

Making a loan of this type resolves down to an estimate of the probability of default, the Potential default loss, the rate the lender needs to cover the cost of finance in the inter-bank market plus an additional charge for bearing the risk attaching to the loan.

The probability of default on interest payments is determined by the expected annual cash flow after interest payments and the volatility of that residual cash flow. If, on an annual basis, that cash flow falls below zero then default is deemed to occur.

The next most important issue for a lender is the potential recoverability of its borrowing. This will be governed by a number of factors:

the percentage of the loan covered by the firm's net assets excluding the loan,

the liquidity of those assets under forced sale, the market demand for these assets (and hence their price) and any director's or other guarantees that may be in place.

If the net assets exceed the value of the outstanding *loan then* default will not occur as it would be possible for the firm to liquidate some of the surplus asset value to service the debt.

In this case the probability of recovery is 90% which implies a loss of 10% of the loan in the event of default. When estimating its potential loss the bank will calculate the present value of the outcomes over a year of each £1 invested discounting at the risk free rate plus the additional rate of return it requires as compensation for bearing the risk of default.

$$R_d = (1 + r_f + 0.0064 / (1 - pr)) + (pr * Recovery) - 1$$

To summarise, the bank requires 5.5% to cover its own cost of finance on the money market, 2.16% to cover the expected loss on the loan given the probability of default and the potential for recovery and 0.034% as compensation for carrying the risk attaching to the loan.

In practice the estimation of default probability and recoverability will depend upon a number of judgements about the credit-worthiness of the business, an assessment of the business plan and the willingness of the lender to finance a high risk business of this type