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MANAGEMENT OF COMMERCIAL BANKING

PROF. JITENDRA MAHAKUD
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Module 06: Management of Liabilities, Capital and Off-Balance Sheet Activities of Commercial Banks

Lecture 51: Management of Deposits-I

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CONCEPTS COVERED

- Types of Deposit Accounts
- Effective interest rate

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Introduction

- Deposits are a key element in defining what a banking firm really does and what critical roles it really plays in the economy
- Moreover, deposits provide much of the raw material for making loans and, thus, may represent the ultimate source of profits and growth for a depository institution
- Two key issues every depository institution must deal with in managing the public's deposits
  1. Where can funds be raised at lowest possible cost?
  2. How can management ensure that the institution always has enough deposits to support lending and other services the public demands?

Types of Deposit Accounts

- **Demand Deposits**
  - **Funds deposited can be withdrawn by the depositor at any time without any advanced notice to banks. The ownership of demand deposits can be transferred from one person to another via cheques or electronic transfers. There is no fixed term to maturity.**
- **Two Types of demand deposits**
  - **Savings Accounts**
  - **Current Accounts**

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Types of Deposit Accounts …

- **Savings Accounts**
  - Accrue interest at a fixed rate set by the commercial banks.
  - restrictions on the number of withdrawals as well as on the amounts of withdrawals during any specified period.
  - Minimum balances may be prescribed in order to offset the cost of maintaining and servicing such deposits
- **Current Accounts**
  - The bank is obliged to pay the money on demand.
  - The Current accounts don't bear any interest
  - Cost to maintain the accounts is high and banks ask the customers to keep a minimum balance

Types of Deposit Accounts …

- **Term Deposits**
  - Deposits with fixed tenure
  - Interest rate depends upon the tenure and amount of deposit.
  - This rate varies from bank to bank.
  - The interest rate is generally higher for time deposits of longer tenure
- **Three types of term deposits**
  - Fixed deposits
  - Re-investment deposits
  - Recurring deposits

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Types of Deposit Accounts …

- Fixed deposit
  - A fixed rate of interest is paid at fixed, regular intervals
- Re-investment deposit
  - Interest is compounded quarterly and paid on maturity, along with the principal amount of the deposit. In the Flexi Deposits amount in savings deposit accounts beyond a fixed limit is automatically converted into term-deposits.
- Recurring deposit
  - Fixed amount is deposited at regular intervals for a fixed term and the repayment of principal and accumulated interest is made at the end of the term

Types of Deposit Accounts …

- **Non Resident Ordinary Accounts: (NRO):** Any person resident outside of India can open this account. When a resident becomes a non resident, his domestic rupee account gets converted into the NRO account. This helps the NRI to get his credits which accrue in India.
- **Non-Resident (External) Rupee Account:** It's a Rupee account and the NRI can remit money to India from the funds abroad.
- **Foreign Currency Non-Resident Account: (FCNR):** This account is opened by the NRIs in 6 designated currencies as follows: US Dollar (USD) Great Britain Pound (GBP) Euro (EUR) Japanese Yen (JPY) Canadian dollar (CAD) and Australian dollar (AUD)

Nominal versus Effective Rate

Apart from the annual compounding, if the interest is compounded ,monthly/quarterly/half-yearly, the effective rate of interest for such periods will be different from the nominal rate

$$R = \left(1 + \frac{k}{m}\right)^{m} - 1$$

where,

R=effective Rate

k=Nominal Rate

m= Frequency of compounding per year

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Nominal versus Effective Rate: Example

If the nominal rate of interest on a 2 year term deposit is 10 percent and if the interest amount is compounded on a quarterly basis then the effective rate can be assessed as:

$$R = \left(1 + \frac{0.1}{4}\right)^4 - 1 = 10.38\%$$

Fixed Deposit Scheme: Example

For a 2 year FD deposit of Rs. 100,000 with ABC Bank Ltd., the interest rate is 11%

a. Ascertain the interest amounts if payment is made on a quarterly, half yearly & annual basis

b. What should be the interest rate if the interest is withdrawn every month and transferred to the savings bank account

Solution

a.	**Interest amount**		**11%**		
	Quarterly interest amount	**=**	**100000 X 0.11/4**	**=**	**2750.00**
	Half-yearly interest amount	**=**	**100000 X 0.11/2**	**=**	**5500.00**
	Annual interest amount	**=**	**100000 X 0.11**	**=**	**11000.00**
b.	**Saving rate of interest**	**=**	**4%**		
	Discounted Monthly Interest	**=**	**(100000 X 0.11)/ (12 + 0.04)**	**=**	**913.62**

This can be verified by adding monthly interest of 3 months & interest earned during that period is:

= (913.62 X 3) + (913.62 X 0.04 X 3/12) = 2750.00

Thus interest rate that ABC can pay on INR 100000 FD, if the interest amounts are withdrawn every month will be 10.96% (i.e. 913.62 X 12/ 100000)

Reinvestment Scheme

To ascertain maturity amount in a re-investment scheme, the following expression can be used:

$$RI_m = RI(1+r)^n$$

where,

RI_m = Deposit amount at the end of the reinvestment period

RI = Initial deposit amount

r = Effective rate = $\left(1+\frac{k}{m}\right)^m - 1$

n = Number of years

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Reinvestment Scheme: Example

If a depositor opens a re-investment account at ABC Bank Ltd. the interest rate offered will be 10% for 1 year scheme, 11% for 2 years scheme and 12 % for 3 year scheme. Find the maturity amount for a quarterly re-investment of INR 20,000 for a period of 2 years

Solution:

The amount at the end of re-investment period can be assessed as follows:

$RI_m = RI(1 + r)^n$

$= 20000(1+r)^2$

Since the quarterly re-investment ,

$r= (1 + \frac{0.11}{4})^4 - 1 = 11.46\%$

$RI_m = 20000(1+0.1146)^2 = 24846.66$

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Cash Certificate

Issue Price= PV = Face Value($PIVFA_{n,k}$)

where,

N = Tenor

K = Interest rate

Cash Certificate

Given that interest rate is 14% p.a. on a certificate having a value of INR 100 after 1 year, calculate the issue price of the cash certificate

Solution:

Since it is reinvested quarterly;

Effective rate (r) = $\left(1+\frac{k}{m}\right)^{m}-1=\left(1+\frac{0.14}{4}\right)^{4}-1$ **= 14.75%**

Issue Price= PV = Face Value(PIVFA$_{n,k}$)

$$=\frac{100}{(1+k)^{n}}=\frac{100}{(1+0.1475)^{1}}=INR\ 87.14$$

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Recurring Deposit Scheme

To arrive at the amount on maturity, the future value of annuity is be calculated as:

$RD_m = RD(FVIFA_{n,k})$

where,

RD_m = Maturity value of deposit

RD = Installment amount

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Recurring Deposit Scheme

Compute the maturity value of a monthly installment of INR 1000 for 12 months, if the interest rate applied is 8 percent p.a. and computed quarterly

Effective rate (r) = $\left(1+\frac{k}{m}\right)^{m}-1=\left(1+\frac{0.08}{4}\right)^{4}-1$= 8.24%

Rate of interest per month = 0.69%

Maturity value = FVA_n= A[$FVIFA_{n,k}$] = $A\left[\frac{(1+k)^{n}-1}{k}\right] = 1000\left[\frac{(1+0.0069)^{12}-1}{0.0069}\right]$

= INR 12463.77

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CONCLUSION

- Commercial banks provide various types of deposits to cater the demand for the depositors.
- The interest rates vary across the type of deposits.
- The calculation should be made on the basis of effective interest rate in stead of nominal interest rate

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Module 06: Management of Liabilities, Capital and Off-Balance Sheet Activities of Commercial Banks

Lecture 52: Management of Deposits-II

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CONCEPTS COVERED

- Pricing Deposit- Related Services
- Pricing Deposits at Cost Plus Profit Margin
- Using Marginal Cost to Set Interest Rates on Deposits
- Pricing Based on the Total Customer Relationship and Choosing a Depository

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Pricing of Deposits

- Management needs to pay a high enough interest rate to customers to attract
- But must avoid paying interest rate so costly that it erodes the potential profit margin from using customer funds

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Pricing Deposits

- **Development of interest bearing chequable deposits offered financial managers the opportunity to consider the pricing of deposit services : *below cost pricing***
  - **Customer charges were set below the true level of operating and overhead costs associated with providing deposit services**
  - **Substantially increased rate of return to customer known as *implicit interest rate* – the difference between the true cost of supplying fund-raising services and the service change actually assessed to customer**

Pricing Deposits at Cost Plus Profit Margin

- Deregulation increased competition, and raised the average real cost of a deposit for deposit service providers
- More frequent use of unbundled service pricing
  - Deposits were priced separate from other services
- Each deposit service is often priced high enough to recover all or most of cost of providing that service using the cost-plus pricing method:

Unit price charged the customer for each deposit service	=	Operating expense per unit of deposit service	+	Estimated overhead expense allocated to deposit service function	+	Planned profit margin from each service unit sold

Pricing Deposits at Cost Plus Profit Margin

Estimating deposit services cost:

- Tying deposit prices to cost of deposit –service production has encouraged service providers to match prices and costs more closely and eliminate many formerly free services
- Cost plus pricing demands an accurate calculation of the cost of each deposit service
- This requires management to
  1. Calculate the cost rate of each source of funds (adjusted for reserves required by the central bank, deposit insurance fees, and float)
  2. Multiplying each cost rate by the relative proportion of all funds coming from the popular sources
  3. Sum of all resulting products to drive the weighted average cost of all funds raised
- This pooled-funds cost approach is based on assumption that it is not the cost of each type of deposits that matter, rather the weighted average cost of all funding sources for each depository institution

Pricing Deposits at Cost Plus Profit Margin: Example

Problem:

- Suppose a depository institution has raised a total of $800 million
  - ✓ Amount as checkable deposits $200 million
  - ✓ Amount in saving and time deposit $400 million
  - ✓ Amount borrowed from money market $100 million
  - ✓ Amount from owners in form of equity capital $100 million
- Equity capital costs an estimated 22% of any new capital raised
- Interest and non interest costs spent to attract :
  - ✓ Checkable deposit: 10% of checkable deposit
  - ✓ Thrift deposit: 11% of thrift deposit
  - ✓ Money market borrowing: 11% of money market borrowing
- Reserve requirements, deposit insurance fees and uncollected balances reduce amount of money by:
  - ✓ 15% for checkable deposits
  - ✓ 5% for thrift deposits
  - ✓ 2% for borrowing in the money market

Pricing Deposits at Cost Plus Profit Margin: Example

Solution:

Institutions weighted average before-tax cost of funds would be:

$$(Checkbook\ deposits \div Total\ funds\ raised) \times \left(\frac{Interest\ and\ noninterest\ fund\ raising\ costs}{100\% - \%reserve\ requirements\ and\ float}\right)$$
$$+ (Time\ \&savings\ deposits \div Total\ funds\ raised)$$
$$\times \left(\frac{Interest\ and\ noninterest\ fund\ raising\ costs}{100\% - \%reserve\ requirements\ and\ float}\right) + (Owner's\ capital \div Total\ funds\ raised)$$
$$\times \left(\frac{Interest\ and\ noninterest\ costs}{100\%}\right)$$

=$200 million/$800 million X 10% /(100% - 15%)
+$400 million/$800 million X 11% /(100% - 5%)
+$100 million/$800 million X 11% / (100% - 2%)
+$100 million/$800 million X 22% / 100%
=25.78%

Using Marginal Cost to Set Interest Rates on Deposits

Marginal Cost Approach:

- Marginal cost: added cost of bringing new funds
- Marginal and not historical average cost should be used to to help price funds
- Frequent changes in interest rate makes historical average costs a treacherous standard for pricing
  - If interest rates are declining, marginal cost of raising new funds may fall below historical average cost over all funds used
  - If interest rates increase, marginal cost of today's new money may substantially exceed the historical cost

Using Marginal Cost to Set Interest Rates on Deposits

Marginal cost= Change in total cost = (New interest rate X Total funds raised at new rate) – (Old interest rate X total funds raised at old rate)

and

$$Marginal\ cost\ rate = \frac{Change\ in\ total\ cost}{Additional\ funds\ raised}$$

Marginal cost approach Example

Expected amounts of deposits that will flow in	Average interest the bank will pay on new funds	Total interest cost of new funds ($)	Marginal cost of new deposit money ($)	Marginal cost as a percentage of new funds attracted (%)	Expected marginal revenue (return) from investing the new funds	Difference between marginal revenue and marginal cost rate	Total profits earned (after interest cost) ($)
30	7%	2.10	2.1	8.4%	10%	2%	0.900
60	7.50%	4.50	2.4	9.6%	10%	0%	1.500
90	8%	7.20	2.7	10.8%	10%	-1%	1.800
120	8.50%	10.20	3	12.0%	10%	-2%	1.800
150	9%	13.50	3.3	13.2%	10%	-3%	1.500

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Using Marginal Cost to Set Interest Rates on Deposits

- Marginal cost approach provides information on
  - Setting deposit interest rate
  - Deciding how far institution should go in expanding its deposit base before the added cost of deposit growth catches up with additional revenues and total profits begin to decline
- When profits start to fall: either find new sources of funding with lower marginal costs or identify new assets promising greater marginal revenue, or both

Using Marginal Cost to Set Interest Rates on Deposits

Conditional Pricing

- Depository sets up a schedule of fees in which customer pays a low fee or no fee if the deposit balance remains above some minimum level, but faces a higher fee if average balance falls below minimum
  - Customer pays a price conditional on how they use deposit
- Deposit prices vary based on one or more of these factors:
  - Number of transactions passing through account
  - Average balance held in the account over a designated period
  - Maturity of deposits in days, weeks or month

Using Marginal Cost to Set Interest Rates on Deposits

Conditional Pricing

- Economist Constance Dunham classified checking account conditional pricing schedule into three broad category: (1)flat-rate pricing, (2)free pricing and (3) conditionally free pricing
  1. Flat-rate pricing: depositor's cost is a fixed charge per check, per time or both
  2. Free pricing: absence of a monthly account maintenance fee or per-transaction charge
  3. Conditionally free pricing: favors large denomination deposits because services are free if account balance stays above some minimal figure

Pricing Based on the Total Customer Relationship and Choosing a Depository

- Targeting the best customers for special treatment according to the number of services the customer uses
- Customers who choose two or more services may be granted lower deposit fees
- Idea: selling multiple services to customers increases the customer's dependence; makes it harder to go elsewhere
- Relationship pricing promoted greater customer loyalty and less sensitive to prices offered by competitive firms

Pricing Based on the Total Customer Relationship and Choosing a Depository

Factors customers and businesses consider when choosing institution:

In Choosing a Financial Firm to Hold Their Checking Transaction Accounts, Households Consider	In Choosing a Financial Firm to Hold Their Savings Deposits, Households Consider	In Choosing a Financial Firm to Supply Their Deposits and Other Services, Business Firms Consider
1. Convenient location. 2. Availability of many other services. 3. Safety. 4. Low fees and low minimum balance. 5. High deposit interest rates.	1. Familiarity. 2. Interest rate paid. 3. Transactional convenience (not location). 4. Location. 5. Availability of payroll deduction. 6. Fees charged.	1. Financial health of lending institution. 2. Whether bank will be a reliable source of credit in the future. 3. Quality of bank officers. 4. Whether loans are competitively priced. 5. Quality of financial advice given. 6. Whether cash management and operations services are provided.

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CONCLUSION

- The price the deposits depends on the different costs associated with the deposit servicing.
- The models used for pricing deposits are cost plus profit margin, marginal cost of funds, conditional pricing, pricing based on customer relationship etc.

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Module 06: Management of Liabilities, Capital and Off-Balance Sheet Activities of Commercial Banks

Lecture 53: Management of Non-Deposit Liabilities

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CONCEPTS COVERED

- Liability management and customer relationship doctrine
- Non-deposit liabilities of commercial banks
- Factors affecting non-deposit sources of funding

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Introduction

- The traditional source of funds for banks is the deposit account
- What does management do to find new money when deposit volume is inadequate to support all loans and investments these banks would like to make?

Customer Relationship Doctrine

- The first priority of a lending institution is to make loans to all those customers from whom the lender expects to receive positive net earnings
- All loans and investments whose returns exceed their cost and whose quality meets the lending institution's credit standards should be made
- If enough deposits are not immediately available to cover these loans and investments, then management should seek out the lowest-cost source of borrowed funds available to meet its customers' credit needs

Customer Relationship Doctrine…

- The bank buys funds in order to satisfy loan requests and reserve requirements
- It is an interest-sensitive approach to raising bank funds
- It is flexible – The bank can decide exactly how much they need and for how long
- The control mechanism to regulate incoming funds is the price of funds

Alternative Non-deposit Sources of Funds

- Borrowings from Interbank Market
- Repurchase Agreements
- Borrowing from Central Bank
- Negotiable CDs
- Commercial Paper
- Long-Term Non-deposit Funds Sources

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Inter-bank Market

- Mostly the call money market helps the banks to borrow the money without collateral from other banks
- The loans made in this market are of a short-term nature, their maturity varying between one day to a fortnight.
- Federal Funds Market in USA
  - Immediately available reserves are traded between financial institutions and usually returned within 24 hours
  - Deposits with correspondent banks and demand deposit balances of security dealers and governments can be used for loans to institutions
  - Types of Fed Funds Loan Agreements
    - Overnight Loans
      - Negotiated via wire or telephone, returned the next day
      - Normally not secured by specific collateral
    - Term Loans
      - Longer term Fed funds contracts (several days, weeks, or months)
    - Continuing Contracts
      - Automatically renewed each day
      - Normally between smaller respondent institutions and their larger correspondents

Call Rates

- The rate of interest paid on call loans is known as the call rate. The call rate is highly variable from day to day, and often from hour to hour. It is very sensitive to changes in demand for and supply of call loans.
- The call rate has been freely determined by the market forces since 1989.
- Mostly the call rate in India is defined as interbank call rate.

Reasons for Call Rate Volatility

- Requirement for CRR needs create excess demand for liquidity in call money market
- Over extended credit position of Banks
- Occasional market disruptions
- Heavy withdrawal by Institutional investors
- Liquidity crisis in money market
- Sluggish demand in bank deposit with heavy pressure for non-food credit in the banking sector crating asset liability mismatch
- Causality in foreign exchange market and call money market
- Structural deficiencies in the Banking Sector

Collateralised Borrowing and Lending Obligation (CBLO)

- CBLO is another money market instrument operated by the Clearing Corporation of India Ltd. (CCIL), for the benefit of the entities who have either no access to the interbank call money market or have restricted access in terms of ceiling on call borrowing and lending transactions.
- It was operationalised with effect from January 20, 2003
- CBLO is a discounted instrument available in electronic book entry form for the maturity period ranging from one day to ninety days (up to one year as per RBI guidelines).
- In order to enable the market participants to borrow and lend funds, CCIL provides the Dealing System through Indian Financial Network (INFINET), a closed user group to the Members of the Negotiated Dealing System (NDS)

Collateralised Borrowing and Lending Obligation (CBLO) Cont…

- It is an obligation by the borrower to return the money borrowed, at a specified future date
- Provides authority to the lender to receive money lent, at a specified future date with an option/privilege to transfer the authority to another person for value received
- It is underlying charge on securities held in custody (with CCIL) for the amount borrowed/lent.

Repurchase Agreements (RPs)

- Viewed as collateralized government funds transactions
- With RPs, the purchaser of funds provides collateral in the form of marketable securities, reducing the credit risk
- An RP transaction is often for overnight funds

$$\text{Interest cost of RP} = \text{Amount borrowed} \times \text{Current RP rate} \times \frac{\text{Number of days in RP borrowing}}{360 \text{ days}}$$

Borrowing from Central Banks

- The central bank makes the loan through its discount window by crediting the borrowing institution's reserve account
- Each loan made by the central banks must be backed by collateral acceptable to the central bank
- Several types of loans available:
  - Primary Credit
    - This loan is available for short terms and to institutions in sound financial condition
    - Rate is slightly higher than the money market rate
  - Secondary Credit
    - These loans are available at a higher interest rate to institutions not qualifying for primary credit
  - Seasonal Credit
    - These loans cover longer periods than primary credit for small and medium institutions experiencing seasonal swings in deposits and loans

Development and Sale of Large Negotiable CDs

- An interest-bearing receipt which shows the evidence of the deposit of funds in the bank for a specified period of time for a specified interest rate
- It is considered a hybrid account since it is legally a deposit
- Interest rates on fixed-rate CDs are quoted on an interest-bearing basis and the rate is computed assuming a 360-day year
- Represent the majority of all large negotiable CDs issued
  - Suppose a depository institution promises an 8 percent annual interest rate to the buyer of a $100,000 six-month (180-day) CD
  - The depositor will have the following at the end of six months

$$\begin{aligned}\text{Amount due CD customer} &= \text{Principal} + \text{Principal} \times \frac{\text{Days to maturity}}{360 \text{ days}} \times \text{Annual rate of interest} \\ &= \$100{,}000 + \$100{,}000 \times \frac{180}{360} \times 0.08 \\ &= \$104{,}000\end{aligned}$$

Commercial Paper Market

- Commercial paper consists of short-term notes, with maturities normally ranging from three or four days to nine months, issued by well-known companies to raise working capital
- The notes are generally sold at a discount from face value through security dealers or through direct contact with the issuing company
- This funds source tends to be high in volume and moderate in cost but also volatile in available capacity and subject to credit risk

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Choosing among Alternative Non-deposit Sources

- **The demand for nondeposit funds is determined basically by the size of the gap between the institution's total credit demands and its deposits and other available monies**
- **Gap is based on:**
  - **Current and projected demand and investments the bank desires to make**
  - **Current and expected deposit inflows and other available funds**
- **Size of this gap determines the need for nondeposit funds**

Available funds gap (AFG) = Current and projected loans and investments the lending institution desires to make − Current and expected deposit inflows and other available funds

Non-deposit Funding Sources: Factors to Consider

1. The relative costs of raising funds from each source
2. The risk (volatility and dependability) of each funding source
3. The length of time (maturity or term) for which funds are needed
4. The size of the institution that requires more funds
5. Regulations limiting the use of alternative funds sources

Formula for doing cost comparisons among alternative sources of funds

$$\text{Effective cost rate on deposit and nondeposit sources of funds} = \frac{\text{Current interest cost on amounts borrowed} + \text{Noninterest costs incurred to access these funds}}{\text{Net investable funds raised from this source}}$$

where

$$\text{Current interest cost on amounts borrowed} = \text{Prevailing interest rate in the money market} \times \text{Amount of funds borrowed}$$

$$\text{Noninterest costs to access funds} = \text{Estimated cost rate representing staff time, facilities, and transaction costs} \times \text{Amount of funds borrowed}$$

$$\text{Net investable funds raised} = \text{Total amount borrowed less legal reserve requirements (if any), deposit insurance assessments (if any), and funds placed in nonearning assets}$$

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CONCLUSION

- The first priority of a lending institution is to make loans to all those customers from whom the lender expects to receive positive net earnings
- Major sources of non-deposit sources of borrowings are Borrowings from Interbank Market, Repurchase Agreements, Borrowing from Central Bank, Negotiable CDs, Commercial Paper and Long-Term Non-deposit Funds Sources

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Lecture 54: Management of Off-Balance Sheet Activities-I

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CONCEPTS COVERED

- Guarantees
- Letters of Credit

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Off-Balance sheet Activities

- Net impact of global volatility has increased variability of profits in financial market: Increase in risk of doing business
- Off-balance-sheet activities are financial services developed in response to increased risk as well as need to satisfy customers' demand, generate stable fee income, and increase their capital ratios
- Do not appear in the balance sheets as assets or liabilities

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Off-Balance sheet Activities

- Most off balance sheet activities are commitments based on contingent claims
- Contingent claims: an obligation by a bank to provide funds if a contingency is realized

  Default by the party on whose behalf the obligation was written may trigger an immediate loss or may result in the bank acquiring a substandard claim
- Claims do not appear on the balance sheet until they are exercised
- Broad groups of off-balance sheet activities include
  (1) Financial Guarantees
  (2) Derivative Instrument
  (3) Other types of off-balance-sheet activities (trade finance, cash management)

Off-Balance sheet Activities

- Off-balance sheet activities generate fee income for banks
- Transforming the banking business from being deposit/lending institutions to being risk management institutions
- Some concerns:
  - How much total risk are banks taking in off-balance sheet activities?
  - What are the different kinds of risks involves?
  - To what extent should these activities be regulated?
  - Should reporting requirements for regulators and public be increased?

Guarantees

- An undertaking by a bank (the guarantor) to stand behind the current obligation of a third party, and to carry out that obligation if the third party fails to do so
- Example:

Bank makes a loan guarantee whereby it guarantees the repayment of a loan made from party A to party B

Assuming the guarantors credit is better than of borrower, the rate of return required by the market on the borrower's debt obligation is reduced

From banks perspective, fees ranging from 10 to 150 basis points are charged, depending on the reduction in the borrower's debt costs and risk exposure of the bank

Types of Guarantees

- **Financial Guarantee**
  - When the customer is required to perform financial obligations. Used in the place of cash deposit / earnest money.
- **Performance Guarantee**
  - When the customer is to perform a task or work. The bank will pay for the non-performance of work
- **Deferred Payment Guarantee**
  - Used for capital goods' imports. Amount has to be paid in future installments on agreed terms. The exporter requires a guarantee from importer's bank
- **Invocation Guarantee**
  - Amount claimed under the guarantee should be paid to the seller in accordance with the terms and conditions. Payment can not be withheld at the instance of the customer

Guarantee Guidelines

- The extent of monetary liability and the period of liability should be specific
- The guarantee can be issued for a maximum period of 10 years
- The guarantee should not be issued to those customers who enjoy credit facility with other banks

Letter of Credit

- It is an undertaking given by the bank on behalf of the purchaser to the seller to make payment of a stated amount on presentation of stipulated documents and fulfilment of all the terms and conditions
- It facilitates settlement of payment of trade transactions
- Parties to letter of credit
  - Applicant/ Opener
  - Issuing bank/ Opening bank
  - Beneficiary / seller
  - Advising bank (bank at seller's place)
  - Confirming bank
  - Negotiating bank

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Types of Letter of Credits

- Documents against acceptance (DA)/ payment (DP)
  - In the case of DA the documents are released against acceptance of a draft (term collection)
  - For DP, the payments are made against documents on presentation (sight collection)
- Irrevocable Letter of credit
  - The LC can not be amended without the consent of all parties
- Revocable Letter of credit
  - Can be cancelled or amended at any time without the prior knowledge of the seller
- Confirmed Letter of Credit
  - A bank other than issuing bank guarantees the payment of LC
- Transferable Letter of Credit
  - If the seller is not the producer of the goods

Types of Letter of Credits

- Back to back Letter of Credit
  - LC is used as a security for second LC
  - The validity coincides with the validity of original letter of credit
- Anticipatory Letter of Credit
  - Pre-shipment credit to seller for processing and packaging (red clause)
  - Advance up to a point with pre-shipment credit (green clause)
- Revolving Letter of credit
  - LC is issued for specified limit of account
- Deferred Payment Letter of Credit
  - The issuing bank make payments to the seller in installments within the predetermined period and buyer pays later
- Standby Letter of credit
  - In USA it is used in lieu of bank guarantee. Used to guarantee the financial payments

Documents under Letter of Credit

- Bill of exchange
- Invoice
- Transport document
- Insurance document
- Other documents: certificate of origin, certificate from health authorities
- As per RBI guidelines bank should issue letter of credit to those who has enjoyed the credit facility with that bank

Standby Letters of Credit (USA)

- Standby letter of credit (SLCs) obligate the bank to pay the beneficiary if the account party defaults on a financial obligation or performance contract
- Two types of SLCs:
  1. A financial SLC: related to a financial commitments, such as repayment of commercial paper
  2. A performance SLC: nonfinancial in nature; for example a commitment to complete a construction project or deliver a certain merchandise
- Banks earn fee income on SLCs and interest income in the event credit must be extended to the account party to cover a payment of funds to the beneficiary

Standby Letters of Credit ….

Uses of Standby Letters of Credit:

- **For issuance of debt obligations (i.e. bonds, notes, and commercial papers) as backup lines for credit**
- **To ensure delivery of merchandise, performance of options or futures contracts**
- **To back other loans, or even guarantee alimony and child support payments**

Example 1:	**Example 2:**
Suppose city XYZ issues $500 million bond with 7 year maturity to fund pollution control. -To be repaid by payments received by city from project users -If payments are not sufficient to cover interest and principal payments received, bond backed by irrevocable letter of credit from ABC bank	Building contractors obligation to complete a construction project -If project not completed before stated date, bank required to pay beneficiary -Reason for incompletion of the project irrelevant -SLC as substitute for surety bond

Standby Letters of Credit…

- Evaluate account parties in the same way they evaluate commercial loans
- Since banks accept only credits that they believe are least likely to default and taken down (loans made): credit risk minimal
- To reduce risk further, many SLCs are backed by deposits and/or collateral
- Long term nature of commitments can cause risk to change over time; periodic renegotiation of SLC terms
- In event of take down, bank may book unreimbursed balance as commercial loan

Standby Letters of Credit…

Risks:

i. Liquidity risk also known as funding risk

ii. Capital risk: losses can rapidly accumulate in even (say economic slowdown) can cause more than one borrower to default at the same time

iii. Interest rate risk: either from possible changes in duration gap or increased (decreased) likelihood of default as interest rate levels increase (decrease)

iv. Legal risk: Material Adverse Change (MAC) clause enables bank to withdraw from commitments under certain conditions. Clause needed to deter banks from taking excessive risks and exploiting banks guarantee

Standby Letters of Credit…

Pricing:

- May have upfront and annual fees
- Annual fees on SLCs are lower than loan fees in part due to lower administrative costs and other expenses because normally no funding needed

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CONCLUSION

- Off-balance-sheet activities are financial services developed in response to increased risk as well as need to satisfy customers' demand, generate stable fee income, and increase their capital ratios
- Guarantee is an undertaking by a bank (the guarantor) to stand behind the current obligation of a third party, and to carry out that obligation if the third party fails to do so. There are various types of guarantees.
- Letter of credit is an undertaking given by the bank on behalf of the purchaser to the seller to make payment of a stated amount on presentation of stipulated documents and fulfilment of all the terms and conditions.

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MANAGEMENT OF COMMERCIAL BANKING

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Module 06: Management of Liabilities, Capital and Off-Balance Sheet Activities of Commercial Banks

Lecture 55: Management of Off-Balance Sheet Activities-II

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CONCEPTS COVERED

- Loan Commitments
- Derivatives
- Synthetic Loan
- Securitization

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Bank Loan Commitments

- Represents a banks promise to a customer to make future loans or a guarantee under certain conditions
- Benefit of loan commitment: (i) assurance of funds to borrowers and (ii) fees or compensating balances of equivalent value to bank
- Drawback: bank is acquiring a credit exposure in the future because it may have to make a loan or guarantee
- Bank loan commitments:
  1. Line of Credit
  2. Revolving Loan Commitments
  3. Euronotes
  4. Arrangers and Tender Panels

Bank Loan Commitments

Line of Credit

- Agreement between bank and a customer that bank will entertain a request for a loan from that customer
- Frequently informal agreements; banks do not collect fees for the service

Bank Loan Commitments …

Revolving Loan Commitments

- A formal agreement between bank and a customer
- Obligates bank to lend funds according to the terms of the contract
  - Contract specifies terms under which loans will be made, including maximum amount to be loaned, interest rate, maturities
- Customer pays the bank a commitment fee: Facility Fee
- Protects borrower from availability risk and markup risk
  - Markup risk: premium added on the reference rate to compensate the bank for credit risk
- Tantamount to options contract: bank must offer loan at agreed upon prices
- Exposes bank to credit risk; commitment fee is priced to capture this bank risk

Note Issuance Facilities (NIF)

Euronotes/ Revolving Underwriting Facilities (RUFs)/ Standby Note Issuance Facilities (SNIFs)

- Medium term (2-7 years) agreement whereby banks guarantee the sale of a borrower's short term negotiable promissory notes at or below predetermined interest rate
- If the borrower cannot obtain short term funds in a timely fashion, bank will step in and buy the securities
- For bank borrowers the short term securities are usually certificate of deposits
- For non bank borrowers the short term debt securities are called Euronotes
  - ✓ Mainly held by the government and institutional investors
  - ✓ Most activities in this market involves international banking

Note Issuance Facilities (NIF)

Arrangers and Tender Panels

- Is a contingent risk to the banks, arises from their roles as underwriters or arrangers
- The NIF can be organized or underwritten by a single bank (the arranger) or by a group of fifteen or more banks and financial institutions (the tender panel) that have the right to bid for the short-term notes issued under the facility
- Advantage of tender panel: broader competitive market offered by many institutions bidding for securities rathe than one bidder; also provides means to place a larger dollar amount of securities over single arranger

Note Issuance Facilities (NIF)

Arrangers and Tender Panels

- The arranger or tender panel assures the borrower access to short term funds (e.g. 90 days) over five to seven years covered by the agreement; this process known as maturity transformation
  - ✓ Maturity transformation results in increased credit risk for arranger or tender panel
  - ✓ May have to lend the borrower funds if borrower is unable to sell the short-term securities at the interest rate (or Prices) agreed upon
- NIF also increases funding risk of the underwriting banks if they are called upon to make loans

Derivatives

- Financial instrument that are derives from underlying securities
- Not only necessary to understand the risk of underlying securities but transaction involved in derivative and their associated risks
- Two derivatives market:
  (1) Privately traded over-the-counter (OTC) market
  (2) Organized exchanges that offer standardized contracts and a clearing house for handling transaction
- OTC market exceeds the exchange traded market in dollar terms

Derivatives: Currency and Interest Rate Swaps

- Currency swap: includes not only the exchange of interest payments (in different currencies) but also the exchange of initial and final principal amounts at the beginning and end of the swap

  Used to hedge interest rate gap and cash flow risks

- Interest rate swap: generic "plain vanilla" swap where counterparties swap interest payments, fixed against float vice versa; no transfer of principal between parties: notional principal

  Three main types of interest rate swaps are: (1) Coupon swaps, (2) Basis swaps, and (3) Cross-country interest rate swaps

Derivatives: Currency and Interest Rate Swaps

(1) Coupon swaps: interest payments are based on fixed rates and floating rates

(2) Basis swaps: interest payments are based on two different floating rates of interest

(3) Cross-country interest rate swaps: involves three counterparties (A, B and C)

Example: Interest payments between A and B are based on fixed rate flows in one currency and interest payments between A and C are based on floating rate flows in another currency and interest rate

A plain deal currency swap is between two counterparties with equal interest payments in different currencies

Derivatives: Over the Counter Options, Futures and Forwards

- Puts are options to sell assets; calls are options to buy assets
- Put and call options are traded in organised exchanges as standardised contracts
- Standardised contracts do not satisfy the needs of all participants in the market
- Over the counter option developed for non-standardized options
- Innovative OTC used for credit risk management

Example: Investor holds AAA rated bond. Concerned that rating agencies might downgrade the bond to AA, causing yield to rise and price to fall

- Investor buys an option that would pay the amount of loss in capital value of bond of downgraded
- Credit option essentially an insurance contract

Derivatives: Forward Rate Agreement

- Over the counter interest rate futures contracts for bonds or some other financial assets
- Buyer and seller agree upon some interest rate to be paid on some notional amount at a specified time in future
- Can be tailored to meet the needs of the parties involved, there are no margin requirements
- Buying FRA is analogous to buying a call and selling a put, where forward price is equal to the exercise price of the option

  Buyer of FRA is obligated to buy the bond
- Sale of FRA analogous to buying a put option and selling a call

Derivatives: Synthetic Loans

Interest rate futures contract and options can be used to create synthetic loans and securities

Example:

Construction company believes that interest rate will decline. Borrows $30 million for 120 days on a floating rate basis, repricing every 30 days at CB plus 4% points

Bank wants fixed rate loan.

To accommodate customer, bank resolves dilemma by using interest rate futures market to convert the floating rate to fixed rate: Synthetic Loan

Banks buy T-Bills. If interest rate decreases, market value of securities represented by future contract will increase and contract can be sold for profit

Profit used to offset the lower interest from floating rate loan

Derivatives: Securitization

- Involves packaging of loans into larger pools and issuance of securities to investor that earn returns based on the payments on the loans
- Loan backed securities can be collateralised by mortgages, automobile loans, credit card receivables, computer leases, etc.
- Instead of making loans and bearing all of their associated risks and returns, banks are making loans, securitizing them, and selling the securities in the financial market place
- Banks changing their risk exposure to loans and increasing service revenue

  Banks can serve multiple roles in securitization process, including loan originator, loan packager and loan service company

CONCLUSION

- Other off balance sheet items, which significantly affect the banks' operations are loan commitments, note issuance facilities, derivative instruments etc.
- All these items are different in terms of their characteristics and use.

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