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BNK725

Credit & Risk Management

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BNK725

Credit & Risk Management

Study Handout

Complete lecture-wise notes for Virtual University students

About This Handout

This handout covers BNK725 Credit & Risk Management — how banks identify, measure, price, and control the risks of lending. It follows Pakistani regulation (State Bank of Pakistan's Prudential Regulations, Basel implementation, IFRS 9) throughout, since VU examines the local framework alongside international standards. Each lesson defines the key concepts, works numerical examples in rupees, and ends with exam pointers. Read actively: after each lesson, close the handout and restate the formulas and rules from memory. 

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Lesson 1: Credit Risk: Concepts and the Credit Process

Learning Objectives

- Define credit risk and its three components
- Apply the 5 Cs of credit appraisal
- Describe the stages of the credit process
- Compute expected loss

Credit risk is the risk that a borrower fails to meet contractual obligations — default, late payment, or deterioration in credit quality. It has three components: probability of default (PD), loss given default (LGD), and exposure at default (EAD); $\text{expected loss} = \text{PD} \times \text{LGD} \times \text{EAD}$. Banks manage credit risk through the '5 Cs' of credit: character (repayment history, integrity), capacity (cash flows to service debt), capital (owner's stake/equity), collateral (security), and conditions (economic/purpose context). In Pakistan, the State Bank's Prudential Regulations and the eCIB (Electronic Credit Information Bureau) system structure this assessment.

The credit process runs: origination (application, KYC/AML checks) → appraisal (financial analysis, ratings) → approval (delegated authority, credit committees) → documentation and disbursement → monitoring and review → recovery/workout. Each stage has controls; failures at origination (poor appraisal) cause most bad loans. Credit risk management's goal is maximizing risk-adjusted return: price for risk (risk-based pricing), diversify, and provision adequately (IFRS 9 expected credit loss model).

Why it matters: non-performing loans (NPLs) erode capital, invite regulatory action, and can threaten solvency — Pakistan's banking history (1990s NPL crisis, DFIs) shows the cost of weak credit discipline.

Key Terms & Definitions

- PD / LGD / EAD — Probability of default, loss given default, exposure at default.
- 5 Cs — Character, capacity, capital, collateral, conditions.
- NPL — Non-performing loan; typically 90+ days overdue.
- eCIB — SBP's Electronic Credit Information Bureau; borrower's credit history.

Example / Illustration

- A Rs. 10 million facility: $\text{PD} = 2\%$, $\text{LGD} = 45\%$, $\text{EAD} = \text{Rs. } 10\text{m}$. $\text{Expected loss} = 0.02 \times 0.45 \times 10,000,000 = \text{Rs. } 90,000$ — the minimum risk cost to price into the loan.

Lesson Summary

- $\text{Credit risk} = \text{PD} \times \text{LGD} \times \text{EAD}$.
- 5 Cs structure borrower appraisal.
- Process: originate → appraise → approve → monitor → recover.

Exam Pointers — Very Important

★ Expected loss = $PD \times LGD \times EAD$ and the 5 Cs are the two most-tested definitions in this lesson.

Lesson 2: Financial Analysis for Lending

Learning Objectives

- Compute and interpret key credit ratios
- Build a lender-style cash-flow analysis
- Stress-test borrower projections
- Identify financial red flags

Financial statement analysis converts accounts into lending decisions. Key ratios: leverage (debt/equity, debt/EBITDA), coverage (interest coverage = $EBIT / \text{interest}$; DSCR = operating cash flow/debt service), liquidity (current ratio, quick ratio), profitability (margins, ROA, ROE), and efficiency (receivable/inventory days). Trend analysis (3–5 years) and peer comparison matter more than single-year snapshots — a declining interest cover from 4× to 1.5× signals rising default risk even if covenants aren't yet breached.

Cash-flow analysis is decisive: the UCA (Uniform Credit Analysis) cash-flow format reconciles profit to operating cash flow, then to cash available for debt service. Lenders ask: can operating cash flows service the debt through a downturn? Stress the projections: what if sales fall 15% or rates rise 300 bps? Qualitative factors complement ratios: management quality, industry outlook, competitive position, group support, and account conduct.

Red flags: qualified audit opinions, frequent auditor changes, related-party transactions, window-dressing (year-end spikes in cash), and evergreening (fresh loans to service old ones). In Pakistan, SBP's Prudential Regulations require banks to obtain audited financials above exposure thresholds and to monitor classified accounts closely.

Key Terms & Definitions

- DSCR — Debt service coverage ratio; $\text{cash flow} \div \text{total debt service}$.
- Interest coverage — $EBIT \div \text{interest}$; cushion before distress.
- UCA cash flow — Standardized lender cash-flow format.
- Evergreening — New lending to repay old loans; hides delinquency.

Example / Illustration

- $EBIT = \text{Rs. } 50\text{m}$, $\text{interest} = \text{Rs. } 20\text{m} \rightarrow \text{interest cover} = 2.5\times$. $\text{Debt} = \text{Rs. } 200\text{m}$, $\text{equity} = \text{Rs. } 100\text{m} \rightarrow D/E = 2.0\times$. Verdict: moderately leveraged; cover adequate but thin — price risk and demand security.

Lesson Summary

- Ratios: leverage, coverage, liquidity, profitability — trends beat snapshots.
- Cash flow services debt; stress the downside.
- Watch audit qualifications and evergreening.

Exam Pointers — Very Important

- ★ Ratio computation plus interpretation ('is this borrower creditworthy?') is a standard numerical.

Lesson 3: Credit Ratings and the Basel Framework

Learning Objectives

- Explain the Basel II/III credit-risk framework
- Compute CAR and interpret it
- Describe internal rating systems
- Apply the Z-score model

Internal credit ratings compress analysis into a grade (e.g., 1-10 or AAA-D) mapping to a PD. Under Basel II's Internal Ratings-Based (IRB) approach, banks use PD, LGD, EAD to compute regulatory capital; Basel III added buffers (capital conservation, countercyclical) and a leverage ratio backstop. SBP implements Basel standards in Pakistan with local adaptations (e.g., minimum capital requirements, $\text{CAR} = \text{capital} / \text{risk-weighted assets} \geq \text{regulatory minimum}$, currently 10% plus buffers).

Rating models combine quantitative scores (financial ratios) with qualitative overrides (management, industry) — statistical models like Altman's Z-score ($Z = 1.2X_1 + 1.4X_2 + 3.3X_3 + 0.6X_4 + 1.0X_5$; $Z < 1.81$ distress zone) illustrate the approach, though banks use proprietary scorecards. Ratings drive pricing (spread over KIBOR), approval authority, provisioning, and portfolio limits.

Through-the-cycle vs point-in-time: ratings should be stable (through-the-cycle) rather than whipsawing with each quarter. Validation — back-testing predicted vs actual defaults — is a regulatory requirement for IRB banks. External ratings (PACRA, VIS in Pakistan) supplement internal grades, especially for capital-market exposures.

Key Terms & Definitions

- IRB approach — Bank's own PD/LGD/EAD estimates drive capital (Basel II).
- CAR — Capital adequacy ratio = $\text{capital} \div \text{risk-weighted assets}$.
- Z-score — Altman's bankruptcy predictor; < 1.81 = distress.
- PACRA / VIS — Pakistan's domestic credit rating agencies.

Example / Illustration

- Risk-weighted assets Rs. 800m, eligible capital Rs. 100m → CAR = 12.5% — above the 10% minimum plus buffers; the bank can grow its book or pay dividends within limits.

Lesson Summary

- IRB: own PD/LGD/EAD → capital charge.
- Basel III adds buffers and a leverage backstop.
- Ratings drive pricing, authority, provisioning.

Exam Pointers — Very Important

- ★ Basel II vs III differences and the CAR formula are favourite theory questions.

Lesson 4: Collateral, Security, and Documentation

Learning Objectives

- Distinguish pledge, hypothecation, mortgage, guarantees
- Explain perfection and why it matters
- Apply haircuts and compute security coverage
- Outline enforcement under Pakistani law

Collateral (security) is the second way out — the first is cash flow. Funded security: pledge (movable goods), hypothecation (movable, possession stays with borrower — stocks, receivables), mortgage (immovable property; registered vs equitable), lien/set-off (deposits). Non-funded: guarantees (personal/corporate, financial vs performance). Perfection matters: registration with SECP for company charges, with the registrar for mortgages; an unregistered charge is void against liquidators.

Valuation discipline: forced-sale value (FSV), not market value, with haircuts by asset class (property 20–30%, shares 40–50%+). SBP's Prudential Regulations prescribe eligible collateral and haircuts for provisioning benefit — only properly valued, perfected, and insured security reduces required provisions. Margin calls apply when market collateral values fall.

Documentation: the loan agreement, security documents, and guarantees must be stamped, executed, and legally vetted; limitation periods (3 years generally under the Limitation Act) require acknowledgment of debt to keep claims alive. Enforcement in Pakistan: Financial Institutions (Recovery of Finances) Ordinance 2001 gives banking courts summary powers — a key recovery tool.

Key Terms & Definitions

- Hypothecation — Charge on movables without possession transfer.
- FSV — Forced-sale value; the realizable value in distress.
- Perfection — Registration/steps making security enforceable vs third parties.
- Banking Courts — Summary jurisdiction under the 2001 Recovery Ordinance.

Example / Illustration

- Rs. 10m loan against property with market value Rs. 15m: FSV at 25% haircut = Rs. 11.25m → coverage 1.125x. Acceptable but tight; add margin or a personal guarantee.

Lesson Summary

- Cash flow first, collateral second.
- Perfect and haircut collateral; only eligible security cuts provisions.
- Document, stamp, and watch limitation periods.

Exam Pointers — Very Important

- ★ Hypothecation vs pledge vs mortgage distinctions are classic short questions.

Lesson 5: Portfolio Management and Concentration Risk

Learning Objectives

- Explain concentration risk dimensions
- Apply SBP exposure limits
- Distinguish expected from unexpected loss
- Use stress tests and diversification

Concentration risk — too much exposure to one borrower, group, sector, or region — is what kills banks. SBP's Prudential Regulations cap per-party and group exposures (single obligor limits); the large-exposure framework limits the sum of big tickets. Sector caps (e.g., textiles, real estate) and product caps prevent correlated defaults: in a downturn, all textile borrowers deteriorate together.

Portfolio tools: exposure reporting by rating grade, sector, tenor, and geography; migration matrices showing rating upgrades/downgrades; stress testing (what if the top 20 borrowers default? what if property prices fall 30%?). Economic capital models aggregate PD/LGD correlations into a portfolio loss distribution; unexpected loss (the tail) is what capital must cover, while expected loss is priced and provisioned.

Diversification is the free lunch — but within a small economy like Pakistan's, true diversification is hard; banks use syndication/participation to share large tickets and credit derivatives (rare locally) or simply hard limits. Name concentration in group

lending (business groups borrowing across multiple banks) needs consolidated supervision — SBP's group exposure rules address this.

Key Terms & Definitions

- Concentration risk — Correlated exposures that can fail together.
- Expected vs unexpected loss — EL = mean loss (provision); UL = volatility/tail (capital).
- Stress testing — Severe-scenario loss estimates for capital planning.
- Syndication — Multiple banks sharing one large facility.

Example / Illustration

- Two Rs. 50m loans: both to textile exporters (correlated, ρ high) vs one textile + one pharma (uncorrelated). Same expected loss, but the correlated pair has far higher unexpected loss — and needs more capital.

Lesson Summary

- Caps on single, group, and sector exposures.
- EL is provisioned; UL is capitalized.
- Stress-test correlated concentrations.

Exam Pointers — Very Important

- ★ Expected loss vs unexpected loss and why capital covers the latter is a key conceptual question.

Lesson 6: Problem Loans: Classification, Provisioning, Workout

Learning Objectives

- Detect early-warning signals
- Apply SBP classification and provisioning rules
- Design workout vs recovery strategies
- Explain rehabilitation frameworks

Problem loans are identified early via early-warning signals: account conduct (excess over limits, cheque returns, delayed financials), financial deterioration (falling margins, rising leverage), and qualitative signs (management exits, auditor resignation, loss of key customers, diversion of funds). SBP requires banks to classify delinquent assets: Substandard (90+ days), Doubtful (180+/1yr), Loss — with prescribed provisioning percentages (e.g., 25%/50%/100% net of FSV-based security benefit), tightening over time.

Workout strategy: restructure/reschedule (extend tenor, reduce rate — with SBP provisioning concessions for genuine rehabilitation), additional security, management

change, or sale of the business; recovery: enforcement via banking courts, sale of collateral, compromise settlements, write-off as last resort (write-offs need board approval and don't extinguish the legal claim). The Special Assets Management / SAM units handle large NPLs.

Prevention beats cure: disciplined origination, covenants (financial and negative — e.g., no further borrowing, dividend restrictions), regular reviews, and prompt action at the first signal. Pakistan's Corporate Rehabilitation Act framework and SBP's restructuring schemes provide formal rehabilitation channels.

Key Terms & Definitions

- Classification — Substandard/Doubtful/Loss by days overdue.
- Provisioning — P&L; charge against expected loss on classified assets.
- Restructure — Revised terms to rehabilitate a viable borrower.
- SAM — Special Assets Management unit for large NPLs.

Example / Illustration

- Rs. 20m loan, 200 days overdue, FSV of collateral Rs. 12m: classified Doubtful; provision $\approx 50\% \times (20 - 12) = \text{Rs. } 4\text{m}$ (illustrative; follow current SBP percentages).

Lesson Summary

- Catch problems early via conduct + financial signals.
- Classify by aging; provision net of eligible security.
- Restructure viable borrowers; enforce against the rest.

Exam Pointers — Very Important

- ★ Classification categories with provisioning rates are heavily tested — memorize the aging buckets.

Lesson 7: IFRS 9 Expected Credit Losses

Learning Objectives

- Explain the IFRS 9 ECL model
- Apply the three-stage classification
- Define SICR triggers
- Interpret coverage ratios

IFRS 9 replaced incurred-loss provisioning with expected credit loss (ECL): recognize lifetime ECL when credit risk increases significantly (Stage 2), 12-month ECL otherwise (Stage 1), and lifetime ECL on credit-impaired assets (Stage 3). $\text{ECL} = \text{PD} \times \text{LGD} \times \text{EAD}$, probability-weighted across scenarios and forward-looking (macroeconomic forecasts — GDP, rates — feed the models). Pakistani banks implemented IFRS 9 under SBP's phased

instructions; the day-one impact raised provisions materially.

Significant increase in credit risk (SICR): 30-days-past-due backstop, rating downgrades, watchlist placement. Staging drives both provisions and interest recognition (Stage 3 on net carrying amount). Model risk is real — ECL models need validation, governance, and management overlays where models miss emerging risks.

Disclosure: banks publish ECL sensitivities, staging movements, and coverage ratios (provisions/NPLs). Analysts and SBP supervisors scrutinize coverage — under-provisioning flatters profits but hides risk. Interaction with Basel: regulatory expected loss vs accounting ECL can differ; shortfalls may deduct from capital.

Key Terms & Definitions

- ECL — Expected credit loss; forward-looking, probability-weighted.
- Three stages — Stage 1: 12m ECL; Stage 2: lifetime ECL (SICR); Stage 3: impaired.
- SICR — Significant increase in credit risk; triggers Stage 2.
- Coverage ratio — Provisions ÷ NPLs; adequacy indicator.

Example / Illustration

- Rs. 100m portfolio: Stage 1 (12m ECL 1% → Rs. 1m), Stage 2 (30m, lifetime 8% → Rs. 2.4m), Stage 3 (5m, LGD 60% → Rs. 3m). Total ECL ≈ Rs. 6.4m.

Lesson Summary

- IFRS 9: forward-looking ECL, not incurred loss.
- Stage by SICR; lifetime ECL from Stage 2.
- Models need validation and overlays.

Exam Pointers — Very Important

- ★ The three stages and 12-month vs lifetime ECL distinction are the core IFRS 9 exam points.

Lesson 8: Market Risk and VaR

Learning Objectives

- Define market-risk components
- Compute and interpret VaR
- Explain IRRBB gap and duration measures
- Describe limit structures

Market risk: losses from movements in interest rates, FX, equity prices, commodities. Trading-book positions are marked to market; Value at Risk (VaR) — the maximum loss over a horizon at a confidence level (e.g., 1-day 99% VaR = Rs. 5m means losses exceed

Rs. 5m only 1% of days) — is the standard metric, computed via historical simulation, variance-covariance, or Monte Carlo. Back-testing (comparing VaR to actual P&L;) validates the model; Basel's Fundamental Review of the Trading Book (FRTB) is shifting standards toward expected shortfall.

Interest-rate risk in the banking book (IRRBB): gap analysis (rate-sensitive assets minus liabilities per time bucket), duration, and earnings-at-risk / EVE (economic value of equity) measures. Pakistani banks carry large government-securities books — PIB/T-bill price risk when rates move — managed within SBP's market-risk limits.

FX risk: net open positions (NOP) in each currency, capped by SBP; banks hedge with forwards/swaps. Equity and commodity risks are smaller locally but governed by the same VaR/limit framework. Limits cascade: board risk appetite → VaR limits → desk/stop-loss limits, with independent risk monitoring.

Key Terms & Definitions

- VaR — Value at Risk; loss threshold at a confidence level.
- Back-testing — VaR vs actual P&L; model validation.
- Gap analysis — RSA – RSL per bucket; earnings sensitivity to rates.
- NOP — Net open FX position; SBP-capped.

Example / Illustration

- 1-day 99% VaR of Rs. 5m on the FX desk: on 99% of days the loss is below Rs. 5m; breaches (≈2–3/year) trigger model review.

Lesson Summary

- VaR quantifies trading risk; back-test it.
- IRRBB: gaps, duration, EVE for the banking book.
- Limits flow from board appetite to desks.

Exam Pointers — Very Important

- ★ VaR definition/interpretation and gap-analysis mechanics are the standard market-risk questions.

Lesson 9: Operational Risk, Fraud, and Cyber

Learning Objectives

- Define operational-risk categories
- Explain Basel III standardized measurement
- Use RCSA, KRIs, loss data
- Describe fraud, cyber, BCP controls

Operational risk: loss from failed processes, people, systems, or external events — fraud, errors, IT outages, legal settlements, floods. Basel III's standardized approach computes capital from the Business Indicator (a income-based proxy); earlier approaches (BIA, TSA, AMA) are superseded. Management: RCSA (risk & control self-assessments), KRIs (key risk indicators — e.g., failed trades, system downtime), incident/loss data collection, and action tracking.

Fraud and cyber risk dominate Pakistani banking concerns: phishing, SIM-swap, insider fraud — SBP's Enterprise Technology Governance and Cyber Security Framework mandates controls, incident reporting, and board oversight. Business continuity (BCP/DR drills) keeps critical operations alive through disruptions; the 2022 floods tested this industry-wide.

Legal and compliance risk: regulatory penalties, AML/CFT failures (SBP's AML regulations, FMU reporting of STRs/CTRs), and conduct risk. The three-lines-of-defence model: business owns risk (1st), risk/compliance oversees (2nd), internal audit assures (3rd). Culture — tone from the top, whistleblowing, consequence management — is the ultimate control.

Key Terms & Definitions

- RCSA — Risk & control self-assessment by business units.
- KRI — Key risk indicator; early-warning metric.
- Three lines of defence — Business / risk-compliance / internal audit.
- STR/CTR — Suspicious/currency transaction reports to FMU.

Example / Illustration

- KRI: 'unreconciled Nostro entries > 5 days' breaches its threshold → RCSA action: daily reconciliation; incident logged; capital via BI formula unaffected short-term but loss data feeds future calibration.

Lesson Summary

- Op risk: processes, people, systems, externals.
- Capital via Business Indicator; manage via RCSA/KRIs.
- Cyber, fraud, AML are the live fronts in Pakistan.

Exam Pointers — Very Important

- ★ Basel III standardized approach (Business Indicator) and the three lines of defence are key theory points.

Lesson 10: Liquidity Risk and ALM

Learning Objectives

- Define liquidity risk and its sources
- Compute and interpret LCR and NSFR
- Explain Pakistani funding-structure issues
- Describe ALCO and contingency funding

Liquidity risk: inability to meet obligations as they fall due — the risk that actually kills banks (Northern Rock, and locally, stressed DFIs). Basel III's LCR (liquidity coverage ratio: high-quality liquid assets $\div$ 30-day net outflows $\geq$ 100%) and NSFR (net stable funding ratio: stable funding for long-term assets $\geq$ 100%) are the twin standards, implemented by SBP. Intraday liquidity and contingency funding plans (CFP) complete the framework.

Pakistani context: banks fund long-term assets with short-term deposits; ADR (advances-to-deposits ratio) is watched (SBP incentivizes higher ADR via additional reserve requirements on low-ADR banks). Deposit concentration (top-20 depositors' share), reliance on institutional/wholesale funding, and government-borrowing crowding-out shape liquidity planning. Stress tests: retail run-off, wholesale freeze, rating-downgrade triggers.

Asset-liability management (ALCO): the committee setting the balance-sheet strategy — pricing, tenor, and funding mix — within board risk appetite. Funds transfer pricing (FTP) charges business units for liquidity/term risk, aligning incentives.

Key Terms & Definitions

- LCR — $\text{HQLA} \div \text{30-day net cash outflows} \geq 100\%$.
- NSFR — $\text{Available stable funding} \div \text{required stable funding} \geq 100\%$.
- ADR — Advances-to-deposits ratio; SBP-linked incentives.
- ALCO — Asset-liability committee; owns balance-sheet strategy.

Example / Illustration

- HQLA Rs. 120m, 30-day net outflows Rs. 100m $\rightarrow$ LCR = 120% ✓. If corporate deposits flee (outflows jump to Rs. 130m), LCR = 92% ✗ — activate the CFP: repo T-bills, borrow interbank.

Lesson Summary

- LCR (30-day) and NSFR (structural) $\geq 100\%$.
- Watch ADR, deposit concentration, wholesale reliance.
- ALCO + FTP + CFP = liquidity management.

Exam Pointers — Very Important

★ LCR and NSFR definitions ($\geq 100\%$) and what HQLA means are standard questions.

Lesson 11: Risk-Adjusted Pricing, Culture, Governance

Learning Objectives

- Compute RAROC and EVA
- Explain risk-based pricing
- Describe credit culture and its failures
- Outline risk governance structures

Risk-adjusted performance: $\text{RAROC} = \text{risk-adjusted return} \div \text{economic capital}$; $\text{EVA} = \text{profit} - (\text{capital} \times \text{hurdle rate})$. A loan earning 15% with 12% expected loss + capital cost may destroy value — pricing must cover $\text{PD} \times \text{LGD} \times \text{EAD}$ plus the cost of unexpected-loss capital plus operating costs plus target margin. Funds transfer pricing allocates funding/liquidity costs; risk-based pricing differentiates spreads by rating grade.

Credit culture: the shared norms deciding whether standards hold under growth pressure — 'character lending' vs 'collateral lending' debates, the discipline to say no, and incentive design (don't reward volume without risk adjustment). Pakistan's 1990s/2000s NPL crises were culture failures as much as analytical ones; SBP's fit-and-proper and governance rules target this.

Governance: board risk committee approves risk appetite; CRO (independent, board access) owns the framework; credit committees decide within delegated authorities; internal audit tests compliance. SBP's Corporate Governance Regulatory Framework codifies board responsibilities. Ethics: insider lending (related-party/connected lending caps), conflicts of interest, and fair treatment — violations destroy franchises faster than bad models.

Key Terms & Definitions

- RAROC — Risk-adjusted return on capital; vs hurdle rate.
- EVA — Economic value added; profit minus capital charge.
- Risk appetite — Board-level statement of acceptable risk.
- CRO — Chief Risk Officer; independent risk function head.

Example / Illustration

- Loan: return Rs. 2m, EL Rs. 0.5m, operating cost Rs. 0.3m, economic capital Rs. 10m at 15% hurdle $\rightarrow \text{RAROC} = (2 - 0.5 - 0.3)/10 = 12\% < 15\% \text{ hurdle} \rightarrow \text{reprice or decline}$.

Lesson Summary

- Price EL + capital cost + expenses + margin.
- Culture and incentives decide whether models matter.
- Board appetite → CRO → committees → audit.

Exam Pointers — Very Important

- ★ RAROC formula and 'why price for both EL and UL' is the capstone conceptual question.

Lesson 12: SBP Prudential Regulations in Depth

Learning Objectives

- Map SBP regulation sets to banking segments
- Apply exposure and DSR limits
- Explain SBP inspection and penalties
- Handle regulation-application cases

SBP's Prudential Regulations for Corporate/Commercial Banking are the binding rulebook: per-party exposure limits, clean (unsecured) exposure caps, provisioning and classification rules, related-party (connected lending) restrictions, and large-exposure reporting. Separate regulation sets govern SME financing (encouraging cash-flow-based lending to small firms), Agricultural financing (mandatory targets, passbook system, crop/loan insurance), Consumer financing (caps on auto/housing/personal loans, DSR — debt-service-ratio — limits for individuals), and Microfinance (MFB prudential regulations).

Key corporate-banking rules to know: maximum per-party limit as a percentage of equity; aggregate large exposures; provisioning percentages by classification; and restrictions on lending against banks' own shares or to directors' interests. SBP inspects compliance through on-site inspection and off-site surveillance (quarterly returns); violations draw penalties and provisioning directives.

Why examiners love this: questions ask you to apply a regulation to a case ('can the bank lend Rs. X to this group?'). Learn the structure and the famous numbers (per-party caps, DSR caps, classification buckets) — exact percentages should follow the current SBP circular, but the framework is stable.

Key Terms & Definitions

- Per-party limit — Maximum exposure to one borrower/group as % of equity.
- DSR — Debt service ratio; consumer-finance affordability cap.
- Connected lending — Restrictions on lending to directors/related parties.
- Off-site surveillance — SBP's quarterly-return monitoring of banks.

Example / Illustration

- Individual's monthly income Rs. 200,000; existing debt service Rs. 60,000; proposed car-loan installment Rs. 30,000. $DSR = 90,000/200,000 = 45\%$ — within a typical 50% cap ✓ (illustrative).

Lesson Summary

- Corporate, SME, Agri, Consumer, Microfinance — each has its rulebook.
- Per-party caps, DSR caps, provisioning rules are the teeth.
- SBP supervises on-site and off-site.

Exam Pointers — Very Important

- ★ 'Apply the per-party limit' and DSR-limit case questions are standard — know which regulation set governs which segment.

Lesson 13: Loan Pricing and KIBOR Mechanics

Learning Objectives

- Build a loan pricing stack
- Explain KIBOR-based pricing
- Compare fixed vs floating risk allocation
- Compute all-in yield

Loan pricing: base rate (KIBOR of matching tenor, or the SBP policy rate corridor) + credit spread (rating-grade-driven) + term/liquidity premium + operating cost allocation + target margin – relationship value. The spread must at minimum cover expected loss ($PD \times LGD \times EAD$) and the cost of economic capital for unexpected loss. Risk-based pricing grids publish spreads per rating grade; weak borrowers pay more — which itself can worsen adverse selection, so pricing works with covenants and security, not alone.

KIBOR (Karachi Interbank Offered Rate) is the benchmark for corporate lending; floors (minimum lending rates) and SBP's markup regulations constrain pricing freedom. Fixed vs floating: floating-rate loans pass rate risk to borrowers (raising their default risk when rates rise — wrong-way interaction); fixed-rate loans keep IRRBB with the bank.

Negotiation levers beyond rate: fees (arrangement, commitment on undrawn lines), cash-collateral/margin requirements, covenants, and cross-sell (deposits, FX, trade business). Effective yield includes all of these — compare facilities on all-in yield, not headline rate.

Key Terms & Definitions

- KIBOR — Karachi Interbank Offered Rate; corporate pricing benchmark.
- Credit spread — Risk premium over base, by rating grade.
- All-in yield — Rate + fees + margins; the true return.
- Adverse selection — Higher rates attract worse borrowers; price with care.

Example / Illustration

- 3m KIBOR 20%, spread 250 bps (rating), term premium 50 bps, opex 80 bps, EL 60 bps, capital cost 120 bps, target margin 100 bps → all-in $\approx$ 26.6%. Quote with fees to reach the hurdle.

Lesson Summary

- Price = base + spread(EL) + capital cost + opex + margin.
- Spreads by rating grade; KIBOR benchmark.
- Judge facilities on all-in yield.

Exam Pointers — Very Important

- ★ Build an all-in pricing build-up (base + spread + costs) — a classic numerical.

Lesson 14: Country Risk and Cross-Border Lending

Learning Objectives

- Distinguish sovereign, transfer, political risk
- Apply the sovereign ceiling principle
- Describe sovereign analysis indicators
- Explain cross-border mitigants

Country risk: cross-border lending faces sovereign risk (government default — Pakistan's Eurobond spreads price this), transfer risk (borrower can pay locally but FX can't leave the country), and political risk (expropriation, sanctions, conflict). Banks set country limits and price via sovereign spreads; SBP's FE (Foreign Exchange) Manual governs cross-border exposures of Pakistani banks.

Sovereign analysis mirrors corporate credit: debt/GDP, reserves/import cover, fiscal deficit, IMF program status, political stability. Pakistan's repeated IMF programs are the context examiners expect you to know — program reviews move the sovereign rating, which moves every Pakistani borrower's ceiling (the 'sovereign ceiling' principle: few borrowers rate above their sovereign).

Mitigants: multilateral guarantees (MIGA/DFC), export-credit agency cover, offshore collateral/escrow, and short tenors. Correspondent banking (Nostro/Vostro) carries related settlement (Herstatt) risk — managed via CLS, netting, and counterparty limits.

Key Terms & Definitions

- Sovereign risk — Government default risk; the country ceiling.
- Transfer risk — FX can't exit though the borrower is solvent locally.
- Sovereign ceiling — Borrowers rarely rate above their sovereign.
- Herstatt risk — FX settlement risk; time-zone gap in payment.

Example / Illustration

- Pakistani sovereign spread 600 bps over US Treasuries → a Pakistani corporate's USD borrowing costs at least ~600 bps over, whatever its own strength — the ceiling binds.

Lesson Summary

- Country risk = sovereign + transfer + political.
- Ceiling: borrowers capped near the sovereign.
- Mitigate with guarantees, ECAs, escrow, short tenors.

Exam Pointers — Very Important

- ★ Sovereign ceiling and transfer vs sovereign risk distinctions are favourite theory questions.

Lesson 15: Stress Testing and ICAAP

Learning Objectives

- Design macro stress scenarios
- Explain ICAAP and Pillar 2
- Perform reverse stress testing
- Use results in capital planning

Stress testing: apply severe-but-plausible scenarios (GDP -3%, rates +500 bps, PKR -25%, property -30%) to the portfolio and measure losses, NPLs, CAR, and liquidity. SBP requires banks to run prescribed macro scenarios; ICAAP (Internal Capital Adequacy Assessment Process, Basel II Pillar 2) makes banks prove they hold enough capital for their own risk assessment — including risks Pillar 1 misses (concentration, IRRBB, strategic).

Reverse stress testing asks: what breaks us? Find the scenario that breaches capital or liquidity, then judge its plausibility. This flips the mindset from 'pass the test' to 'find the cliff' — supervisors increasingly demand it.

Results feed capital planning (buffers, dividend policy), risk appetite (limits tightened where stress losses concentrate), and recovery planning (actions if triggers breach). Governance: board owns the scenarios; models need independent validation; SBP reviews ICAAP submissions and can impose Pillar 2 capital add-ons.

Key Terms & Definitions

- Stress test — Severe-scenario loss, capital, liquidity impact.
- ICAAP — Pillar 2: bank's own capital-adequacy assessment.
- Reverse stress test — Find the scenario that breaks the bank.
- Pillar 2 add-on — SBP's extra capital for risks Pillar 1 misses.

Example / Illustration

- Scenario: textile NPLs jump to 25% → provisions Rs. 8bn → CAR falls 12.5% → 9.8% < 10%+buffers → capital plan: retain dividends, raise Tier-2.

Lesson Summary

- Stress tests measure capital/liquidity under scenarios.
- ICAAP: prove your own capital adequacy (Pillar 2).
- Reverse tests find the cliff; boards own the process.

Exam Pointers — Very Important

- ★ ICAAP's purpose (Pillar 2, own-risk capital) vs Pillar 1 minimums is the key distinction to state.

Lesson 16: Credit Derivatives and Securitization

Learning Objectives

- Explain CDS and total-return swaps
- Describe securitization and tranching
- Analyze the 2008 crisis mechanism
- Assess the Pakistani market state

Credit derivatives transfer credit risk without selling the loan: a credit default swap (CDS) pays a premium for protection that pays out on default — like insurance on a bond. Total-return swaps and credit-linked notes are variants. Securitization pools loans (mortgages, auto loans) into an SPV that issues tranching securities: senior tranches are protected by subordinated ones absorbing first losses — the mechanism at the heart of the 2008 crisis when subprime MBS tranches failed together.

Uses: concentration relief, regulatory capital relief (if significant risk transfer is recognized), and funding. Dangers: model risk on correlations, complexity opacity, and counterparty risk (AIG's CDS book). Post-crisis rules demand risk retention ('skin in the game'), simpler structures (STS securitization in Europe), and central clearing of standardized CDS.

Pakistani market: barely existent — no active CDS market, securitization limited to a few transactions (housing finance pilots). The lesson for exams is conceptual: explain the instruments, the tranching waterfall, and why 2008 happened, then note the local

market's nascent state.

Key Terms & Definitions

- CDS — Credit default swap; protection premium vs default payout.
- Securitization — Pooling loans into tranching SPV securities.
- Tranching waterfall — Losses absorbed bottom-up: equity → mezz → senior.
- Skin in the game — Mandatory risk retention by originators.

Example / Illustration

- Rs. 1bn pool, tranches: equity 5% (first loss), mezzanine 10%, senior 85%. Losses of 8% wipe equity, eat 3% of mezzanine; senior untouched — until losses exceed 15%.

Lesson Summary

- Derivatives transfer risk; securitization tranches it.
- Waterfall: junior absorbs first losses.
- 2008 = correlated defaults + opacity + leverage.

Exam Pointers — Very Important

- ★ The tranching waterfall and 2008's lessons are the standard essay question here.

Lesson 17: SME, Agri, Consumer, and Digital Lending

Learning Objectives

- Explain SME/agri/consumer appraisal differences
- Describe SBP's targeted schemes
- Apply cash-flow assessment without audited accounts
- Assess digital-lending risks

SME lending: Pakistan's SMEs face a financing gap — banks prefer collateralized corporate lending, so SBP pushes cash-flow-based SME assessment, credit guarantee schemes (e.g., SBP's SME Asaan Finance/credit guarantee), and simplified regulations. Appraisal emphasizes business cash flows, owner character, and cluster/market knowledge over audited financials (often absent).

Agricultural finance: SBP sets mandatory agri-lending targets; the passbook (land-record-based) system, warehouse receipt financing, crop/loan insurance, and value-chain financing (mill→farmer) structure the risk. Climate and price volatility are the core risks — index-based crop insurance is the modern mitigant.

Consumer & microfinance: scored, high-volume, small-ticket — statistical scorecards, DSR caps, and bureau (eCIB/DataCheck) screening replace relationship judgment;

microfinance adds group/social collateral. Digital lending (BNPL, nano-loans via mobile wallets) is the growth frontier — and the emerging NPL concern, with SBP issuing digital-lending conduct rules.

Key Terms & Definitions

- Financing gap — SMEs' unmet credit demand vs bank risk appetite.
- Passbook system — Land-record-based agri-lending documentation.
- Credit scoring — Statistical default prediction for retail tickets.
- Digital lending — App-based nano-loans; conduct-regulated growth frontier.

Example / Illustration

- SME loan Rs. 5m: no audited accounts → assess via 12-month bank-statement cash flows (average monthly credits Rs. 2m, DSCR on proposed service 1.4×) + market reputation + 50% guarantee cover → approve with quarterly reviews.

Lesson Summary

- SME/agri: cash flows + guarantees + targets.
- Retail: scorecards + DSR + bureaus.
- Digital lending is the new frontier — and risk.

Exam Pointers — Very Important

- ★ Contrast corporate relationship lending vs scored retail lending — an examiner favourite comparison.

Lesson 18: Revision: Credit & Risk Management Drill

Learning Objectives

- Run a timed mixed-topic drill
- Apply the case-answer structure
- Recall all formulas from memory
- Self-assess readiness

Drill (two per lesson): (1) expected loss from PD/LGD/EAD; (2) apply the 5 Cs to a case; (3) interest cover + D/E interpretation; (4) spot evergreening in a case; (5) CAR computation; (6) Z-score classification; (7) collateral type identification; (8) FSV haircut coverage; (9) concentration: correlated vs diversified EL/UL; (10) single-obligor limit check; (11) classification bucket + provision; (12) workout vs recovery decision; (13) IFRS 9 staging of three facilities; (14) ECL estimate; (15) VaR interpretation; (16) gap-analysis sign; (17) op-risk category sorting; (18) three-lines-of-defence mapping; (19) LCR computation; (20) RAROC pricing decision; (21) per-party limit case; (22) all-in pricing build-up; (23) sovereign-ceiling pricing; (24) stress-scenario CAR impact; (25) tranching waterfall losses; (26) SME cash-flow appraisal. Formula sheet: $EL =$

PD×LGD×EAD; CAR = capital/RWA; DSCR; interest cover; LCR/NSFR ≥ 100%; RAROC; Z-score; ECL stages.

Case-method tip: VU exams blend theory with mini-cases — always structure answers as: identify the risk → quantify (ratios/formulas) → apply the rule (SBP/Basel/IFRS 9) → recommend (approve/price/restructure/decline). Examiners reward the recommendation step most.

Final checklist: Basel II vs III; IRB inputs; SBP provisioning buckets; IFRS 9 stages; VaR; LCR/NSFR; RAROC; 5 Cs; collateral types; concentration; EWS; KIBOR pricing; ICAAP; securitization. If each term triggers a definition plus a formula, you're ready.

Key Terms & Definitions

- Formula sheet — EL, CAR, DSCR, LCR/NSFR, RAROC, Z-score — one page.
- Case structure — Risk → quantify → rule → recommend.
- Checklist — The fourteen must-know topics above.
- Past papers — Apply the structure under timed conditions.

Lesson Summary

- Twenty-six drills across all lessons.
- Four-step case structure wins marks.
- Formula sheet + checklist = final prep.

Exam Pointers — Very Important

- ★ Practice the four-step case structure (risk → quantify → rule → recommend) on every past paper.