AFIN8003 - Workshop 7

Banking and Financial Intermediation

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2025-05-01

1 MCQ

1. A method of measuring loan concentration by tracking credit ratings of firms in particular classes for unusual declines is known as:

   ☐ concentration risk
   ☐ migration analysis
   ☐ diversification analysis
   ☐ minimum risk analysis

2. The measure used to reflect the historic experience of a pool of loans in terms of their credit-rating migration over time is a:

   ☐ credit swap
   ☐ migration matrix
   ☐ concentration limit
   ☐ minimum risk analysis

3. Management is unwilling to permit losses exceeding 5 per cent of an FI's capital, and it estimates that the amount lost per dollar of defaulted loans is 20 cents. What is the maximum amount of loans to a single sector as a per cent of capital?

   ☐ 2.5%
   ☐ 25%
   ☐ 4%
   ☐ 1%

4. The combination of assets that reduces the variance of portfolio returns to the lowest feasible level is the:

   ☐ efficient frontier
   ☐ least cost portfolio
   ☐ minimum risk portfolio
   ☐ maximum return portfolio

5. The risk of a loan (σ_i) is measured as

   ☐ 1-LGD
   ☐ 1-EDG
   ☐ volatility of the default rate $\times$ LGD
   ☐ $X_i - R_i$

6. A measure of the sensitivity of loan losses in a particular business sector relative to the losses in an FI's portfolio is:

   ☐ system loan loss risk

□ standard deviation of losses
□ minimum risk portfolio
□ migration analysis

7. If a bank sold a credit forward and at the maturity if the actual credit spread CS_T on the bond is greater than the credit spread on the forward CS_F then:

□ the bank pays the counterparty $(CS_F - CS_T) \times MD \times A$
□ the bank pays $(CS_T - CS_F) \times MD \times A$
□ the bank receives $(CS_F - CS_T) \times MD \times A$
□ the bank receives $(CS_T - CS_F) \times MD \times A$

8. A swap that involves swapping an obligation to pay interest, at a fixed or floating rate, for payments representing the total return on a loanor a bond of a specified amount is a(n):

□ plain vanilla swap
□ off-market swap
□ fixed-floating swap
□ total return swap

2 Short answer questions

2.1 Q1

How do loan portfolio risks differ from individual loan risks?

2.2 Q2

Why is it difficult for small banks, credit unions and building societies to measure credit risk using modern portfolio theory?

2.3 Q3

CountrySide Bank uses the Moody's Analytics RiskFrontier model to evaluate the risk–return characteristics of the loans in its portfolio. A specific $10 million loan earns 2 per cent per year in fees, and the loan is priced at a 4 per cent spread over the cost of funds for the bank. For collateral considerations, the loss to the bank if the borrower defaults will be 20 per cent of the loan's face value. The expected probability of default is 3 per cent. What is the anticipated return on this loan? What is the risk of the loan?

2.4 Q4

Using regression analysis on historical loan losses, a bank has estimated the following:

$$XC = 0.002 + 0.8XL$$
$$XH = 0.003 + 1.8XL$$

where

- XC = loss rate in the business sector
- XH = loss rate in the consumer (household) sector
- XL = loss rate for its total loan portfolio

(a) If the bank's total loan loss rates increase by 10 per cent, what are the increases in the expected loss rates in the business and consumer sectors?
(b) In which sector should the bank limit its loans, and why?

2.5 Q5

How is selling a credit forward similar to buying a put option?