ACTUARIAL SOCIETY OF SOUTH AFRICA

EXAMINERS' REPORT

June 2026

Subject F107|B100 — Banking Fellowship Principles

INTRODUCTION

The attached report has been prepared by the subject's Principal Examiner. General comments are provided on the performance of candidates on each question. The solutions provided are an indication of the points sought by the examiners and should not be taken as model solutions.

General comments on the aims of this subject and how it is marked

The aim of the Banking Principles subject is to instil in successful candidates the key principles of banking and to introduce students to the different types of activities undertaken by banks, including their associated risks, and the quantification of these risks.

A mix of question styles is used, covering knowledge of the material set out in the core reading, application of this in calculations and case studies and higher order skills such as synthesis and collation of recommendations.

Candidates are awarded marks for all reasonable answers including different but still reasonable numerical solutions. Marks are awarded for working in the case of numerical answers. Successful candidates concentrate on answering the questions asked rather than repeating their knowledge without application.

Candidates who give well-reasoned points, not in the marking schedule, are awarded marks for doing so.

Comments on candidate performance in this diet of the examination

This was the ninth sitting of the Banking Principles subject.

The paper covered a range of syllabus objectives and included questions that required candidates to apply knowledge to the circumstances described. Candidates who were able to apply their knowledge to specific scenarios in the questions were successful, with better prepared candidates able to generate a number of valid points.

There was a mixed performance in the relevant bookwork related questions, and many candidates struggled with explaining simple concepts.

Many candidates did not provide sufficient breadth and depth in their responses and failed to generate a sufficient number of points for the marks on offer.

QUESTION 1

Protea Bank is a mid-sized retail bank that has accumulated a large portfolio of home loans over the past decade. The bank's Treasury team is exploring securitisation as a mechanism to manage the balance sheet and free up capital for new lending.

i. Define securitisation and explain the basic mechanics of how a bank securitises a portfolio of loans.

[3]

- Securitisation is a structured finance technique whereby a bank transfers the risk of a portfolio of assets (such as loans) either through outright sale or synthetic risk transfer and converts them into tradeable securities that can be sold to investors.
- Basic Mechanics:
    - Asset Selection: The bank identifies a pool of homogeneous assets (e.g., mortgages) with predictable cash flows.
    - Under a traditional approach, assets are transferred to a Special Purpose Vehicle (SPV), which is legally separate from the bank. In order to transfer the assets, the SPV requires funding to acquire the assets. This funding is obtained through a notes issuance by the SPV. Under a synthetic approach the risks and benefits of the portfolio are transferred via a mechanism such as a total return swap.
    - The proceeds of the assets or the total return swap funds the securities. If the portfolio were to experience losses and costs in excess of income, these are distributed in line with the hierarchy of the notes issued.
    - Issuance: The SPV issues asset-backed securities (ABS) to investors, with cash flows from the underlying assets used to pay investors.
    - Servicing: The originating bank often continues to service the loans (collect payments, manage arrears, credit risk management capabilities retained).

[Total 3]

ii. Outline the potential benefits of securitisation for Protea Bank.

[4]

Balance Sheet Management

- By selling the home loan pool to the SPV, Protea Bank removes those assets from its balance sheet, reducing its size and freeing up capacity for new lending. (This can also be achieved with a synthetic structure if the bank wants to buy protection rather than transfer revenue.)
- This directly reduces the bank's risk-weighted assets (RWAs), improving its capital ratios, without the need to raise new equity from shareholders.
- This is particularly valuable for a mid-sized bank with constraints on its ability to raise equity capital in competitive market conditions.
- Though in many markets securitisation is used as a funding benefit only as the equity tranches are often retained. As banks transition to buy-to-distribute models the ability to manage capital has increased and is well established in developed markets.

Liquidity

- A home loan portfolio is inherently illiquid, loans have maturities of 20 to 30 years and cannot be converted to cash without a sale or securitisation.

- Securitisation transforms this illiquid pool into securities that may be sold for immediate cash proceeds, providing Protea Bank with a liquidity facility that would otherwise require other long-term sources of liquidity.
- This liquidity injection will free current funding sources to be used to fund new lending, meet short-term funding obligations, or strengthen the bank's liquidity buffers.
- It also demonstrates the bank's ability to access alternative liquidity sources beyond retail deposits and wholesale markets by broadening its liquidity base.

Risk Management

- By transferring credit risk on the securitised pool to investors, Protea Bank reduces its concentration in home loan credit risk.
- This is especially relevant if the bank's home loan book has grown to represent a large proportion of total assets, creating geographic or product concentration risk that prudent risk management would seek to reduce.
- It may also provide regulatory benefits to transfer low RWA portfolios which impact Basel IV capital rules.
- This de-risking of the balance sheet can also reduce the bank's overall expected credit loss provisions under IFRS 9 for the derecognised portion of the pool.

Funding Diversification

- Securitisation provides access to a distinct investor base such as asset managers, insurance companies, and pension funds that would not typically provide funding to Protea Bank through traditional channels such as interbank lending or term deposits.
- This diversification reduces the bank's reliance on any single funding source and improves its resilience to disruptions in specific funding markets.
- Well-structured securitisation can enable the bank to access funding at rates that may be lower than its own unsecured wholesale funding cost. But this is very unlikely and traditional securitisation markets often trade at a premium to these funding sources.

[Total 4]

iii. Describe the role of credit enhancement in a securitisation structure and outline the different forms of credit enhancement available to an issuer.

[3]

- Credit enhancement refers to mechanisms used to improve the credit quality of the securities issued by the SPV, making them more attractive to investors.
- More or less enhancement is required depending on the perceived risk and liquidity of the underlying assets.
- Forms of credit enhancement:

- Overcollateralisation: the value of the asset pool exceeds the face value of the securities issued, with the excess funded through earnings retention or upfront equity investment by the originator , providing a buffer against losses.
- Reserves: cash reserves established upfront or through retained earnings that can absorb losses before investors are affected.
- Guarantees/Letters of credit: third-party commitments to cover losses up to a specified amount.
- Credit default swaps (CDS): derivative contracts that transfer the credit risk of specific assets to a protection seller.
- First loss provisions: a designated portion of the structure absorbs the first losses on the pool.
- Tranching: securities are issued in tranches (junior, mezzanine, and senior) each with different risk and return profiles. The junior tranche absorbs losses first, protecting the senior tranche.

[Total 3]

Protea Bank's origination team is under pressure to grow the home loan book quickly. An "originate to distribute" proposal is put forward to securitise newly originated loans within 90 days of issuance, passing the credit risk to investors and recycling the capital into further lending. The structuring team earns a fee on each transaction that is closed, and the loans will be serviced by a third party after transfer. Senior management are supportive as the model allows rapid balance sheet growth without the need to raise additional equity.

iv. Identify the "originate to distribute" risks present in this scenario and outline the measures that could be introduced to manage these risks.

[3]

Originate-to-distribute risks that are present:

- There is no ongoing economic stake as loans are securitised within 90 days, meaning Protea Bank bears no long-term exposure to borrower performance.
- 90 days is too short to get an accurate read of credit risk, this ideally needs to be longer to be eligible to include in pool (possibly 6-12 months minimum).
- The fee-driven origination incentives means the structuring team earns a fee per transaction closed, creating pressure to originate volume over quality.
- As servicing is passed to a third party, no party knows the borrower fully, replicating the chain fragmentation that contributed to the financial crisis.
- Protea bank is the customer facing entity which means recovery processes may have increased levels of friction.
- If the SPVs experience liquidity strain this may generate step-in risk for Protea.
- Recycling capital quickly into further lending amplifies these risks across a growing pool of loans with potentially deteriorating credit quality.

Measures to manage these risks:

- Protea Bank can be required to retain a meaningful economic interest in each securitisation (e.g., holding the first-loss or equity tranche).
- This ensures the originator has skin in the game and an ongoing incentive to maintain credit quality.
- Enforce robust credit assessment standards at origination, independent of the volume targets and fee structures of the structuring team.
- Investors and supervisors should have access to all relevant information about the underlying loan pool in a standardised format, so that risk is not obscured by the securitisation structure. This would include all information on the individual loans that could assist in deriving an accurate view of the inherent risk, with data points such as borrower income, credit scores, loan payment terms, etc.
- A deferred or claw back fee structure could reduce the conflict of interest.

[Total 3]

[Total 13]

This performance on this question was poor, although it was expected to be better given that is was based on bookwork.

Part (i) performance was good, as it was based on bookwork

Part (ii) performance was poor as students were unable to highlight advantages of securitisation to the bank. Students who managed to group their answer by the type of benefit to the bank (liquidity, balance sheet management, etc.) generally performed better, whereas answers that had no clear structure scored poorly.

Part (iii) was answered very poorly. This was concerning as this was directly based off bookwork, and it was clear that many students had no idea what was being referred to in the question

Part (iv) performance was fair. Candidates picked up the main issues present with the proposal. Many failed to pick up that a 90-day period is too short to get a true sense of credit risk. Many students also missed easy marks that were hinted at in the question, such as the incentive driven nature of the proposal.

QUESTION 2

Saiyan Bank is a large bank that currently uses the Advanced Internal Ratings-Based (AIRB) approach for credit risk capital calculations across all its portfolios. The Chief Risk Officer has asked you to assess the impact of the Basel IV (Basel III final reforms) on the bank's operations.

i. Outline the key revisions to the credit risk measurement approaches under Basel IV and explain the purpose of these revisions.

[3]

Key Revisions:

- Enhancements to the standardised approach to increase risk sensitivity
- Restrictions on the use of IRB approaches for certain asset classes, mostly low default portfolios.
- Introduction of an output floor (72.5%) based on standardised RWA
- Parameter floors for IRB models (e.g., minimum PD, LGD values)
- Greater specification of parameter estimation to reduce variability

Purpose of Revisions:

- Retain a prespecified level of capital in the industry.
- Improve comparability of capital ratios across banks
- Reduce excessive variability in modelled outputs specifically for low default portfolios
- Balance model complexity with risk sensitivity
- Limit the capital benefit from using internal models
- Address shortcomings identified in Basel II IRB approach including excessive complexity and lack of robustness.

[Total 3]

Under Basel IV, the AIRB approach can no longer be applied to the asset classes of specialised lending and equities.

ii. Discuss the operational implications for Saiyan Bank in transitioning these portfolios to the appropriate approach, with specific reference to how internal systems, reporting and modelling are impacted.

[5]

- Saiyan Bank will need to develop or enhance its systems to support SA calculations for the affected portfolios.
- This includes building or updating exposure classification logic to correctly identify specialised lending sub-categories and equity positions.
- The SA approach for corporate exposures relies on external credit ratings and, where ratings are unavailable, financial ratios to determine risk weights.

- For equities, the bank will need to implement the look-through approach or the relevant SA equity risk weights, which differ materially from the internal model treatment. Legacy data pipelines built for AIRB may not contain the required fields.
- Existing AIRB models for specialised lending and equities will no longer be used for regulatory capital purposes.
- The model validation and ongoing monitoring teams may see a reduction in the scope of their work for these portfolios, while simultaneously facing pressure from the broader Basel IV model changes (parameter floors, revised estimation standards) across retained AIRB portfolios. However, the internal risk model focus may be retained.
- Model development and validation capacity may be strained during the transition, given the concurrent demands of recalibrating retained IRB models to meet the Basel IV parameter floors and estimation standards.
- Regulatory reporting templates will need to be updated to reflect the new treatment of these portfolios.
- Parallel reporting may be required during a transition period to demonstrate compliance and allow reconciliation.
- Internal governance documentation, including credit risk policies, capital allocation frameworks, and risk appetite statements, will need to be updated to reflect the change in approach for these asset classes.
- The bank's internal pricing and credit decisioning tools for specialised lending will need to be recalibrated as deal pricing that previously relied on AIRB-derived economic capital metrics must now incorporate the higher SA-based capital cost.
- Front office relationship managers, credit analysts, and finance teams will require training on the new SA risk weighting rules for specialised lending and equities.
- The bank must plan for a phased implementation, including gap analysis, system build, parallel running, and regulatory sign-off, ensuring deadlines set by the primary regulator are met.

[Total 5]

The implementation timelines for Basel IV vary significantly across jurisdictions. For example, the EU began implementation in January 2025, while the UK started in July 2025. The US proposals remain under review with implementation delayed. Saiyan Bank currently operates within all these jurisdictions.

iii. Discuss the challenges and potential competitive implications for Saiyan Bank given the divergent implementation timelines across these major banking jurisdictions.

[5]

- As a multi-jurisdictional bank, Saiyan Bank must maintain parallel regulatory capital frameworks simultaneously, applying Basel IV compliant calculations in EU and UK entities while operating under the existing Basel III regime in its US operations. This significantly increases system

complexity and the cost of compliance infrastructure. If Saiyan Bank has a home regulator for the consolidated entity then the home regulatory requirements will need to be met for the consolidated entity.

- A loan booked in the EU entity may be subject to different SA risk weights and parameter floors than an economically identical loan booked in a US entity, complicating group-level capital management and consolidated reporting.
- Capital allocation across the group becomes more complex when different subsidiaries are subject to different regulatory capital floors.
- The bank's treasury and capital management functions must track multiple regulatory metrics simultaneously and ensure each entity meets its local requirements.
- The uncertainty over the final form and timeline of the US Basel III Endgame creates challenges for long-term business planning. Saiyan Bank cannot fully optimise its capital structure or make final investment decisions in its US operations without clarity on the eventual regulatory framework.
- The bank faces the risk of having to undertake multiple rounds of implementation work and system changes if the US rules diverge materially from the EU and UK versions, or if further revisions are made before US implementation is finalised.
- Different output floor phase-in schedules across regions mean that capital requirements will change at different rates in different jurisdictions, making it difficult to present a consistent capital story to investors and analysts.
- US banks operating under the delayed Basel proposals may be able to maintain lower capital requirements for longer, allowing them to offer more competitive pricing on credit products.
- This creates potential for capital arbitrage, where business is intentionally booked in jurisdictions with more favourable regulatory treatment.
- Saiyan Bank, as a multi-jurisdictional operator, may face competitive pressure in markets where locally headquartered banks benefit from delayed implementation.
- There is a broader systemic risk of a regulatory race to the bottom, where jurisdictions compete for banking activity by softening or delaying implementation, undermining the original Basel IV objective of improving global comparability and reducing systemic risk.
- Conversely, Saiyan Bank's early adoption of Basel IV in EU and UK entities, while challenging operationally, may provide longer-term benefits through improved risk management practices, greater investor confidence, and reduced model risk.
- Communication with rating agencies, equity analysts, and debt investors requires particular care. The bank must clearly explain differences in reported capital ratios across jurisdictions and articulate a credible path toward consistent group-level compliance.

[Total 5]

[Total 13]

This question was generally answered well.

Part (i) was answered well as it was based on bookwork.

Part (ii) was generally well answered. Stronger candidates suggested a wide range of implications for the bank. Candidates who had a clear structure in their answer scored well, given that the questions explicitly stated what areas to discuss in the answers. Stronger candidates were able to generate a broad range of answers, whereas the weaker candidates tended to focus only one impacted area.

Part (iii) candidate performance was fair. Candidates picked up the implications of different regulations across different jurisdictions. Most candidates were able to articulate the challenges arising from having different jurisdictions but did not expand enough on how it affects the competitive position of banks. Surprisingly few candidates brought up the impact of regulatory/capital arbitrage arising from this scenario.

QUESTION 3

Harvey Bank is a large, established retail bank that operates within a single jurisdiction and offers a full suite of banking products and services for individual customers. Harvey Bank has a mature credit risk modelling capability and calculates regulatory capital for credit risk using the Advanced Internal Ratings-Based (AIRB) approach.

i. Outline different ways in which the bank can use Probability of Default (PD) models to manage credit risk. For each potential use, comment, with motivation, on whether a point-in-time (PIT) or through-the-cycle (TTC) measure would be most appropriate.

[8]

Regulatory capital calculation

- PD models are used to determine the amount of regulatory capital the bank must hold against credit risk exposures.
- TTC PDs are preferred for regulatory capital purposes because they provide a stable estimate that smooths out short-term economic fluctuations.
- This approach ensures capital requirements are not overly sensitive to cyclical changes, supporting prudent risk management and regulatory compliance.

Impairments

- PD models serve as a critical input for calculating credit impairments under accounting standards such as IFRS 9.
- PIT PDs are most appropriate for impairment calculations, as they reflect current borrower creditworthiness and prevailing economic conditions.
- This facilitates timely recognition of credit losses, in line with accounting standards such as IFRS 9.

Origination

- PD models assist in loan origination decisions by quantifying the risk of default for prospective borrowers.
- During underwriting, PIT PDs are used to assess the immediate risk of new borrowers.
- This supports risk-based decision making and ensures credit is extended to suitable applicants.
- TTC PDs may be preferred in credit underwriting when the goal is to assess a borrower's long-term creditworthiness, minimizing the impact of short-term economic fluctuations.
- TTC PDs are usually utilised in commercial or corporate environments were TTC views of risks are preferred.

Pricing

- PD estimates inform risk-based pricing of loans, ensuring that interest rates are aligned with the borrower's credit risk.
- TTC PDs should be used for loan pricing when the objective is to set interest rates based on a borrower's stable, long-term credit risk, rather than short-term economic conditions.

- This approach is particularly suitable for products with longer maturities or when pricing consistency across economic cycles is desired.
- PIT PDs can be used to inform risk-based pricing for shorter term products. Incorporating current risk factors enables the bank to set interest rates that accurately reflect the likelihood of default and potential losses for shorter term products.
- Credit curves, which are built from point-in-time (PIT) data, are used in pricing to reflect long-term credit risk expectations across different maturities.

Stress testing and scenario analysis

- PD models are used in stress tests to estimate potential credit losses under adverse economic scenarios.
- Adjusted PIT PDs are appropriate, as these tests require sensitivity to changing economic conditions and borrower responses to stress.

Portfolio monitoring

- Ongoing monitoring of the credit portfolio's risk profile uses PD models to identify emerging risks and concentrations.
- Both PIT and TTC PDs can be informative: PIT for detecting short-term changes and TTC for understanding long-term portfolio stability.

[Total 8]

ii. Define the term Significant Increase in Credit Risk (SICR) under the IFRS 9 expected credit loss (ECL) framework.

[2]

- Significant Increase in Credit Risk (SICR) under IFRS 9 is the trigger for moving financial assets from Stage 1 (12-month expected credit losses) to Stage 2 (lifetime expected credit losses).
- The assets within this category are performing, but the credit risk they pose has increased significantly – the risk of default must now be high (e.g., an asset with extremely low credit risk may experience a SICR, but still present low risk of default).
- It requires assessing whether the risk of default has increased significantly since initial recognition, using quantitative (e.g., PD changes) and qualitative indicators (e.g., forbearance).
- Many banks consider payments more than 30 days past due to be an indicator of this significant increase, but IFRS does not provide a specific rule and leaves this to a bank's (and supervisor) discretion.
- For corporate exposures, SICR is typically assessed using criteria such as breaches of financial covenants, appearance on a watchlist or deterioration in key financial metrics.
- The definition used, however, should be consistent with internal risk management practices (e.g. if loan covenants relate to payments being 30 days past due, this would be an indicator for credit impairment).

[Total 2]

iii. Explain how the requirement of SICR could lead to a reduction in credit lending during an economic contraction. Refer to the CET1 (Common Equity Tier 1) Ratio to support your answer.

[6]

- As the economy contracts, many customers may find it difficult to repay and fall into arrears. Forward looking indicators would also trigger SICR.
- Many exposures would move from Stage 1 to Stage 2, moving from 12 month to a lifetime ECL.
- This provisioning spike impacts banks profitability and retained earnings. A decrease in retained earnings would impact the capital supply.
- CET1 Ratio = CET1 Capital/RWA
    - CET1: share capital, retained earnings
    - RWA: Risk weighted assets (over all risk types including: credit, market, operational)
- An increase in impairment charges reduces the CET1 capital.
- The RWAs of existing loans often increases as borrowers' credit ratings deteriorate.
- The overall CET1 ratio decreases toward the regulatory minimum.
- To protect their capital ratios and avoid regulatory intervention banks would need to stabilise the ratio.
- Raising new equity during a recession is often impossible or prohibitively expensive.
- Therefore, banks would turn to a component they can control immediately which is the RWAs.
- Banks stop issuing new loans or reduce facilities to reduce future RWAs - which is credit tightening.
- Lending is usually then restricted to only the better borrowers, which is a much smaller population.
- All banks following this approach creates a ‘credit crunch’.

[Total 6]

[Total 16]

This question performance was generally poor.

Part (i) had a mixed performance. Many candidates did not answer the question directly. Instead of outlining uses of PD models and evaluating PIT vs TTC for each use, many spent time defining PDs or describing model construction, which earned no marks. A common issue was listing multiple uses without linking each to an appropriate PD measure or providing motivation. Candidates also often treated PIT and TTC as mutually exclusive; in several applications, both measures are relevant for different purposes, and missing this nuance limited scoring potential. Stronger candidates clearly stated the use, selected PIT or TTC (or both), and justified the choice in one or two focused sentences.

Part (ii) performance on this straightforward bookwork question was unexpectedly weak. Many candidates gave too few distinct points to define SICR under IFRS 9, often offering only one or two elements.

Part (iii) Performance on this question was the weakest on the section, despite most candidates demonstrating a sound understanding of SICR and CET1 mechanics. Many candidates wasted time re-explaining SICR, even though this had been examined in the preceding question, thus not focusing sufficiently on the required link to lending behaviour and the CET1 ratio.
A common pitfall was not stating the obvious: candidates described movements in RWA or CET1 but did not explicitly conclude that each movement causes the CET1 ratio to fall. Weaker answers also overlooked that both elements of the ratio deteriorate during an economic contraction, i.e. RWA increases as more exposures experience SICR, whilst CET1 decreases due to higher expected credit losses. Only the strongest candidates followed a similar approach to explain how banks may reduce lending to stabilise or protect the CET1 ratio, completing the causal chain the question required whereas others simply concluded that a reduction in lending is the result.

QUESTION 4

Fever Tree Bank is a retail bank evaluating its product profitability. The following information has been extracted from the bank's management accounts (in L$ millions):

Product	Average Balances	Interest Income	Interest Expense	Fee Income	Impairments	Direct Costs
Home Loans	50,000	4,500	2,750	150	225	400
Credit Cards	8,000	1,920	480	640	480	350
Transactional accounts with Overdraft facilities	3,000	600	150	120	135	180

i. Calculate the following metrics for each product and comment on the relative profitability.
   a. Net Interest Margin
   b. Credit Loss Ratio
   c. Profit Before Tax

[7]

Net Interest Margin:

- NIM = (Interest Income - Interest Expense) / Average Balances
- Home Loans: (4,500 - 2,750) / 50,000 = 3.50%
- Credit Cards: (1,920 - 480) / 8,000 = 18.00%
- Overdrafts: (600-150)/3,000 = 15.00%

Credit Loss Ratio:

- Credit Loss Ratio = Impairments / Average Balances
- Home Loans: 225 / 50,000 = 0.45%
- Credit Cards: 480 / 8,000 = 6.00%
- Overdrafts: 135/3,000 = 4.50%

PBT:

- PBT = Interest Income + Fee Income - Interest Expense - Impairments - Direct Costs
- Home Loans: 4,500 + 150 - 2,750 - 225 - 400 = L$1,275m
- Credit Cards: 1,920 + 640 - 480 - 480 - 350 = L$1,250m
- Overdrafts: 600 + 120 -150 -135 -180 = L$255m

Commentary:

- Home loans contribute the highest to profit and the lowest credit loss ratio (0.45%) of the lending products, reflecting the secured nature of mortgage lending where collateral recovery limits loss severity.
- However, the NIM of 3.50% is the lowest of all lending products, as mortgage rates are typically competitive and the products are long-duration, which constrains repricing ability in a changing rate environment.

- The strong contribution is driven primarily by the large balance base of L$50,000m rather than by margin efficiency.
- Credit cards have the highest NIM at 18.00%, reflecting the unsecured, revolving nature of the product and the higher credit risk premium embedded in card pricing.
- However, this is substantially offset by the highest credit loss ratio of 6.00%, indicating that a significant portion of the interest income earned is consumed by impairments.
- Despite this, credit cards generate a net contribution of L$1,250m, and benefit from fee income of L$640m, highlighting the multi-revenue-stream nature of the product.
- Overdrafts have a NIM of 15.00%, reflecting their unsecured and short-term natured requiring a higher credit risk premium relative to secured lending.
- The credit loss ratio of 4.50% is lower than credit cards, which may reflect the differences in customer behaviour between the two products, with overdrafts generally associated with existing transactional accounts where customers have a history with the bank.
- With a relatively small balance base of L$3,000m, the absolute PBT contribution of L$255m is modest, but the return on assets implied by the NIM and PBT margin is still attractive

[Total 7]

ii. Discuss the strategic importance of transactional accounts to a retail bank, considering: cross-selling opportunities, customer retention, and funding benefits.

[7]

Cross-Selling Opportunities:

- A transactional account is typically a customer's primary banking relationship, the account into which their salary is paid and from which their regular financial obligations are met.
- This transactional data is a significant proprietary asset that enables highly targeted and well-timed product offers across the bank's full product suite.
- Transaction data can identify when a customer's income increases, when recurring debit orders suggest vehicle finance may be needed, or when spending patterns indicate life events such as home purchases or growing families.
- Targeted offers based on behavioural data consistently achieve higher conversion rates than generic campaigns, improving the return on marketing spend.
- The number of products held per customer is a key driver of customer lifetime value.
- Transactional account holders who take on lending products, savings vehicles, and insurance through the same bank generate significantly more total income per client than single-product relationships.
- Acquiring a transactional account is therefore often treated as a loss-leader strategy to anchor a profitable long-term multi-product relationship.

Customer Retention:

- Once a customer's salary is paid into a transactional account and their recurring payments are linked to that account, the practical cost of switching to a competitor bank becomes very high.
- Customers must redirect their salary payment, migrate all debit orders, notify all payees of the new account details, and manage a transition period of dual accounts.
- This operational friction creates strong behavioural inertia that keeps customers even when a competitor offers a marginally better deal.
- Multi-product relationships have materially lower attrition rates than single-product relationships.
- A customer who holds a transactional account, a credit card, and a home loan with Fever Tree Bank is significantly less likely to leave than a customer with only a single product.
- The transactional account acts as the anchor of the relationship, and its loss typically triggers the unwinding of other products as well.
- Retaining an existing customer is substantially cheaper than acquiring a new one. Transactional accounts, by deepening and anchoring the customer relationship, play a critical role in reducing the overall cost of the customer base.
- Attrition monitoring on transactional accounts should therefore be treated as a leading indicator of broader portfolio health.

Funding Benefits:

- Transactional account deposits represent one of the most stable and cost-effective sources of funding available to a retail bank.
- Unlike wholesale funding or fixed-term deposits, operational deposits in transactional accounts tend to be relatively insensitive to interest rate movements.
- This rate insensitivity allows the bank to fund a portion of its lending book at a lower effective cost than market rates would imply.
- The stability of transactional deposit balances contributes directly to the bank's liquidity position.
- Under Basel III liquidity frameworks, retail operational deposits receive more favourable treatment in the Liquidity Coverage Ratio (LCR) and Net Stable Funding Ratio (NSFR) calculations than wholesale or non-operational deposits, as they are assumed to have a lower run-off rate under stress.
- A larger transactional deposit base therefore improves Fever Tree Bank's regulatory liquidity metrics.
- At scale, the low cost of transactional deposit funding provides a structural funding advantage over banks that rely more heavily on wholesale markets or higher-rate term deposits.
- This cost-of-funds advantage translates into improved NIM on the lending book funded by these deposits, effectively subsidising the profitability of Fever Tree Bank's credit products even though the transactional account itself earns a negative NIM.

[Total 7]

The bank currently uses external credit bureau scores as a key input to credit decisions. A senior manager has proposed developing fully internal credit scoring models to replace reliance on bureau scores.

iii. Discuss the advantages and disadvantages of this proposal.

[5]

Advantages of Internal Scoring

- Bureau scores are developed on the aggregate credit population and may not optimally reflect the risk characteristics of Fever Tree Bank's specific customer segments.
- An internal model can be trained exclusively on the bank's own applicant and performance data, capturing product-specific risk drivers that a generic bureau score may not capture.
- As an existing bank with an established customer base, Fever Tree Bank holds rich internal data on customer account conduct, including transaction history, savings patterns, debit order behaviour, and product usage.
- This information is not available to credit bureaus and can be powerful predictors of default. An internal model can leverage this proprietary data to produce a more accurate and differentiated risk assessment than bureau scores alone.
- Reliance on external bureau scores means the bank has limited visibility into the methodology, data sources, and update cycle of the score.
- When a bureau revises its scoring model, the bank may experience unexpected shifts in score distributions that affect credit decisions without having made any internal changes.
- An internal model gives the bank full control over the methodology and the timing of updates.
- A more accurate internal model can improve risk-adjusted pricing by identifying high-quality borrowers who might be over-priced under a generic bureau score, and by correctly identifying high-risk applicants who might be under-priced.
- This can improve the bank's competitive positioning in attracting low-risk borrowers while protecting portfolio quality.
- Credit bureau scores are typically charged on a per-enquiry basis, which can represent a significant cost for a high-volume retail lender.
- Replacing bureau scores with an internal model eliminates this variable cost, although the upfront development and ongoing maintenance costs must be weighed against the saving.

Disadvantages of Internal Scoring

- Developing a robust internal scoring model requires substantial investment in data infrastructure, model development capability, and governance frameworks.
- The bank must be able to compile, clean, and link historical application data with performance outcomes. The total cost of development, validation, and implementation can be substantial.
- A credible scoring model requires a sufficiently large and representative historical dataset that includes default events across at least one economic cycle.

- Industry guidance typically suggests a minimum of five years of data with a sufficient number of observed defaults to produce statistically reliable estimates. If Fever Tree Bank's credit book is relatively young or has experienced low defaults, the available data may be insufficient to develop a robust model.
- One of the key advantages of bureau scores is that they capture a borrower's credit behaviour across all lenders, not just Fever Tree Bank. A borrower who has never defaulted with the bank may have serious delinquencies with other institutions, which would be visible in a bureau score but invisible to an internal model that relies solely on the bank's own data.
- A credit scoring model is not a static tool. As the borrower population evolves, economic conditions change, and product offerings shift, the model must be regularly monitored, recalibrated, and periodically redeveloped.
- This requires dedicated modelling resources and a robust model governance framework, including regular validation cycles. The resourcing commitment is ongoing and should not be underestimated.
- If the internal scores are used as the basis for regulatory capital calculations under the IRB approach, they must meet the stringent requirements of the Basel framework, including minimum data history, use test requirements, and independent validation.
- Regulatory approval adds time, cost, and complexity to the development process, and ongoing supervisory oversight increases governance obligations.
- An internal model, once embedded in credit decision processes, introduces concentration risk around a single model's assumptions and limitations.
- Errors in model development, data quality issues, or unforeseen population shifts may systematically affect credit decisions across the entire credit book before they are detected through monitoring.
- A blended approach, using both internal models and bureau scores, may provide a more robust and diversified decision framework than replacing bureau scores entirely.

[Total 5]

[Total 19]

This question was generally answered very well.

Part (i) was answered very well. However, very few candidates commented sufficiently on the numbers. Many thought that simply restating the results in a ranked order would be sufficient, without mentioning the attributes of the underlying product type. Stronger candidates were able to differentiate between the unsecured and secured nature of the products and link that to the results of their calculations.

Part (ii) Many candidates did not structure their answers around the 3 headings provided, missing the clear cues for idea generation. Instead, many drifted into discussing generic pros and cons of transactional accounts or rewards programmes, neither of which answer the question.
A further concern was the surprising number of candidates incorrectly suggesting that credit cards are harder to obtain than current accounts. Such confusion weakened arguments about customer retention and switching behaviour. Overall, candidates struggled to generate the required breadth of ideas across all 3 categories of cross-selling, retention, and funding benefits.

Part (iii) was well answered, with most candidates demonstrating a solid appreciation of the trade-offs between internal and bureau-based credit scoring. However, many responses leaned too heavily on cost considerations whilst a further weakness was the tendency to produce a list of points rather than a genuine discussion, despite the explicit instruction to "discuss".
Stronger candidates compared internal and bureau models directly, using a single characteristic to generate paired points, i.e. an advantage for one approach is likely a corresponding disadvantage for the other. Weaker candidates were often overly dogmatic, e.g. asserting that internal models are more accurate without acknowledging the counterpoint that the incremental accuracy gain may be marginal (or even prove worse) and therefore not justify the investment.

QUESTION 5

MGS Bank is planning on launching GigaFlex, which is a revolving credit line for 'gig' workers. i.e., ride hailing, food delivery, and similar operating models. The product's credit limit and price automatically adjust to the customer's recent income.

The product connects, with the customer's consent, to their gig platforms and payment processors, recalculating an affordable limit weekly, and collecting repayments through a fixed percentage of incoming revenues.

The product feature summary is shown below:

Feature	**Description**
Type of product	A revolving credit line whose limit adjusts to a customer's recent, verified income from 'gig' platforms.
Target market	Individuals with volatile or seasonal income who are underserved by traditional, salary-based scoring.
Limits	Net Platform Income (NPI) is the average net inflows over the last 90 days Max Limit: 1.5 × NPI
Repayment	A fixed percentage of 15% is automatically taken from platform pay outs (customer income) weekly.
Relief	Reduce the repayment percentage after verified income shocks.

i. Outline the advantages and disadvantages of the product to the customer.

[4]

Advantages

- Provides credit access to individuals who are typically denied due to a lack of a formal salary slip, despite having consistent (albeit volatile) cash flows.
- Compared to traditional products, this may provide faster access and time to approval given the integration into the payment platform.
- The weekly recalculation prevents the customer from being stuck with an inappropriately low limit if their business grows, without requiring a manual application.
- The 15% sweep ensures that repayments scale with earnings. In a good week, the customer pays more; in a slow week, the absolute amount deducted drops, preventing a larger deduction than the customer could handle. This type of setup helps with customer certainty and keeping payments up to date.
- The relief feature provides a formal mechanism for hardship, reducing the associated stress of a temporary income shock.

Disadvantages

- As the limit is tied to a rolling 90-day average, a worker cannot rely on a fixed amount of credit for long-term planning. A sudden market downturn could see their credit limit reduce exactly when they need a safety net.

- If the interest rate is high, a fixed 15% repayment sweep may barely cover the interest during low-earning periods, leading to lower overall capital repayments.
- A fixed repayment sweep does not account for the worker's operating costs. If these costs rise (e.g., a fuel price hike), the 15% sweep might dig into the funds needed for basic survival.
- Data sharing; privacy concerns: Customers must connect platforms and bank accounts; even with consent and controls, some may be uncomfortable with continuous data access.

[Total 4]

The CFO of the bank has noted that since this is a new product it has a potential to open the bank up to high credit risk which could have a large impact on the financial statements.

ii. Discuss solutions or strategies that the bank could put in place to help address the CFO's concerns.

[7]

- The bank should set concentration limits on this product. For example, only x% of the book could be GigaFlex, and max y% of the product should be e-hailing. This would limit losses in case a certain region or platform runs into difficulties or exiting the market.
- Ensure the product portfolio is diversified. For example, this could be across the region or type of gig-worker. If one province has a bad week (e.g., bad weather for e-hailing) then other provinces could help alleviate the risk.
- There should be a period of monitoring or verifiable historic income through the gig platform before granting a facility.
- The bank could only take on gig-workers who have a minimum time active on a platform (e.g., 6 months). These workers would be less risk than brand new gig-workers.
- Impose a maximum limit for a facility. A maximum limit for the product would ensure a manageable EAD per loan.
- The current limit is set at 1.5* NPI:
    - For the NPI calculation the largest outliers could be removed to ensure there is lower volatility in the limits and smooth credit turnover.
    - The multiplier could be adjusted based on riskiness of the customer. For example, a stating multiplier could be set 1.0 and adjusted over time.
    - A distribution of platform income could be considered to assist in setting the limits, multipliers and thresholds.
- The bank could apply daily withdrawal limits. This is to ensure that customers do not withdraw the total limit when available.
- The bank could encourage customers to register more than one platform to the facility. In that case the bank could recover amounts if one platform fails.
- The bank should ensure that it has detailed monitoring on the portfolio.

- The bank could consider other indicators as leading indicators of distress. This could be through platform monitoring such as feedback received.
- The bank should ensure a minimum repayment amount is received. If the 15% of the platform pay-out then the next pay outs should be adjusted upward.
- The bank could offer a type of credit insurance on the facility. For example, a percentage depending on the amount of the facility utilised. This would cover the bank in the event of default.
- It could be a requirement for new customers to have guarantees in place to stand in place in case the loan cannot be repaid. This could reduce the risk in the event of default.
- Ensure all models including pricing, provisioning, and capital are built and validating according to model risk management principles.
- A credit scoring type of approach could be utilised, where depending on the type of model, differentiated cut-offs, limit matrices, pricing etc., based on the credit score output for these applications.

[Total 7]

iii. Describe operational risks that the bank could face specifically related to this product.

[3]

- Platform API/Connectivity risk: The product has a real-time link to gig platforms. If a platform's API goes down, or if they change their data-sharing policy the bank loses the ability to recalculate limits or verify income.
- Fraud risk: Fraudsters could potentially spoof income by creating fake passenger accounts to generate "verified" income, triggering high credit limits before withdrawing cash and leaving.
- Third-Party platform dependency: If a large number of gig-workers are on a single delivery platform, and that platform exits the local market, the bank faces a large operational shock.
- Model or implementation risk: A flaw in the NPI calculation logic or implementation could lead to over-lending across the entire portfolio.

[Total 3]

The bank uses the new standardised method for calculating their operational risk capital requirements as per the Basel III Framework.

iv. Briefly describe the components of the new standardised approach to operational risk capital requirements.

[3]

<u>The Business Indicator Component (BIC)</u>

- The BIC serves as the baseline for capital. It is a financial-statement-based proxy for the bank's operational risk exposure. It is calculated by multiplying the Business Indicator (BI) by specific marginal coefficients across three increasing buckets.
- The BI itself is the sum of three distinct components:

- The Interest, Lease, and Dividend Component (ILDC): Measures the scale of traditional banking activities.
- The Services Component (SC): Measures fee-based income and expenses (like commissions and advisory services).
- The Financial Component (FC): Measures the absolute value of trading and banking book profit/loss.

The Internal Loss Multiplier (ILM)

- The ILM is the "risk-sensitive" adjustment that either increases or decreases the BIC. It compares the bank's actual historical losses to its income-based baseline.
- The Loss Component (LC): This is based on the average annual operational losses the bank has suffered over the last 10 years.
- If a bank's historical losses (LC) are exactly equal to its BIC, the ILM is 1, and the capital requirement remains at the baseline.
- If a bank has a "fat tail" history or high losses, the ILM > 1, acting as a capital penalty.
- If a bank has very low historical losses, the ILM < 1, providing a capital discount.
- The total operational risk capital is calculated as:
- ORC = BIC * ILM

[Total 3]

The bank recently experienced a very large operational risk event on some of its other products, relating to internal fraud. An IT analyst bypassed limits on business overdrafts, resulting in a L$150m loss.

v. Discuss the potential impacts on their current and future operational risk capital requirements. [2]

- The impact would depend on how many years of data the bank has and the local supervisory rules.
- Supervisors may require a bank to calculate capital requirements using fewer than 10 years of losses if the ILM > 1 and they believe the losses are representative of the bank's operational risk exposure.
- Given a loss event occurred, then LC component of the capital formula would be impacted.
- As it is a very large event, it could mean that LC > BIM and ILM >1.
- Since the LC is the sum of the last 10 years of operational losses, this would mean the event would stick on the bank's calculation for the next 10 years.
- However, if the bank is a smaller bank and/or the supervisor could have set the ILM to 1 which would ignore the LC component of the calculation.

[Total 2]

[Total 19]

This question was generally answered poorly.

Part (i) performance was good, with most candidates able to generate a sensible set of advantages and disadvantages. Poorer candidates were those that didn't consider the question from the perspective of the borrower, or did not understand how gig platforms operate. Some candidates confused the repayment amount with the price of the loan, and generated irrelevant points as a result.

Part (ii) performance was poor, with few candidates managing to score well. Most candidates were able to list generic credit risk mitigants based on bookwork, and made some unrealistic proposals without substantiation, such as hedging via derivatives. Better candidates linked suggested mitigants to the specific features of the product described, and provided practical suggestions for how the product could be tailored, risk could be assessed and risk limits could be applied to reduce overall riskiness.

Part (iii) was answered well. Many candidates referenced risks of a type other than operational risk and lost marks as a result. Better candidates explained operational risks that would exist within the specific context of this product and how it would be operationally implemented.

Part (iv) performance was average, with a clear distinction between candidates that knew the bookwork and those that did not. Some candidates described the old rather than the new standardised approach and were not awarded marks.

Part (v) was answered very poorly in general, with few candidates linking the impact of the loss with the approach that was described under the prior question. Most candidates did not distinguish between current and future impacts. Few managed to question the number of years of data available, or question the regulator/supervisor's stance.

QUESTION 6

Clair-Obscur Bank (COB) offers a full range of banking services to business and corporate clients. The bank is investigating ways to improve its climate risk management capabilities.

i. Outline the types of data that would need to be collected from businesses and corporates to assist the bank to measure physical and transition risks.

[5]

Physical Risk Data

- Precise geolocation (GPS): Exact coordinates for a business's primary assets (factories, warehouses, retail hubs) as well as additional information on additional important properties (e.g., offices) where possible.
- Data on the physical attributes of the collateral, such as valuation, size, or whether a building meets specific standards.
- Insurance related data to properties, stock and vehicles and the type of cover.
- Historic claims information related to physical risk hazard events.
- Information on the location of a corporate's key supply chain participants.

No marks for general comments on weather/satellite data

Transition Risk Data

- Scope 1 & 2: Direct emissions from operations and purchased energy. Scope 3: Indirect emissions in the value chain.
- Sector (and subsector) data will assist in which industries would be most impacted by transition risks.
- Carbon tax information including any taxes being paid, allowances or moratorium periods.
- The mix and amounts of fossil fuel to renewable energy usage.
- Transition plans: The business plans to reduce/optimise emissions and the time period.
- The amount and type of projects related to emission optimisation.
- Local versus international operations to understand the differing carbon taxes, emission limits etc.

[Total 5]

COB has been approached by a fintech which is looking at starting a Climate Data Sharing Hub. The hub's proposal is as follows:

- The hub will provide comprehensive customer climate-related data to banks.
- Banks' customers would submit climate related information to the hub.
- The hub would assist customers in generating or obtaining the required climate-related data.
- Banks would have access to their customer's submitted information in a standardised format.
- The hub will include various tools to provide insights and utilise models and AI to validate data.

ii. Discuss the advantages and disadvantages of a Climate Data Sharing Hub from the perspective of the bank.

[5]

Advantages

- A hub would provide a consistent data metric and formatting standard. Without this, a bank receives data in multiple different formats, making it difficult to integrate into systems and reporting.
- It reduces the burden and costs on both the bank and the client. It could be cheaper than obtaining the data itself either manually of various third parties.
- A business uploads data once, and all its lenders can access it, solving any issues that multiple banks asking similar questions.
- The hub could utilise tools such as AI or satellite imagery to validate data. For example, if a company reports low emissions but satellite thermal imaging shows high heat output, the hub flags the discrepancy for the bank.
- Small businesses often don't have the staff or funds to calculate carbon footprints. A hub often provides that help for SMEs to generate data, allowing the bank to assess risks in its smaller retail portfolios.
- By having a better view of clients physical and transition risk data, the bank would be in a position to offer their customers better products and solutions.

Disadvantages

- If the fintech provides incorrect data and the bank makes a lending decision based on it, the bank may remain legally liable for the error.
- The tools and methodologies utilised may be a black box and results may not be accurate.
- The bank's ability to accurately assess its clients is a competitive advantage. If every bank sees the same data via a hub, that edge is diminished.
- The bank may give the fintech the advantage to market products or solutions directly to clients, thereby losing on future potential revenue.
- The bank’s clients may not want to interact with a third party and may see this as something non-mandatory.
- If the hub becomes systemic to the banking industry's reporting, banks may feel a moral obligation to financially support the fintech if it faces bankruptcy to ensure continuity of service – especially if no alternatives are in place.
- The hub may require extensive regulatory approvals which often take time and may end up not getting approvals.

[Total 5]

The bank has been considering calculating and disclosing its financed emissions (Scope 3) originating from its commercial property finance portfolio.

iii. Outline the reasons as to why the bank would want to improve its scope 3 emission disclosures.

[4]

- Regulators may have now required banks to disclose the carbon intensity of their property finance books.
- International standards like IFRS S2 (climate-related disclosures) and have transitioned from voluntary to mandatory in many jurisdictions.
- There may be increased pressure from investor groups or local bodies for banks to report. Competitor pressure may also be driving the requirements.
- Better Scope 3 data improves the bank's ESG scores, which directly influences the bank's share price and its attractiveness to global investors.
- Improving Scope 3 disclosures allows the bank to set an accurate baseline for their Net Zero ambitions.
- With granular data, the bank can shape and optimise its lending strategy. For example, it might offer lower interest rates for properties with high energy efficiency.
- As carbon taxes increase or energy efficiency regulations (e.g., Energy Performance Certificates) tighten, inefficient, high-emission properties will become more expensive to heat and maintain – this could increase transition risks in the portfolio.
- This could have a potential credit risk impact. If a borrower's disposable income is squeezed by rising energy costs, their PD increases.
- If the property becomes undesirable due to poor energy ratings or cost of maintenance is too high, the LGD could increase.
- By knowing which properties in the portfolio are high-emission, the bank can proactively offer other products and services to reduce these risks such as financing for solar panels, heat pumps, or insulation.
- If the banks then offer these insights to clients and offering ways for them to create 'greener' properties and this could improve customer loyalty and revenue.

[Total 4]

The following methodology has been proposed to calculate the financed emissions of the bank's commercial property finance portfolio:

$$Financed\ emissions\ = \sum_{j} N_j \times E_j$$

Where:

j is the region

N_j is the number of properties in region j

E_j is the estimated emissions per property in region j

iv. Comment on the methodology proposed and suggest improvements to the methodology. [6]

Comments

- Methodology appears basic as it only splits by regions. If regions are defined as province/county level then it would be a very high-level estimation.
- This would be an improvement of having no current estimate (or a single estimate) but still has some flaws.
- It may be easy to implement given the data requirements and the bank's current data availability.
- It could be a differentiator especially if one region is much colder or hotter than the other.
- It requires an estimate of the emission intensity and this itself might be tricky to validate.
- Ideally a more granular split by region would be more accurate if the corresponding emission intensity is available.
- This would require more granular data such as geocoded data per property.

Improvements

- A stronger differentiator would be floor size/building size, as the larger the building then usually the more energy they would require.
- The average intensity may not have included energy efficient technology (e.g., renewable) in its calculation.
- Different industry or sectors would utilise their properties differently and hence a split by industry would create a better differentiator.
- A component could be looking at total revenue or total production as a factor which influences emissions.
- The calculation seems to exclude the proportion of how much the bank is financing per property. An enhancement should be to work out the proportion of the emission it is funding. This component would be similar to a loan to value (LTV).
- The most accurate data would be verified or supplied data on each property's emissions, which is the most difficult to obtain and validate.

[Total 6]

[Total 20]

This question was generally answered poorly.

Part (i) was generally answered poorly. Many candidates gave generic responses sat as weather data, and did not link it to the scenario at hand. Candidates fared better with transition risk data than compared to physical risk. A few candidates mixed up requirements between the two risks.

Part (ii) was answered very well, with most candidates able to generate a sensible set of advantages and disadvantages. Stronger candidates interrogated items such as AI, data privacy, and willingness of customers to supply data.

Part (iii) performance was good. Most candidates were able to list valid reasons for a bank wanting to improve its financed emissions disclosures. Candidates that performed less well were those that didn't generate sufficient content for the marks allocated to the question. Not many candidates picked up that it could impact both credit risk management or whether the bank could offer more products to the customer.

Part (iv) was answered poorly. Some candidates were able to capture relevant observations regarding the methodology and sensible suggestions for improving it. Few candidates included sufficient depth in their responses to have performed well. Better candidates considered both practical aspects of the approach (data required, implementation) and considered practical alternatives to the calculation.

[Paper Total 100]

END OF EXAMINERS' REPORT

