

Introduction to Banking and Finance Problem Solving

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Study guide – concise, organized, and easy to read

1. Core Concepts

Concept	Definition	Why It Matters
Banking	Intermediation of funds between savers and borrowers; includes deposit taking, lending, payment services, and risk management.	Drives liquidity, credit creation, and economic stability.
Finance	Management of money, assets, and liabilities to achieve objectives (investment, financing, risk mitigation).	Provides the framework for allocating capital efficiently.
Problem Solving	Systematic approach to identify, analyze, and resolve quantitative or qualitative issues in banking/finance.	Enables sound decision-making, compliance, and value creation.

2. Typical Problem Solving Frameworks

2.1 The “5-Step” Method

1. **Define the problem** – clarify scope, stakeholders, and desired outcome.
2. **Gather data** – financial statements, market data, regulatory reports, internal metrics.
3. **Analyze** – use ratios, models, or simulations to uncover root causes.
4. **Develop solutions** – generate alternatives, assess feasibility, and forecast impact.
5. **Implement & monitor** – execute the chosen solution and track key performance indicators (KPIs).

2.2 Decision Tree/Scenario Analysis

- Map possible actions ? assign probabilities & outcomes ? calculate expected values.
- Useful for credit risk, investment appraisal, and product launch decisions.

2.3 Financial Modeling

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- Build a spreadsheet model (income statement, balance sheet, cash flow).
- Perform **sensitivity analysis** (change one variable at a time) and **what-if analysis** (multiple variables).

3. Common Problem Types & Tools

Problem Area	Typical Question	Analytical Tool(s)
Credit Risk	"Will the borrower default?"	Credit scoring models, logistic regression, Z-score, Monte Carlo simulation.
Liquidity Management	"Do we have enough cash to meet obligations?"	Cash flow waterfall, liquidity coverage ratio (LCR), net stable funding ratio (NSFR).
Profitability	"How can we improve net interest margin?"	Interest rate gap analysis, product level profitability (RONA), cost to income ratio.
Capital Adequacy	"Are we meeting Basel III requirements?"	Tier 1/Tier 2 capital calculations, stress testing, RAROC (risk adjusted return on capital).
Investment Valuation	"What is the fair value of this bond?"	Discounted cash flow (DCF), yield to maturity (YTM), option adjusted spread (OAS).
Regulatory Compliance	"Is our AML program effective?"	Transaction monitoring rules, false positive rate analysis, scenario based testing.

4. Step-by-Step Example: Assessing a Loan Application

1. **Define** – Determine if the loan meets the bank's risk appetite and profitability targets.
2. **Collect Data** – Borrower's financial statements, credit bureau score, collateral details, industry outlook.
3. **Analyze**
 - **Liquidity ratios** (Current, Quick) ? ability to meet short-term obligations.
 - **Leverage ratios** (Debt/Equity, Debt/EBITDA) ? long-term solvency.
 - **Cash flow analysis** ? Debt service coverage ratio (DSCR).
 - **Credit score** ? probability