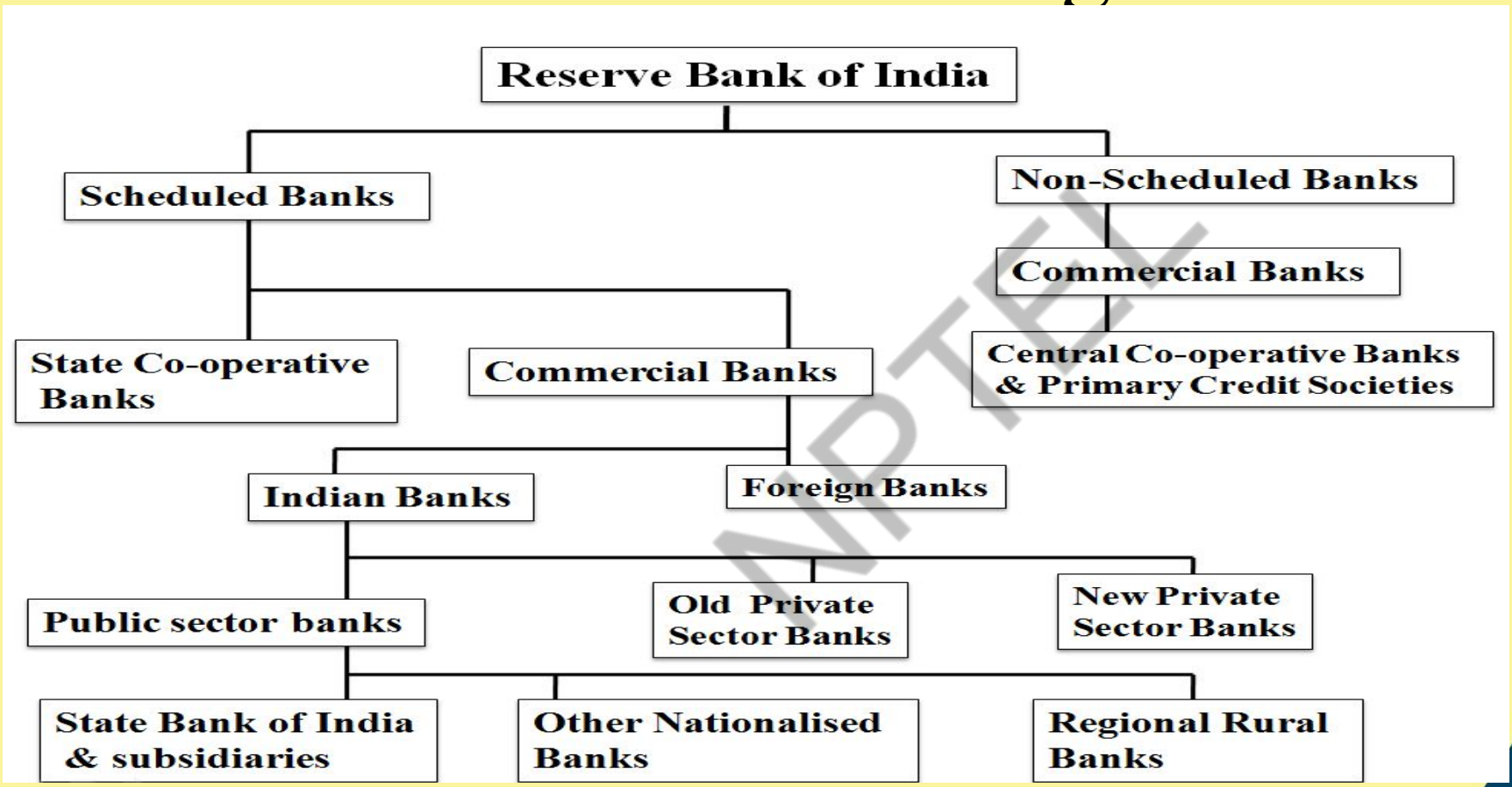


NPTEL ONLINE CERTIFICATION COURSES

Financial Institutions and Markets
Prof. Jitendra Mahakud
Department of Humanities and Social Sciences
Indian Institute of Technology Kharagpur

Commercial Bank: Structure and Services

Structure of Indian Banking Sector



NPTEL

Theoretical Basis of Banking Operations

- Balancing Profitability with liquidity
- Management of Reserves
- Creation of Credit
- Process of Money Creation
  - The ratio of new deposits to the original increase in reserves is called the **money multiplier** or **credit multiplier** or **deposit multiplier**. This multiplier will be equal to the reciprocal of the required cash reserve ratio (1/CRR).

NPTEL

Special Role of Banks

- Creation & Channelising credit for productive investment
- Act of Economic support system
- Economies of Scale
- Economies of Scope
- Monetary Policy transmission mechanism
- Social welfare, Social justice and Trust

NPTEL

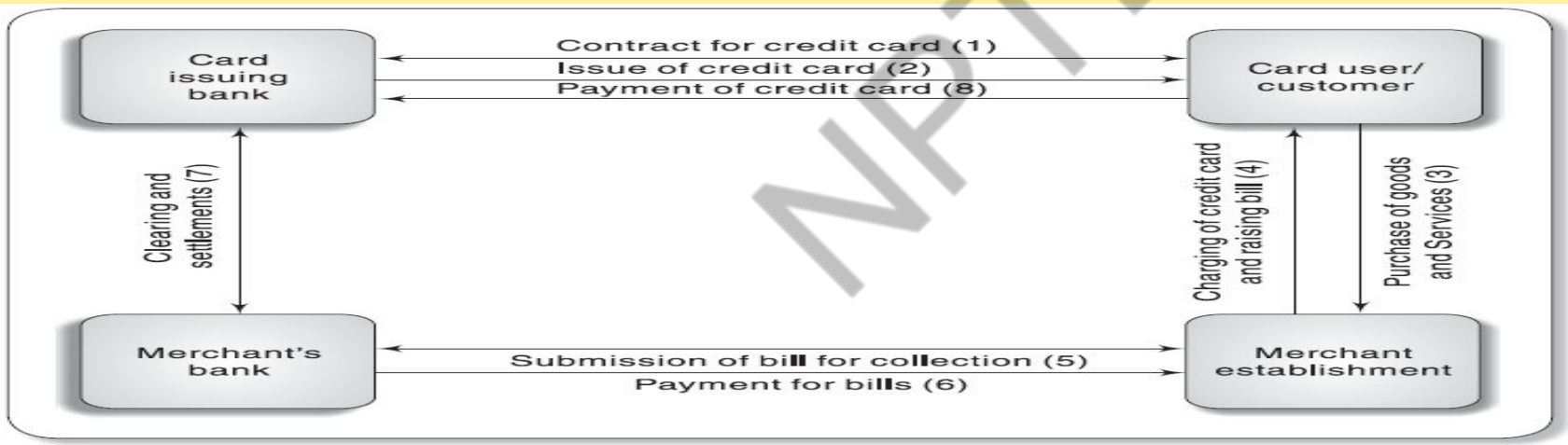
Services Provided by Commercial Banks

- Acceptance of deposits
- Lending money or advancing of loans
- Investment of funds
- Remittance of funds
- Dealing in foreign exchange
- Overdraft Facility
- Discounting of Bills of Exchange
- Credit Cards
- Automatic Teller Machines (ATMs) Services
- Debit cards
- Online banking
- Private banking
- Mobile banking
- Public Provident Fund Account

NPTEL

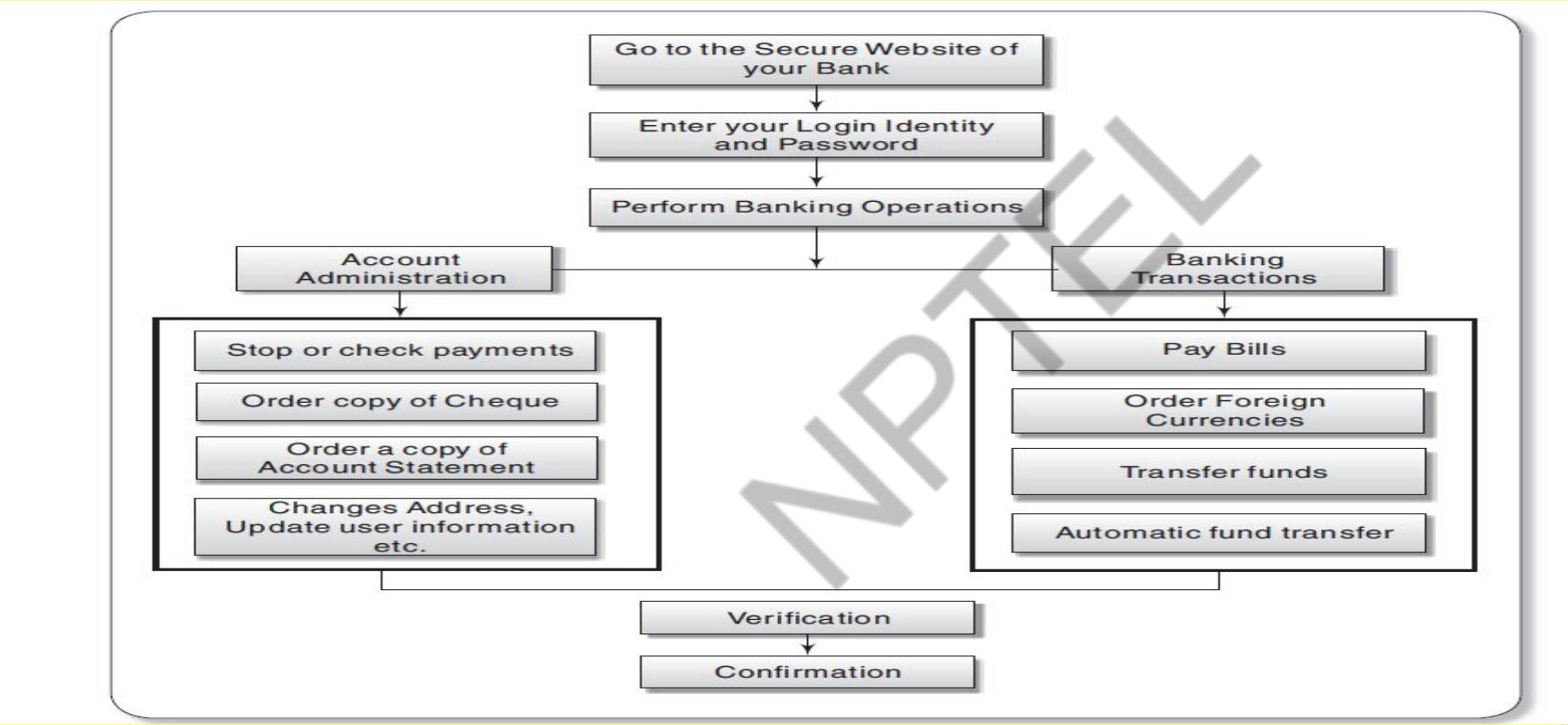
Credit Card Cycle

S. No.	Steps	Function
1	Credit purchases	A cardholder purchases goods/services and gives the credit card
2	Processing of credit card	Merchant establishment delivers goods after taking an authenticated credit card and noting the number and taking signatures
3	Raising of bill	The merchant establishment raises the bill for the purchase and sends it to the credit card-issuing bank for payment.
4	Making payment	The issuing bank pays the amount to the merchant establishment.
5	Bills to the cardholder	The issuing bank raises bill on the credit cardholder and sends it for payment.
6	Card payment	The credit cardholder makes the payment to the issuing bank.



NPTEL

Online Banking Process



NPTEL

Reference

•Bhole, L. M., and Mahakud, J. *Financial institutions and markets: structure, growth and innovations, 6e*. Tata McGraw-Hill Education, 2017.

NPTEL



FREE ONLINE EDUCATION
swayam
शिक्षित भारत, उन्नत भारत

NPTEL ONLINE CERTIFICATION COURSES

Thank you!

NPTEL



NPTEL ONLINE CERTIFICATION COURSES

Financial Institutions and Markets

Prof. Jitendra Mahakud
Department of Humanities and Social Sciences
Indian Institute of Technology Kharagpur

Commercial Bank: Financial Statements

NPTEL

Bank Financial Statements

- The balance sheet
  - A bank's balance sheet presents the organization's financial condition at a single point of time. Balance sheets are always prepared on a particular date i.e. usually the last day of the quarter or year.
- Income statement
  - The income statement shows all major revenues and expenditures, the net profit or loss for the period, amount of dividends declared and it measures the bank's financial performance over a period of time such as a quarter or year.

NPTEL

Liabilities of the Commercial Bank

- Share capital
- Reserves and surplus
- Deposits
- Borrowings
- Other liabilities and provisions

NPTEL

Types of Bank Deposits

- **Demand deposits**
  - **Current deposits**: These are chequable accounts, there are no restrictions on the amount or the number of withdrawals from these accounts and does not carry any interest
  - **Savings deposits**: cheques can be drawn, withdrawn from an account without previous notice are restricted
  - Call deposits: They are accepted from fellow bankers and are repayable on demand. These deposits carry an interest charge
- **Term deposits (Fixed deposits)**
  - They have different maturity periods on which the rate of interest depends

NPTEL

Factors Affecting Composition of Bank Deposits

- Increase in national income
- Expansion of banking facilities in new areas and for new classes of people
- Increase of banking habit
- Increase in the relative rates of return on deposits
- Increase in deficit financing.
- Increase in bank credit.
- Inflow of deposits from Non-Resident Indians (NRIs).
- Growth of substitutes

NPTEL

- Cash in hand,
- Balances with the central bank
- Balances with the other banks
- Money at call and short notice
- Balances with banks outside India
- Investments in government and other approved securities
- Bank credit
- Fixed assets
- Other assets

NPTEL

Investments, Loans and Advances

- **Investments**
  - Govt. of India Securities (SLR securities)
  - Other-approved securities (SLR securities)
  - Non-approved securities (non-SLR securities)
- **Loans and Advances**
  - Cash Credits And Overdrafts
  - Purchase And Discounting Of Commercial Bills
  - Demand And Term Loans

NPTEL

Approaches to Bank Lending

- **Liquidation Approach**
  - It looks mainly to the assets of the borrower as security for a loan. It implies a short-term rather than a long-term view of the borrowers' prospects and usually involves taking a charge of his assets
- **Going Concern Approach**
  - It lays greater emphasis on the borrower's ability to repay the loan out of future cash flow rather than his ability to offer some tangible assets as security for the loan

NPTEL

Margins

- The loan made by a bank against a given security is always less than the value of that security. This difference is known as a "margin".
- The extent of margin differs from security to security; the major principles which determine it are marketability, ascertainability of value, stability of value, and transferability of title of the security
- Certain margin requirements which are in vogue in India are: (a) gold bullion-10 per cent; (b) gold ornaments-20 to 30 per cent; (c) government and other trustee securities-10 per cent; (d) ordinary shares-40 to 50 per cent; (e) preference shares-25 per cent;(f) debentures-15 to 20 per cent; (g) life policies-90 per cent of surrender value; (h) commodities- 25 to 50 per cent; (i) immovable property-50 per cent.

NPTEL

Reference

•Bhole, L. M., and Mahakud, J. *Financial institutions and markets: structure, growth and innovations, 6e*. Tata McGraw-Hill Education, 2017.

NPTEL



FREE ONLINE EDUCATION
swayam
शिक्षित भारत, उन्नत भारत

NPTEL ONLINE CERTIFICATION COURSES

Thank you!

NPTEL



NPTEL ONLINE CERTIFICATION COURSES

Financial Institutions and Markets

Prof. Jitendra Mahakud
Department of Humanities and Social Sciences
Indian Institute of Technology Kharagpur

Commercial Bank Performance

NPTEL

Major Items in Income Statement

(i)	Interest income from loans
(ii)	Total interest expenses (interest on borrowings made by banks)
(iii)	Net interest income (i – ii)
(iv)	Non-interest income
(v)	Total operating income (iii + iv)
(vi)	Overhead expenses
(vii)	Provision for loans and leases
(viii)	Securities gains (losses)
(ix)	Pre-tax operating income [v – (vi + vii) + viii]
(x)	Tax
(xi)	Net operating income
(xii)	Net income (xi – any extraordinary items)

NPTEL

Bank Performance Measures

$$\text{ROA (\%)} = \frac{\text{Net Income}}{\text{Total Assets}} \times 100$$

$$\text{ROE (\%)} = \frac{\text{Net Income}}{\text{Total Equity Capital}} \times 100$$

The relationship between ROA and ROE can be expressed as follows:

$$\frac{\text{Net Income}}{\text{Total Equity Capital}} = \frac{\text{Net Income}}{\text{Total Assets}} \times \frac{\text{Total Assets}}{\text{Total Equity}}$$

ROE = ROA × Equity Multiplier or leverage.

NPTEL

Bank Performance Measures Cont…

$$\text{Net Interest Margin (\%)} = \frac{\text{Total Interest Income} - \text{Total Interest Expenses}}{\text{Average Earning Assets}} \times 100$$

$$\text{Provision for Loan Loss Ratio (\%)} = \frac{\text{Provisions for Loan Losses}}{\text{Total Loans}} \times 100$$

$$\text{Temporary Investments Ratio (\%)} = \frac{\text{Government securities sold + Investment securities with maturities of 1 year or less + Due from banks}}{\text{Total Loans}} \times 100$$

NPTEL

Bank Performance Measures Cont…

$$\text{Volatility Liability Dependency Ratio (\%)} = \frac{\text{Total Volatile Liabilities} - \text{Temporary Investments}}{\text{Net Loans and Leases}} \times 100$$

$$\text{Rupee Gap Ratio (\%)} = \frac{\text{Interest Rate Sensitive Assets} - \text{Interest Rate Sensitive Liabilities}}{\text{Total Assets}} \times 100$$

$$\text{Loan Ratio (\%)} = \frac{\text{Net Loans}}{\text{Total Loans}} \times 100$$

NPTEL

FREE ONLINE EDUCATION swayam शिक्षित भारत, उन्नत भारत

Non-Performing Assets (NPA)

- A non-performing asset shall be a loan or an advance where the interest and/or installment of principal remain overdue for a period of more than 90 days in respect of the Loan
- For agricultural loans a loan granted for short duration crops will be treated as NPA, if the installment of principal or interest thereon remains overdue for two crop seasons and a loan granted for long duration crops will be treated as NPA, if the installment of principal or interest thereon remains overdue for one crop season

NPTEL

Asset Classifications

- **Standard Asset:** Standard Asset is one which does not disclose any problems and which does not carry more than normal risk attached to the business. Such an asset should not be an NPA
- **Sub-Standard Asset:** An asset would be classified as sub-standard if it remained NPA for a period less than or equal to 12 months.
- **Doubtful Asset:** An asset is required to be classified as doubtful, if it has remained NPA for more than 12 months
- **Loss Asset:** A loss asset is one where loss has been identified by the bank or internal or external auditors or by the Co-operation Department or by the Reserve Bank of India inspection but the amount has not been written off, wholly or partly

NPTEL

Capital Base of the Banks

- As per Basle Norms Capital to Risk (weighted) Assets Ratio (CRAR) should be at least 8 percent
- Capital is split into two categories: Tier I and Tier II. These categories represent different instruments' quality as capital. Tier I capital consists mainly of share capital and disclosed reserves and it is a bank's highest quality capital because it is fully available to cover losses. Tier II capital on the other hand consists of certain reserves and certain types of subordinated debt

NPTEL

Drivers of Retail Business in India

- Economic prosperity and the consequent increase in purchasing power
- Changing consumer demographics indicate vast potential for growth in consumption
- Technological innovations
- Decline in treasury income of the banks
- Retail loans have put comparatively less provisioning burden on banks

NPTEL

Reference

•Bhole, L. M., and Mahakud, J. *Financial institutions and markets: structure, growth and innovations, 6e*. Tata McGraw-Hill Education, 2017.

NPTEL



FREE ONLINE EDUCATION
swayam
शिक्षित भारत, उन्नत भारत

NPTEL ONLINE CERTIFICATION COURSES

Thank you!

NPTEL



NPTEL ONLINE CERTIFICATION COURSES

Financial Institutions and Markets

Prof. Jitendra Mahakud
Department of Humanities and Social Sciences
Indian Institute of Technology Kharagpur

Basel Accords

NPTEL

Basle-I

- Capital regulations under Basel I came into effect in December 1992
- Objectives:
  - to require banks to maintain enough capital to absorb losses without causing systemic problems,
  - to avoid competitiveness conflicts
- Consists of four-pillars
  - **Constituents of capital:** *Tier 1 capital* consisting of (a) Paid-up share capital/common stock (b) Disclosed reserves and *Tier 2 capital* consisting of undisclosed reserves, Revaluation reserves, General provisions/general loan-loss reserves, Hybrid debt capital instruments and Subordinated term debt
  - **Risk weighting system:** *The risk weights (credit risk)* include only five weights: 0, 10, 20, 50 and 100%.
  - **The target standard ratio:** *A target standard ratio* is the ratio of capital to weighted risk assets set at 8% (of which the core capital element has to be at least 4%).
  - **Transitional and implementation arrangements**

NPTEL

Basel-I Cont…

- Risk weighted amount (RWA) consists of
  - sum of risk weight times asset amount for on-balance sheet items
  - Sum of risk weight times credit equivalent amount for off-balance sheet items
  - Amendments (1998): Banks to measure and hold capital for market risk for all instruments in addition to the BIS Accord credit risk capital

NPTEL

Basel II

- Implemented in 2007
- **Consists of three pillars**
  - **Minimum capital Requirements:** the banks should measure the risk weighted assets providing the due weightage to the three types of risks such as credit risk, market risk and operational risk
  - **Supervisory Review Process:** It is basically intended to ensure that the banks should have enough capital bases to support all the risks associated with the banks business process.
  - **Market Discipline:** Disclosures of a bank's capital and risk-taking positions are recommended to be released to the general public

NPTEL

Definition of Capital

- Tier 1 capital + Tier 2 capital
- Total risk-weighted assets are determined by:
  - Multiplying the capital requirements for market risk and operational risk by 12.5 and adding the resulting figures to the sum of risk-weighted assets for credit risk.
- Tier one capital to total risk weighted credit exposures to be not less than 4 %
- Total capital (i.e. tier one plus tier two less certain deductions) to total risk weighted credit exposures to be not less than 8%
- Tier two capital may not exceed 100% of tier one capital

NPTEL

Supervisory Review and Market Discipline

- Banks should have a process for assessing and maintaining their overall capital adequacy.
- Supervisors should review and evaluate banks' internal capital adequacy assessments and strategies.
- Supervisors should expect banks to operate above the minimum regulatory capital ratios.
- Supervisors should intervene at an early stage to prevent capital from falling below the minimum levels
- The purpose of pillar three is to complement the pillar one and pillar two.
- Develop a set of disclosure requirements to allow market participants to assess information about a bank's risk profile and level of capitalization.

NPTEL

Basel III

- Basel III was developed by the Basel Committee on Banking Supervision in 2010–11 and was scheduled to be introduced from 2013.
- Objectives
  - To improve the banking sector's ability to absorb shocks arising from financial and economic stress, whatever the source,
  - To improve risk management and governance
  - To strengthen banks' transparency and disclosures.

NPTEL

Basel III Cont…

- **Better Capital Quality:** Introduction of much stricter definition of capital. Better quality capital means the higher loss-absorbing capacity. Greater focus on common equity.
- **Capital Conservation Buffer:** Banks will be required to hold a capital conservation buffer of 2.5%
- **Countercyclical Buffer:** The buffer will range from 0% to 2.5%, consisting of common equity or other fully loss-absorbing capital
- **Minimum Common Equity and Tier 1 Capital Requirements:** The minimum requirement for common equity, the highest form of loss-absorbing capital, has been raised under Basel III from 2% to 4.5% of total risk-weighted assets

NPTEL

Basel III Cont…

- **Leverage Ratio:** Basel III norms include a leverage ratio to serve as a safety net. A leverage ratio is the relative amount of capital to total assets (not risk-weighted). 3% leverage ratio of Tier 1 will be tested before a mandatory leverage ratio is introduced in January 2018

- **Systemically Important Financial Institutions (SIFI)** : As part of the macro-prudential framework, systemically important banks will be expected to have loss-absorbing capability beyond the Basel III requirements.

NPTEL

Basel III Cont…

- **Liquidity Ratios:** Under Basel III, a framework for liquidity risk management will be created. A new Liquidity Coverage Ratio (LCR) and Net Stable Funding Ratio (NSFR) are to be introduced in 2015 and 2018, respectively
- The NSFR is defined as the amount of available stable funding relative to the amount of required stable funding.
- “Available stable funding” (ASF) is defined as the portion of capital and liabilities expected to be reliable over the time horizon considered by the NSFR, which extends to one year. The amount of stable funding required ("Required stable funding") (RSF) of a specific institution is a function of the liquidity characteristics and residual maturities of the various assets held by that institution as well as those of its off-balance sheet (OBS) exposures.
- Liquidity coverage ratio is the ratio of high quality liquid assets to total net cash outflows over next 30 calendar days

NPTEL

Comparison between Basel-II and III

Requirements	Under Basel II	Under Basel III
Minimum Ratio of Total Capital To RWAs	8%	10.50%
Minimum Ratio of Common Equity to RWAs	2%	4.50% to 7.00%
Tier I capital to RWAs	4%	6.00%
Core Tier I capital to RWAs	2%	5.00%
Capital Conservation Buffers to RWAs	None	2.50%
Leverage Ratio	None	3.00%
Countercyclical Buffer	None	0% to 2.50%
Minimum Liquidity Coverage Ratio	None	Yes
Minimum Net Stable Funding Ratio	None	Yes
Systemically important Financial Institutions Charge	None	Yes

NPTEL

References

- Bhole, L. M., and Mahakud, J. *Financial institutions and markets: structure, growth and innovations, 6e*. Tata McGraw-Hill Education, 2017.
- https://www.bis.org/

NPTEL



FREE ONLINE EDUCATION
swayam
शिक्षित भारत, उन्नत भारत

NPTEL ONLINE CERTIFICATION COURSES

Thank you!

NPTEL



NPTEL ONLINE CERTIFICATION COURSES

Financial Institutions and Markets

Prof. Jitendra Mahakud
Department of Humanities and Social Sciences
Indian Institute of Technology Kharagpur

Risk Measures in Commercial Banks

NPTEL

Credit Risk

- Standardized Approach
- Foundation IRB Approach
- Advanced IRB Approach

NPTEL

FREE ONLINE EDUCATION
swayam
शिक्षित भारत, उन्नत भारत

Standardised Approach

- In determining the risk weights in the standardised approach, banks may use assessments by external credit assessment institutions.

$$\sum(\text{Risk Weight for Assets} \times \text{Book Valus of Assets})$$

NPTEL

IRB Approach

- It is based on banks' internal assessment. The approach combines the quantitative inputs provides by banks and formula specified by the Committee.
- Four quantitative inputs (risk components):
  - Probability of default (PD)
  - Loss given default (LGD)
  - Exposure at default (EAD)
  - Maturity (M)

NPTEL

Market Risk

- Interest rate risk, Price risk and reinvestment risk
- Standardised method
  - the standards of the Committee
- Internal models
  - use banks' internal assessments
  - Value at Risk (VaR)

NPTEL

Operational Risk

- Risk of loss resulting from inadequate or failed internal processes, people and systems or from external events
- Basic Indicator Approach
- Standardized Approach
- Internal Management Approach

NPTEL

Approaches

- Basic Indicator Approach
  - OR(BIA) = GI * α
    - GI = average annual gross income(three years, excepted the negative amounts)
    - α = 15%
- Standardized Approach
  - OR (SA)= $\Sigma GI_{1-8} * \beta$
    - GI_{1-8} = average annual gross income from business line from one to eight (three years, excepted the negative amounts)
    - β = A fixed percentage set by the Committee (15% for Banks)
- Internal Management Approach
  - Under the AMA, the regulatory capital requirement will equal the risk measure generated by the bank's internal operational risk measurement system using the quantitative and qualitative criteria for the AMA.
  - Use of the AMA is subject to supervisory approval.

NPTEL

Sources of Operational Risk

- Wrong/delayed decisions and lack of accountability
- Inadequate MIS & Obsolete policies,
- Incompetency of staff and lack of proper training
- Lack of succession planning and development of second line
- Non compliance with circulars, policies, and regulatory requirements
- Involvement of staff in frauds and forgeries
- Failure of technological equipment
- Natural calamities and unanticipated changes
- Deterioration of bank image due to poor services, staff behaviour, frauds, high NPAs, etc.

NPTEL

Liquidity Risk

- Inability to meet the bank's liabilities as they become due.
- Unable to generate cash to meet funds withdrawals, commitment credit or increase in assets.
- mismatches in the maturity pattern of assets and liabilities.

NPTEL

Approaches

Working Funds Approach

- Owned funds — The liquidity requirements will be nil.
- Deposits
  - (i) Volatile funds
  - (ii) Vulnerable funds
  - (iii) Stable funds.

  — The liquidity requirements depend on the maturity profile
- Float funds — The liquidity requirements is highly sensitive

Cash Flows Approach

- Estimate anticipated changes in deposits.
- Estimate the cash inflows by way of loan recovery
- Estimate the cash outflows by way of deposit withdrawals and credit accommodations.
- Forecast these for the end of each period.
- Estimate the liquidity needs over the planning horizon.

NPTEL

Techniques to quantify and manage liquidity risk

- Reserve requirements
- Liquidity ratio
- Degree of asset and liability cash flow mismatch
- Degrees of diversification of borrowing facilities and contingent loan commitments

NPTEL

References

- Bhole, L. M., and Mahakud, J. *Financial institutions and markets: structure, growth and innovations, 6e*. Tata McGraw-Hill Education, 2017.
- https://www.bis.org/

NPTEL



FREE ONLINE EDUCATION
swayam
शिक्षित भारत, उन्नत भारत

NPTEL ONLINE CERTIFICATION COURSES

Thank you!

NPTEL