:

[12] M. Dobija, E. Smaga, *Zastosowania matematyki finansowej*, AE, Kraków 1993, p. 11–12.
[13] W. Dębski, K. Kozera, *Leasing czy kredyt*, Poltext, Warszawa 1991, p. 24.

$$R = (K - W_K) \frac{q - 1}{q - q^{1-N}} + W_K(q - 1)$$

and in case of payments without advance the formula is:

$$R = (K - W_K) \frac{q^N (q - 1)}{q^N - 1} + W_K(q - 1)$$

where W_K is the end, non-amortised value of the object. It is obvious that in case of partial remission of the object, the leasing instalment is lower than in case of its full remission.

Each leasing instalment (R) consists of two elements: principal payment (T) and interest payment (O), thus:

$$R = T + O$$

The capital part of the instalment reflects partial repayment of the value of leased object, whereas the interest payment is related to the interest costs of each instalment paid by the lessee. For taxation purposes it is necessary to divide the total instalment payment into capital and interests. That can be done in several ways, one of them is presented below.

Let us assume that the value of leased object is 120 000 zl. The total amount of leasing payments has been determined as 156 000 zl. Instalments are due each month.

According to previous assumptions the amount of monthly leasing payment is:

$$R = 156\ 000 : 12 = 13\ 000\ \text{zl}$$

Total interest costs in the analysed case are the difference between the total leasing payments and the value of the object of lease, so they are: 156 000 – 120 000 = 36 000 zl.

The amount of interest included in each instalment can be calculated on the basis of a method of summing the sequence of numbers.[14] Summing the sequence of numbers is expressed by the following formula:

$$S_n = \frac{N(N + 1)}{2}$$

[14] W. Pazio, *Jak gospodarować finansami. Ekonomiczne podstawy biznesu*, PWN, Warszawa 1994, p. 138.

In our case with twelve leasing instalments the sum of sequence of numbers is:

$$S_n = \frac{12 \cdot 13}{2} = 78$$

The amount of interest paid with each leasing instalment is calculated as:

$$O_n = \frac{W_o}{S_n} \cdot k$$

where k is the number of remaining leasing instalments.

Total amount of interest is: $W_o = 36\ 000$ zl. Thus the interest part of each leasing instalments is calculated as follows:

$$O_1 = \frac{36\ 000}{78} \cdot 12 = 5\ 538.46 \text{ zl}$$

$$O_2 = \frac{36\ 000}{78} \cdot 11 = 5\ 076.92 \text{ zl}$$

$$O_3 = \frac{36\ 000}{78} \cdot 10 = 4\ 615.38 \text{ zl}$$

$$O_4 = \frac{36\ 000}{78} \cdot 9 = 4\ 153.85 \text{ zl}$$

$$O_5 = \frac{36\ 000}{78} \cdot 8 = 3\ 692.31 \text{ zl}$$

$$O_6 = \frac{36\ 000}{78} \cdot 7 = 3\ 230.77 \text{ zl}$$

$$O_7 = \frac{36\ 000}{78} \cdot 6 = 2\ 769.23 \text{ zl}$$

$$O_8 = \frac{36\ 000}{78} \cdot 5 = 2\ 307.69 \text{ zl}$$

$$O_9 = \frac{36\ 000}{78} \cdot 4 = 1\ 846.15 \text{ zl}$$

$$O_{10} = \frac{36\ 000}{78} \cdot 3 = 1\ 384.62 \text{ zl}$$

$$O_{11} = \frac{36\ 000}{78} \cdot 2 = 923.08 \text{ zl}$$

$$O_{12} = \frac{36\ 000}{78} \cdot 1 = 461.54 \text{ zl}$$

$$\Sigma \quad 36\ 000.00 \text{ zl}$$

As the above calculations show, according to this method of separating interests from the amount of individual instalment payments the amount of interests paid with each next instalment decreases. This means that the capital part of payment, which is the second element of leasing instalment, increses with each payment. This can be simply calculated as the difference between full leasing instalment and the amount of interests included in each instalment:

$$T_n = R - O_n$$

$T_1 = 13\ 000 - 5\ 538.64 = 7\ 461.36\ zl$
$T_2 = 13\ 000 - 5\ 076.92 = 7\ 923.08\ zl$
$T_3 = 13\ 000 - 4\ 615.38 = 8\ 384.62\ zl$
$T_4 = 13\ 000 - 4\ 153.85 = 8\ 846.15\ zl$
$T_5 = 13\ 000 - 3\ 692.31 = 9\ 307.69\ zl$
$T_6 = 13\ 000 - 3\ 230.77 = 9\ 769.23\ zl$
$T_7 = 13\ 000 - 2\ 769.23 = 10\ 230.77\ zl$
$T_8 = 13\ 000 - 2\ 307.69 = 10\ 692.31\ zl$
$T_9 = 13\ 000 - 1\ 846.15 = 11\ 153.85\ zl$
$T_{10} = 13\ 000 - 1\ 384.62 = 11\ 615.38\ zl$
$T_{11} = 13\ 000 - 923.08 = 12\ 076.92\ zl$
$T_{12} = 13\ 000 - 461.54 = 12\ 538.46\ zl$

Σ 120 000.00 zl

The above presented method of calculating leasing payments should not be treated as the only possible one. Other solutions and methods of calculating can also be used and agreed upon in the leasing agreement.

For example a leasing agreement may assume using a fixed leasing instalment and variable (in time) interest rate. That method of calculation protects the lessor from the risk related to inflation. There is a possibility then, to adjust the interest rate applied to the leasing transaction to the changes in the environment (prices, bank interest rate etc.).

STRESZCZENIE

Jedną z form finansowania przedsięwzięć rozwojowych podmiotów gospodarczych jest leasing. Pozwala on na rozszerzenie działalności firm, zwiększenie poziomu produkcji i usług, unowocześnienie potencjału produkcyjnego, wprowadzenie nowych technologii itp.

W artykule zwrócono uwagę na znaczenie leasingu w działalności firm, jego rodzaje i możliwości wykorzystania w gospodarce. Istotną część artykułu stanowi prezentacja kalkulacji opłat (rat) leasingowych.