



EXAMINATION

27 October 2023

Subject F107/B100 — Banking Fellowship Principles

Time allowed: Three hours and twenty minutes (which includes five minutes for downloading and uploading your answer document)

Total marks: 100

INSTRUCTIONS TO THE CANDIDATE

1. Ensure that you are logged in and authenticated through Examity before you attempt the examination.
2. The question paper is only available in the ASSA Exam Platform as a PDF download and may not be printed. Copy/paste of questions or parts thereof is allowed from the question paper to your Word answer document only.
3. Download the Word answer document template from the ASSA Exam Platform. Save this Word answer document on your desktop using your Candidate Number as filename. You are required to submit your answers in Word format ONLY using this document. No answers in any other format (e.g., handwritten) will be accepted. Save work regularly.
4. Ensure that your Candidate Number appears in the “header” of your Word answer document. [Double-click on the header at the top of the Word document, input your Candidate Number only in the header, then press “Esc” to close the header.] **Do not use your name or member number anywhere in your Word answer document.**
5. You may not access any file from your computer, use any other computer app (e.g., Email or Excel) or open any other browser during the examination. Nor may you use Grammarly, Grammarly Premium or similar add-ins.
6. You may not use any other material (e.g., a Formulae and Tables book) during the examination. Any such information that may be required will be provided to you within the examination.
7. You are strongly encouraged to use the first 15 minutes as reading time only, however, you may start answering the paper whenever you are ready.
8. Mark allocations are shown in brackets.
9. Attempt all six (6) questions.
10. Show calculations where appropriate. You may use blank paper to carry out rough work calculations. You may use a calculator from the approved list only.
11. Upload your Word answer document only into the ASSA Exam Platform. Once you have uploaded your document, you must click on **Finish Attempt** to save your document. You will still be allowed to go back and make changes (**Review Attempt**) if you have time.
12. Once you are satisfied with your uploaded document, click **Finish attempt** and **Finish all and Submit**. Once you have submitted you will not be able to make any changes.
13. **You must submit your Word answer document BEFORE the end of the allotted examination time.** You must stop writing and start uploading during the last five minutes. Take this into account when planning your review and submission. There will be no time announcements.

Note: The Actuarial Society of South Africa will not be held responsible for loss of data where candidates have not followed instructions as set out above.

END OF INSTRUCTIONS

QUESTION 1

Bank TP is a relatively new bank that has traditionally focused on the lower income segment of the market. Bank TP offers a range of retail products, which include personal loans and other types of unsecured lending. As the bank's loan portfolio has continued to grow, you have been recruited to help Bank TP explore more sophisticated pricing models.

- i. Define tactical pricing and provide examples of various tactics. [2]
- ii. In order to manage its total income, Bank TP will need to ensure that its pricing is adequate to cover various aspects of its lending. Outline the factors considered in determining the profit requirements as part of loan product pricing. [3]
- iii. Describe the concept of credit cut-off decisions analysis and its role in risk-based pricing within a bank's lending operations. Include how this analysis is conducted and the factors considered. [5]
- iv. During the course of the year there have been significant interest rate rises due to monetary policy decisions to control rising inflation rates in the country. Thanks to your work, your pricing model is rapidly able to assess changes in credit risk due to changing macroeconomic conditions. C1 and C2 represent a set of customers originated using your pricing model under the pre- and post-stress central bank rate changes respectively. Briefly discuss the implications on Bank TP's portfolio and credit risk management decisioning. [5]

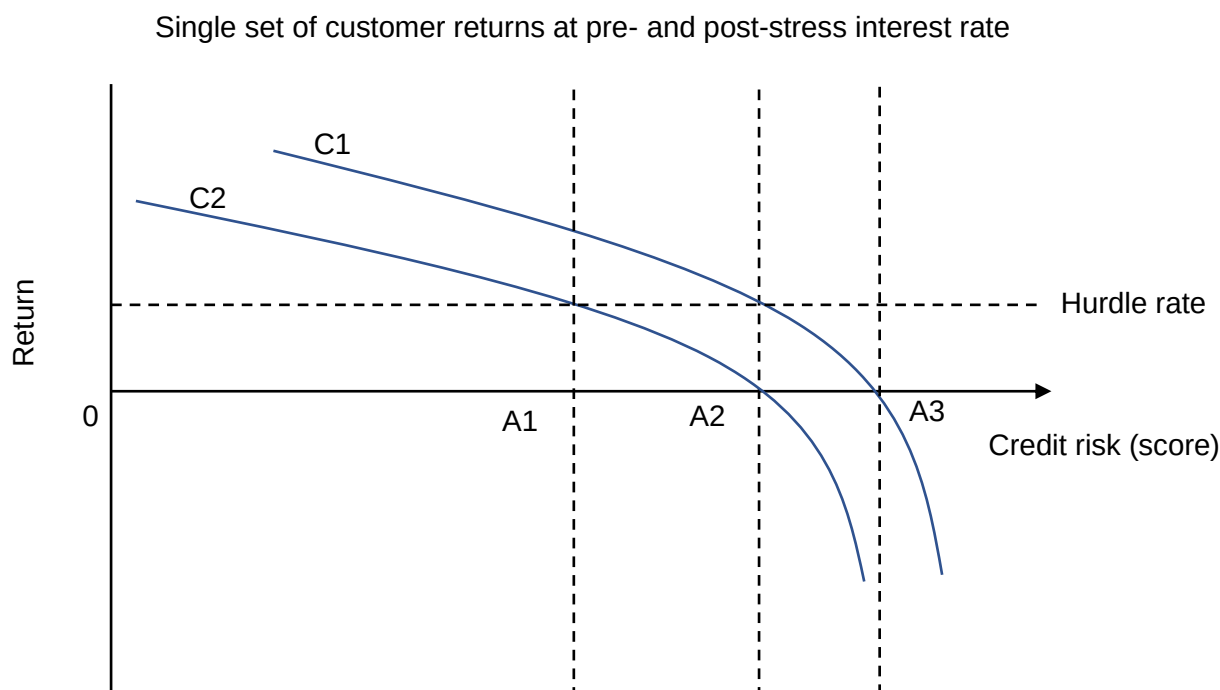


Figure 1: Credit risk and return profile

[Total 15]

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QUESTION 2

- i. Define and briefly outline the components that make up the following regulatory ratios: Liquidity Coverage Ratio (LCR) and Net Stable Funding Ratio (NSFR).

[4]

- ii. Discuss the difficulties a bank may face trying to maintain LCR and NSFR in uncertain and stressed economic conditions.

[5]

You are an actuarial analyst working at BankOne, a full-service retail bank.

- iii. Discuss ways in which the bank could improve its LCR position. Focus only on improving the denominator of the LCR.

[4]

A colleague has suggested the bank should hold only cash for its High Quality Liquid Asset (HQLA) portfolio.

- iv. Outline the advantages and disadvantages of this suggestion.

[3]

[Total 16]

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QUESTION 3

The Basel Committee on Banking Supervision (BCBS) is a global standard-setter for the banking industry, and its Basel reforms are designed to ensure that banks are able to withstand financial shocks and continue to operate as going concerns.

- i. Outline how the Basel reforms and updates introduced by the BCBS have strengthened capital adequacy requirements for banks in recent years.

[3]

You are an actuary working for a newly established bank in a developing country which has been slow to implement the Basel regulations as they are announced.

- ii. Outline the main challenges and opportunities the bank may face when implementing the Basel regulations.

[5]

- iii. Discuss potential strategies that the bank can implement to overcome these challenges and also ensure preparedness for future Basel updates.

[5]

- iv. Outline how the Basel III capital requirements have shaped and continue to shape the credit risk decision-making processes within banking institutions.

[4]

[Total 17]

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QUESTION 4

- i. Briefly explain the underlying mechanics of a Credit Default Swap (CDS).

[4]

Credit default swaps (CDSs) were widely condemned in the aftermath of the 2008 global financial crisis. Despite the passage of 15 years, many national regulators remain wary of CDSs and the use of these by banks.

- ii. Discuss the advantages and disadvantages of using a CDS for credit risk management.

[5]

- iii. Outline alternative approaches to credit risk management.

[3]

[Total 12]

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QUESTION 5

- i. Define the term Exposure at Default (EAD) and outline the two broad approaches to calculating EADs under Basel regulatory capital guidelines.

[4]

You are an actuary working at ABC Bank. The CRO has asked for a rough estimate of the Credit Conversion Factor (CCF) of the overdraft portfolio. An analyst in your team has suggested that a CCF of 60% would be a good estimate as it is the CCF calculated for 2022.

The following information is given, with amounts being in Local Dollar (L\$):

Default population	2018	2019	2020	2021	2022
Number of defaults during the year	150	200	70	60	50
Average starting drawn balance (L\$) at the beginning of the period	20 000	21 000	19 000	22 000	24 000
Average starting limit (L\$) at the beginning of the period	30 000	33 000	29 000	37 000	39 000
Average balance at default (L\$)	27 000	31 000	27 000	32 000	33 000

- ii. Discuss whether a CCF of 60% would be a good initial estimate for the portfolio and provide a final estimate for the CRO. Support your reasoning with any relevant calculations.

[6]

An actuarial student stated that he read that EADs for personal unsecured term loans are usually estimated as 100% of the outstanding loan balance. He suggests that would be a good estimate for the unsecured personal loan portfolio.

The unsecured personal loan portfolio is made up of three products, as shown in the table below:

Product	Description	Percentage of portfolio (balances)
L1	Unsecured term loan with monthly instalments. The term of the loans is on average 60 months.	40%
L2	Unsecured term loan with monthly instalments. After 6 months, customers can automatically finance an additional amount equal to 50% of the original loan amount.	30%
L3	A mobile application based short term unsecured loan. The term of the loan is 3 months. Interest and fees are charged upfront and included in the loan amount.	30%

- iii. Discuss the appropriateness of estimating the EAD of the personal loan portfolio as 100% of the outstanding balance.

[6]

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The regulator is proposing a move away from internal models for EAD estimates to a standardised calculation for the Business Bank (SME) portfolios.

- iv. Outline the advantages and disadvantages of the bank moving from an advanced approach to a standardised approach to calculating EADs in the Business Bank portfolio.

[4]

[Total 20]

QUESTION 6

- i. Define a Deposit Insurance Scheme (DIS), and outline the main considerations from a regulator's point of view when establishing a DIS.

[3]

- ii. Discuss the advantages and disadvantages of a DIS from the perspective of the participating banks.

[6]

- iii. Outline some of the factors a regulator would need to consider when pricing the premiums of a DIS.

[4]

The regulator of Actuarial is considering implementing a Deposit Insurance Scheme (DIS).

XYZ Bank has the following set of accounts on its balance sheet:

Segment	Number of customers	Average credit balance (deposits) (L\$)
Corporate Banking	2 000	100 000
Business Banking	10 000	150 000
Retail Banking (high net worth)	5 000	100 000
Retail Banking (middle income)	50 000	30 000
Retail Banking (low income)	100 000	2 500

The DIS would cover all retail deposits up to L\$60 000. The regulator proposes premium equal to a 0.1% per annum charge on all retail deposits on participating banks.

- iv. Outline various ways in which XYZ Bank could include this cost in their product pricing.

[2]

The CRO has suggested that the bank should not increase the cost of banking products for the low-income segment.

- v. Discuss reasons as to why the CRO has made this suggestion.

[5]

[Total 20]

[Grand Total 100]

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END OF PAPER