

Risk Management
for

Non-Banking Financial Institutions

Portfolio Approach

Application for Leasing Companies



Definition of Risk

- *Risk is represented by the likelihood that the reality differs from initial expectations*
- For financial institutions, the most important risk is the Risk of Default, Although the best customer is the customer that pays with delays, the default risk occurs when a customer discontinued payments for a certain period of time (and the agreement is cancelled)



General Approach

- Financial institutions seek to establish whether the applicants are **capable and willing** to pay-back the principal and interests,
- Furthermore, for unexpected events – when customers are not both **capable and willing** to fulfill their obligations from the loan agreement – additional **collateral** is required (*exit strategy*),



Risk Analysis

- Each application is analyzed based on the 3C system:
 - 1, Capacity
 - 2, Character
 - 3, Collateral



3C System – CAPACITY

Can the customer to repay the principal plus interests?

- Based on the estimated incomes and expenses, the customer' solvability is examined and the maximum credit limit is determined



3C System – CHARACTER

Although the customer has the capacity, is s/he willing to repay the loan plus interests?

- The customer previous behavior is examined – such as credit history & payment performance – and the permanence at the current job and current residence



3C System – COLLATERAL

In case the customer will not be able or not be willing to repay the loan plus interests, how are we going to recover our claims?

- A list of agreed collaterals, consisting of eligible assets, such as bank accounts, securities or real estates, to cover the potential losses in case a default event occurs



Risk of Default

INTRINSIC RISK:

(under the customer control)

- Timely payments
- Over-indebtdtness
- Assets protection (insurance)
- Monthly incomes and expenses management

EXTRINSIC RISK:

(out of the customer control)

- Income stability (based on current job stability)
- Expense stability (for instance, the monthly payments can increase due to currency risk involved)



Potential Losses Assessment

- The estimated losses can be calculated based on the formula presented below:

$$\mathbf{E(L) = PD * LGD * EAD}$$

where:

- E(L) – Estimated Loss
- PD – Probability of default
- LGD – Loss Given Default, the percentage of the unrecoverable claims in case of default, i.e, 1 – recovery rate
- EAD – Exposure at Default, the total amount of claims when the default event occurs



PD – Probability of Default

- According to BASEL II, a customer is on default when a material debt is unpaid, in full, for 90 days, Under these circumstances, the lender can cancel the leasing agreement
- PD is the percentage of the overdue invoices - with at least 90 days delay – in total claims
- PD is correlated with macroeconomic cycle, Thus, during expansion periods PD decreases while during recession periods PD increases



LGD – Loss Given Default

- LGD is expressed as a percentage of total claims (Exposure at Default)
- LGD is computed as $1 - \text{Recovery Rate}\%$
- To estimate this indicator, all incomes and expenses that occur after the cancellation of the leasing agreement and during the recovery process are considered
- The future cashed-in or paid-out amounts are discounted with the afferent interest rate
- Certain European studies shows that LGD for commercial loans are between 31% and 40% while for consumer loans the value is around 27%



Risk Management

PASSIVE Management ACTIVE Management

Individual Approach

The customers are ranked in the same risk category and are offered same interest rate

Portfolio Approach

The customers are ranked in different risk categories and are offered different interest rates



PASSIVE Management

The Individual Approach assumes a detailed analysis of each factor in the 3C System

Advantages:

- Only the customers that prove their ability and willingness to repay and offer adequate collateral
- Low risk of the customers portfolio
- Relatively low expenses with follow-up and debts recovery processes

Disadvantages:

- This market segment, having high quality customers, is quite narrow
- The tough competition on this market segment causes a low yield rate (the interest rate is very low)
- Low growth potential, market share at risk



ACTIVE Management

The Portfolio Approach assumes a global analysis of each factor in the 3C System riscului, at customers group level

Advantages:

- The customers that are not able to prove that they can and are willing to pay and customers that are not offering adequate collateral CAN be financed
- Low competition on this segment
- High growth potential
- High profitability
- Lower analysis-related expenses
- Quick answer to the customers

Disadvantages:

- The customer portfolio has a higher risk, especially of extrinsic type (the portfolio is more sensitive to macroeconomic developments)
- Relatively high expenses with follow-up and debts recovery processes
- The increase of fixed costs, not correlated with a similar incomes increase, can adversely affect the financial performance



Portfolio Approach

- The customers are ranked in risk categories, function of certain predetermined criteria, based on a scoring method
- The credit scoring system should consider the *worst case scenario* and can allow for a financing based exclusively on collateral
- As a hedging tool against the risk of default, a risk premium – depending on the customer risk category – is included in the nominal (offered) interest rate



Interest Rate with default risk

- As an example, for customers within risk category C having an estimated default loss **d** of 2.78%, as the percentage of unrecoverable claims for customers in this risk category, and based on a standard interest rate **n** of 7% per year, the nominal interest rate **r** which should be offered to C category customers is:

$$r = (1 + n) / (1 - d) - 1$$

- Hence, $r = 10.06\%$. Thus, even if $d=2.78\%$ of total claims are lost, the interest incomes from C customers who pay cover the losses generated by the other C customers and secure an average return equal to standard interest rate of 7% p.a. ($d\% = PD\% * LGD\%$)
- In this example, the risk premium **p**, included in the interest rate, is 3.06% ($p = r - n$),



Practical Example

- A leasing company has the below mentioned portfolio of customers, ranked on risk categories:

Risk category	EAD	Weight	PD	LGD	Losses
A	25.500.000	15%	1.25%	60.0%	191.250
B	93.500.000	55%	3.75%	50.0%	1.753.125
C	51.000.000	30%	5.00%	40.0%	1.020.000
Total	170.000.000	100%	3.75%	48.5%	2.964.375



Active Interest Rate

- Assuming that the leasing company is refinancing at a passive interest rate of 5.5% (EURIBOR6m + 175bps) and the weight of own funds in total capital is 14%,
- The weighted average cost of capital is 4.73%
- For a preferred 2% margin, the expected active interest rate is 6.73%



Hedging with risk premium

As a result of potential losses estimates, a premium risk is included in the interest rate depending on the customer's risk category:

Risk category	Weight	Interest w/o risk	Losses - d%	Interest with risk
A	15%	6.73%	0.750%	7.54%
B	55%	6.73%	1.875%	8.03%
C	30%	6.73%	2.000%	8.16%
Total	100%	6.73%	1.744%	7.88%



Conclusions

- The risk of default should be estimated before granting any financing. It is recommended to use, at least, a 5 years data series, covering the entire macroeconomic cycle
- The customers should be ranked function of risk, otherwise a competitive advantage is lost: the good customers choose other financial institution which has a lower interest rate while the bad customers are attracted by the relatively lower interest rate
- Any financing decision should consider possible scenarios and their likelihood of default occurrence, as well as recovery rate
- As for the leasing agreements, it is advisable to assign the agreement to another applicant rather than to cancel the agreement and sell the asset on the second-hand market
- To manage the risk, the lender should take into account all portfolio effects, the structure of assets and liabilities and the macroeconomic forecasts for the examined time horizon