# FINANCE AND ACCOUNTS

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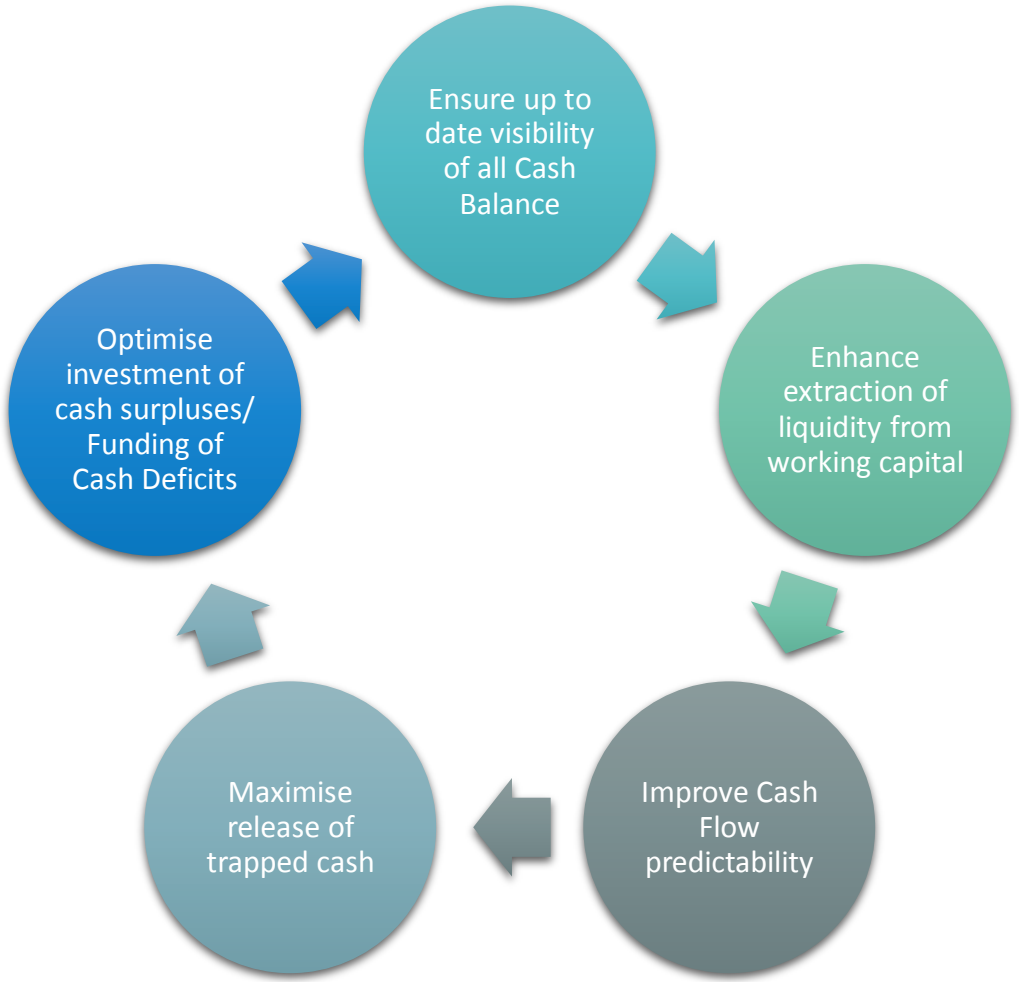
# FINANCE & ACCOUNTS

- Liquidity Management
- Financial Analysis
- Corporate Finance

# LIQUIDITY

**Liquidity:**

- Ability to meet anticipated and contingent cash needs.
- Liquidity is also the amount of money that is readily available for investment and spending.
- Cash needs may arise from withdrawal of deposits, liability maturities' and loan disbursals.



# LIQUIDITY MANAGEMENT

Liquidity management is a concept broadly describing an ability to meet financial obligations through cash flows, funding activities, and capital management.

- Person
- Corporates
- Banks/ NBFCs
- Government

**Liquidity Management of Corporates**

The main objectives of cash and liquidity management are to free up all the company's cash whilst minimising processing costs, to make this liquidity available when and where it is required, and to make the most profitable use of any cash surpluses and/or if there are cash deficits to minimise funding costs.
In corporates we determine the liquidity position through Liquidity Ratios.

# Liquidity Ratios

Liquidity ratios are an important class of financial metrics used to determine a debtor's ability to pay off current debt obligations without raising external capital. It includes:

**Quick Ratio:**

The quick ratio measures a company's ability to meet its short-term obligations with its most liquid assets and therefore excludes inventories from its current assets.

Quick ratio= (Current assets - inventory - prepaid expenses)/ Current liabilities

**Current Ratio:**

The current ratio measures a company's ability to pay off its current liabilities (payable within one year) with its current assets such as cash, accounts receivable and inventories. The higher the ratio, the better the company's liquidity position:

Current Ratio= Current Liabilities/Current Assets

**Daily Sales Ratio:**

DSO refers to the average number of days it takes a company to collect payment after it makes a sale. A higher DSO means that a company is taking unduly long to collect payment and is tying up capital in receivables.

DSO= Average accounts receivable/ Revenue per day

## Liquidity Management of Banks/ NBFCs

Liquidity is a bank's capacity to the capacity of financial institutions to finance increases in their assets and comply with their liabilities as these mature at reasonable cost and without incurring unacceptable losses.

Liquidity of the Indian commercial banks is measured through four different ratios:

- **Liquid assets to demand deposits:** Liquid assets to demand deposits ratio is calculated by ratio of the assets matured within the time period of one year and the liabilities to be paid within the same period

- **Liquid assets to total assets:** It reflects the proportion of the cash and cash equivalent to the total assets. Higher the ratio, better the liquidity position of the banks.

- **Demand deposits to total deposits:** It specifies the prerequisite of the bank to retain cash ready to pay the deposits payable on demand. Higher ratio enhances the ability of the bank to pay its liabilities as and when they are demanded .

- **Advances to deposits:** Gross loans divided by total deposits. It measures the level to which deposits have financed loan portfolio which are considered illiquid assets. Higher the ratio, lower the liquidity of the bank.

## Liquidity Risk Management

The liquidity risk of banks arises from funding of long-term assets by short-term liabilities, thereby making the liabilities subject to rollover or refinancing risk.

| Internal Banking Factors | External Banking Factors |
|---|---|
| High off-balance sheet exposures. | Very sensitive financial markets depositors. |
| The banks rely heavily on the short-term corporate deposits. | External and internal economic shocks. |
| A gap in the maturity dates of assets and liabilities. | Low/slow economic performances. |
| The banks' rapid asset expansions exceed the available funds on the liability side | Decreasing depositors' trust on the banking sector. |
| Concentration of deposits in the short term Tenor | Non-economic factors |
| Less allocation in the liquid government instruments. | Sudden and massive liquidity withdrawals from depositors. |
| Fewer placements of funds in long-term deposits. | Unplanned termination of government deposits. |

## Liquidity Risk Management

### Types of Liquidity Risk:

Banks face the following types of liquidity risk:

**Funding Liquidity Risk** –
The risk that a bank will not be able to meet efficiently the expected and unexpected current and future cash flows and collateral needs without affecting either its daily operations or its financial condition.

**Market Liquidity Risk** –
The risk that a bank cannot easily offset or eliminate a position at the prevailing market price because of inadequate market depth or market disruption.

### Liquidity Coverage Ratio:

LCR standard aims to ensure that a bank maintains an adequate level of unencumbered HQLAs that can be converted into cash to meet its liquidity needs for a 30 calendar day time horizon under a significantly severe liquidity stress. LCR promotes short-term resilience of banks to potential liquidity disruptions by ensuring that they have sufficient high quality liquid assets (HQLAs) to survive an acute stress scenario lasting for 30 days

$$\frac{\text{Stock of high quality liquid assets (HQLAs)}}{\text{Total net cash outflows over the next 30 calendar days}} \geq 100\%$$

**Basel III Norms**

Basel III is an internationally agreed set of measures developed by the Basel Committee on Banking Supervision in response to the financial crisis of 2007-09. The measures aim to strengthen the regulation, supervision and risk management of banks.

**Capital Adequacy Ratio (CAR)**

Capital Adequacy Ratio (CAR) is the ratio of a bank's capital in relation to its risk-weighted assets and current liabilities. It determines the bank's capacity to meet the time liabilities and other risks such as credit risk, operational risk.
Capital Adequacy Ratio = (Tier 1 Capital + Tier 2 Capital)/ Risk Weighted assets

**Tier 1 Capital**: It is the primary funding source of the bank consisting of shareholders' equity and retained earnings. Tier I items are deemed to be of the highest quality because they are fully available to cover losses. Goodwill and other intangible assets, deferred tax assets and investments in other financial entities are deducted.

Elements of Common Equity Tier 1 Capital:

(i) Common shares (paid-up equity capital)
(ii) Stock surplus (share premium) resulting from the issue of common shares;
(iii) Statutory reserves;
(iv) Capital reserves representing surplus arising out of sale proceeds of assets;
(v) Other disclosed free reserves, if any;

**Tier 2** capital includes revaluation reserves, hybrid capital instruments and subordinated term debt, general loan-loss reserves, and undisclosed reserves. It is also known as supplementary capital. The loss absorption capacity of Tier II capital is lower than that of Tier I capital.

The elements of Tier II capital includes

- Undisclosed reserves,
- Revaluation reserves,
- Feneral provisions and loss reserves,
- Hybrid capital instruments,
- Subordinated debt and
- Investment reserve account.

**Risk Weighted Assets:** It is bank's assets weighted according to risk (credit risk, market risk and operational risk)

The Basel III norms stipulated a capital to risk weighted assets of 8%. However, as per RBI norms, Indian scheduled commercial banks are required to **maintain a CAR of 9%** while Indian public sector banks are emphasized to maintain a CAR of 12%.

**Capital Conservation Buffer (CCB):** It is designed to ensure that banks build up capital buffers during normal times which can be drawn down as losses are incurred during a stressed period. Banks will be required additionally to hold a CCB of 1.875% of Capital.
Total minimum CAR= 10.875%

| Banks | Capital Adequacy Ratio (31st March 2020) |
|---|---|
| HDFC Bank | 18.5% |
| State Bank of India | 13.06% |
| ICICI Bank | 14.72% |
| Axis Bank | 17.53% |
| Kotak Mahindra Bank | 17.9% |

**Total Deposit to Total Loan (TDTL):** It is the proportion of total deposit in terms of total loan. It measures the Liquidity position of the bank.

**Domestic Systemically Important Banks (D-SIBs):** Banks that are too big to fail. In India, State Bank of India (SBI), ICICI Bank and HDFC Bank.

## Liquidity Management Framework by Reserve Bank of India

**Monetary Policy:** Monetary policy is the macroeconomic policy laid down by the Reserve Bank of India. It involves the management of money supply and interest rates. It is bi-monthly meeting & the committee comprises of six members including RBI Governor.

**Open Market Operations (OMO)**: It is an activity by a RBI to buy or sell government securities on the open market. Central banks use these operations as the primary means of implementing monetary policy.

**Implications:**

**Sale of Government Securities** → **Rupee Liquidity** ↓

**Purchase of Government Securities** → **Rupee Liquidity** ↑

**Liquidity Adjustment Facility (LAF)**

LAF is a facility extended by RBI to scheduled commercial banks and primary dealers to avail liquidity in case of requirement or park excess funds with the RBI in case of excess liquidity on an overnight basis against the collateral of Government securities including State Government securities.

The operations of LAF are conducted by way of repurchase agreements **(Repos and Reverse Repos with RBI)**

# Direct & Indirect Instruments by RBI

## Cash Reserve Ratio (CRR):

The average daily balance that a bank is required to maintain with the Reserve Bank as a share of such per cent of its Net demand and time liabilities (NDTL). Reduction in CRR augment primary liquidity in the banking system.

Minimum daily maintenance of the Cash Reserve Ratio was reduced from 90 per cent to 80 per cent up to September 25, 2020.

Current CRR Rate: 3%

## Statutory Liquidity Ratio (SLR):

The share of NDTL that a bank is required to maintain in safe and liquid assets, such as, government securities, cash and gold. Changes in SLR often influence the availability of resources in the banking system for lending to the private sector. Banks has to update to RBI every alternate Friday regarding their SLR status.

The Reserve Bank of India raises SLR to control the bank credit during the time of inflation. Similarly, it decreases the SLR during the time of recession to increase bank credit.

Reserve Bank of India has the authority to increase this ratio by up to 40%

Current SLR Rate: 18.5%

| Statutory Liquidity Ratio (SLR) | Cash Reserve Ratio (CRR) |
|---|---|
| In the case of SLR, banks are asked to have reserves of liquid assets which include both cash and gold. | The CRR requires banks to have only cash reserves with the RBI |
| Banks earn returns on money parked as SLR | Banks don't earn returns on money parked as CRR |
| SLR is used to control the bank's leverage for credit expansion. | The Central Bank controls the liquidity in the Banking system with CRR. |
| In the case of SLR, the securities are kept with the banks themselves which they need to maintain in the form of liquid assets. | In CRR, the cash reserve is maintained by the banks with the Reserve Bank of India. |

## Repurchasing Option (Repo Rate):

The interest rate at which the Reserve Bank provides overnight liquidity to banks against the collateral of government and other approved securities under the liquidity adjustment facility (LAF) i.e. banks borrow from RBI.

It is an instrument for borrowing funds by selling securities with an agreement to repurchase the said securities on a mutually agreed future date at an agreed price which includes interest for the funds borrowed.

Current Policy Repo Rate: **4.00%**

Repo Rate ↓ ⟶ Bank's Borrowing Cost ↓ ⟶ Borrowing Cost of Borrowers ↓ ⟶ Inflation ↑

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## Reverse Repo Rate:

The interest rate at which the Reserve Bank absorbs liquidity, on an overnight basis, from banks against the collateral of eligible government securities under the LAF i.e. banks lend money to RBI.

Current Reverse Repo Rate: 3.35%

Reverse Repo Rate ↑ ⟶ Money Supply ↓

Reverse Repo Rate ↓ ⟶ Money Supply ↑

**Marginal Standing Facility (MSF):**
A facility under which scheduled commercial banks can borrow additional amount of overnight money from the Reserve Bank by dipping into their Statutory Liquidity Ratio (SLR) portfolio up to a limit at a penal rate of interest. This provides a safety valve against unanticipated liquidity shocks to the banking system.
Current Marginal Standing Facility (MSF) Rate: 4.25%

**Bank Rate:** It is the lending rate at which commercial banks can borrow from the RBI without providing any security. At this rate RBI is ready to buy or rediscount bills of exchange or other commercial papers.
Current Bank Rate: 4.25%

| Repo Rate | Bank Rate |
|---|---|
| Repo Rate is charged for repurchasing the securities sold by the commercial banks to the central bank. | Bank Rate is charged against loans offered by the central bank to commercial banks |
| Securities, bonds, agreements and collateral is involved | No collateral is involved |
| Short term financial needs | Long term financial requirements of commercial banks |
| Repo Rate is always lower than the Bank Rate. | |

**Revised Liquidity Management Framework (6th February 2020)**

RBI has revamped the Liquidity Management Framework to ensure its rate decisions are passed on more quickly by the banking system to the end consumers.

- RBI has finalized weighted average call rate (WACR) as the single operating target. WACR to be within the policy rate corridor, which is set at 25 bps around the repo rate. This is also called the corridor system.
- The marginal standing facility (MSF) rate as its upper bound (ceiling) and the fixed rate reverse repo rate as the lower bound (floor), with the policy repo rate in the middle of the corridor.

  The width of the corridor remains unchanged at 50 basis points
- The current requirement of maintaining a minimum of 90 per cent of the prescribed CRR on a daily basis will continue.
- The Reserve Bank will conduct, if needed, longer-term variable rate repo/reverse repo operations of more than 14 days
- **Long Term Repo Operations (LTROs):** IN LTROs, RBI provides longer term loans, ranging from one month to three years, to banks at the prevailing rate. The resultant of this is the reduction in the cost of funds, as banks get long term funds at lower rates. It is a mechanism to inject liquidity into the banking system as well as to ensure the smooth transmission of monetary policy actions and flow of credit into the economy. It is with a view to assuring banks about the availability of durable liquidity at reasonable cost relative to prevailing market conditions.

# Highlights of the Monetary Policy Committee 22nd May 2020



## PRESS RELEASES

(501 kb)

**Date : Jun 05, 2020**

**Minutes of the Monetary Policy Committee Meeting May 20 to 22, 2020**

**[Under Section 45ZL of the Reserve Bank of India Act, 1934]**

The twenty third meeting of the Monetary Policy Committee (MPC), constituted under section 45ZB of the Reserve Bank of India Act, 1934, was held from May 20 to 22, 2020; the meeting was originally scheduled from June 3 to 5, 2020, but was advanced to May 20-22 in view of the ongoing COVID-19 pandemic.

2. The meeting was attended by all the members – Dr. Chetan Ghate, Professor, Indian Statistical Institute; Dr. Pami Dua, former Director, Delhi School of Economics; Dr. Ravindra H. Dholakia, former Professor, Indian Institute of Management, Ahmedabad; Dr. Janak Raj, Executive Director (the officer of the Reserve Bank nominated by the Central Board under Section 45ZB(2)(c) of the Reserve Bank of India Act, 1934); Dr. Michael Debabrata Patra, Deputy Governor in charge of monetary policy – and was chaired by Shri Shaktikanta Das, Governor. Dr. Chetan Ghate, Dr. Pami Dua and Dr. Ravindra H. Dholakia joined the meeting through video conference.

3. According to Section 45ZL of the Reserve Bank of India Act, 1934, the Reserve Bank shall publish, on the fourteenth day after every meeting of the Monetary Policy Committee, the minutes of the proceedings of the meeting which shall include the following, namely:

a. the resolution adopted at the meeting of the Monetary Policy Committee;

b. the vote of each member of the Monetary Policy Committee, ascribed to such member, on the resolution adopted in the said meeting; and

c. the statement of each member of the Monetary Policy Committee under sub-section (11) of section 45ZI on the resolution adopted in the said meeting.

4. The MPC reviewed the surveys conducted by the Reserve Bank to gauge consumer confidence, households' inflation expectations and the projections of professional forecasters. The MPC also reviewed in detail staff's macroeconomic projections, and alternative scenarios around various risks to the outlook. Drawing on the above and after extensive discussions on the stance of monetary policy, the MPC adopted the resolution that is set out below.

**Resolution**

5. On the basis of an assessment of the current and evolving macroeconomic situation, the Monetary Policy Committee (MPC) at its meeting today (May 22, 2020) decided to:

- reduce the policy repo rate under the liquidity adjustment facility (LAF) by 40 bps to 4.0 per cent from 4.40 per cent with immediate effect;
- accordingly, the marginal standing facility (MSF) rate and the Bank Rate stand reduced to 4.25 per cent from 4.65 per cent; and
- the reverse repo rate under the LAF stands reduced to 3.35 per cent from 3.75 per cent.
- The MPC also decided to continue with the accommodative stance as long as it is necessary to revive growth and mitigate the impact of COVID-19 on the economy, while ensuring that inflation remains within the target.

These decisions are in consonance with the objective of achieving the medium-term target for consumer price index (CPI) inflation of 4 per cent within a band of +/- 2 per cent, while supporting growth.

2020
2019
2018
2017
2016
2015
2014
2013
2012
2011
Archives

**Annex-1**

**A chronology of important RBI announcements since the onset of COVID-19** (Contd.)

| Date of announcement | Measure | Quantum of support (₹ crore) | Brief Description |
|---|---|---|---|
| Feb 06, 2020 | Long term repo operations (LTROs) | 1,25,117* | Available to Scheduled Commercial Banks (SCBs) at fixed policy repo rate; no end-use restrictions. |
| | Cash Reserve Ratio (CRR) exemption for specific sectors | N.A. | SCBs were allowed to deduct equivalent of incremental credit disbursed by them for automobiles, residential housing and Micro, Small and Medium Enterprise (MSMEs) from their net demand and time liabilities (NDTL) for maintenance of CRR. |
| Mar 20, 24 & 26, 2020 and other select dates | OMOs (incl. NDS-OM) | 1,61,499* | RBI conducted three OMO auctions on March 20, 24 and 26, 2020 for ₹40,000 crore. Further, RBI purchased GoI securities worth ₹1,21,499 crore on NDS-OM on various dates. |
| Mar 23, 2020 | Term Repos | 89,517@ | Variable rate repos were undertaken to address the frictional year-end liquidity requirements caused by COVID related dislocations. All term repos have since matured. |
| Mar 27, 2020 | CRR reduction and leeway in minimum daily CRR maintenance | 1,37,000 | CRR reduced by 100 basis points to 3.0 per cent of NDTL for all banks. The requirement of minimum daily CRR balance maintenance was reduced from 90 per cent to 80 per cent. |
| | Enhancement of Standing Liquidity Facility (SLF) for PDs | 7,200 | Liquidity available to SPDs under the SLF was temporarily enhanced from ₹2,800 crore to ₹10,000 crore. |
| | Policy repo rate reduced by 75 bps. | N.A. | Repo rate was reduced to 4.40 per cent from 5.15 per cent. |
| | Monetary Policy corridor widened | N.A. | The existing policy rate corridor was widened from 50 bps to 65 bps. The reverse repo rate under the LAF was adjusted 40 bps lower than the policy repo rate and MSF rate 25 bps above the policy repo rate. |
| | Targeted long term repo operations (TLTROs) | 1,00,050* | Three-year funds to be deployed in investment grade corporate bonds, CPs, and non-convertible debentures (NCDs). Up to fifty per cent of deployment in primary market and the remaining fifty per cent from the secondary market, including from mutual funds and NBFCs. |
| | MSF Limit Enhancement | 1,37,000 | Limit for borrowing by banks under the marginal standing facility (MSF) by dipping into the Statutory Liquidity Ratio (SLR) increased from 2 per cent to 3 per cent. |
| Mar 30, 2020 | Extension of fixed-rate reverse repo and MSF windows | N.A. | To provide market participants flexibility in liquidity management, the fixed-rate reverse repo and MSF windows were made available from 09:00 hrs to 23:59 hrs as against from 17:30 hrs to 23:59 hrs earlier. |

## Non Performing Assets (NPA)

An asset, including a leased asset, becomes non-performing when it ceases to generate income for the bank i.e. interest and/ or instalment of principal has remained 'past due' for a specified period of time.

- In the case of interest and/ or instalment of principal, if it remains overdue for a period of more than 90 days in respect of a term loan
- The bill remains overdue for a period of more than 90 days in the case of bills purchased and discounted,

**Gross NPA**= Gross NPA Ratio is the ratio of total gross NPA to total advances (loans) of the bank.

**Net NPA** = Banks should deduct the following items from the Gross NPAs to arrive at the Net NPAs

i) Balance in Interest Suspense Account
ii) DICGC/ECGC claims received and held, pending adjustment
iii) Part payment received and kept in suspense account
iv) Total provisions held (excluding amount of technical write off and provision on standard assets)

## Classifications Of NPAs

**Substandard Assets**– If a loan account remains NPA for a period less than or equal to 12 months.
**Doubtful Assets**– An asset is doubtful if it has remained in the sub-standard category for 12 months.
**Loss Asset**– A loan account is declared as loss asset when the bank's internal or external auditors declare it so or RBI inspection declares it as one.

## Provisions As Per RBI Guidelines

Provisions should be made on the non-performing assets on the basis of classification of assets.
Banks should make general provision for standard assets at the rate prescribed in the Master Circular.

For Substandard Assets: A general provision of 15 percent on total outstanding should be made without making any allowance for ECGC guarantee cover and securities available. The 'unsecured exposures' which are identified as 'substandard' would attract additional provision of 10 per cent.

For Doubtful assets, 100 percent of the extent to which the advance is not covered by the realisable value of the security to which the bank has a valid recourse and the realisable value is estimated on a realistic basis. In regard to secured portion, at the rates ranging from 25 percent to 100 percent depending upon the period for which the asset has remained doubtful:

For Loss assets, Loss assets should be written off. If loss assets are permitted to remain in the books for any reason, 100 percent of the outstanding should be provided for.

# Corporate Finance

**Corporate Finance** is concerned with the efficient and effective management of the finances of an organization in order to achieve the objectives of that organization.

This involves

- Planning & Controlling the provision of resources (where funds are raised from)
- Allocation of resources (where funds are deployed to)
- Control of resources (whether funds are being used effectively or not)

Some important questions that are answered are:

- What long-term investments should the firm take on?
- Where will we get the long-term financing to pay for the investment?
- How will we manage the everyday financial activities of the firm?

Two Key Concepts in Corporate Finance:

- Relationship between Risk and Return
- Time Value of Money

**Relationship between Risk and Return**

When a corporate manager makes a decision to purchase equipment, expand operations, or start a new product line, the manager must consider both the costs and the benefits of that decision.

This concept states that an investor or a company takes on more risk only if higher return is offered in compensation.

It is the possibility of an unfavorable event. From the investor's perspective, a particularly unfavorable event is a decline in the price of the stock.

**Cost of Capital (CoC):**

A Company obtains finance from different sources i.e. Shareholders both Equity & Preference Shares capital, borrowings from public, financial institutions & banks. All these sources of capital involve incurrence of cost which is known as Cost of Capital. The CoC is the minimum required rate of return.

Kd- The interest rate (the required return) at which the firm can issue new debt; also, the yield to maturity on existing debt. This is the before-tax component cost of debt.

Kd(1 – t)- After-tax cost of debt. Here, t is the firm's marginal tax rate. The interest payments made by a firm are tax deductible, which makes the after-tax cost of debt less than the before-tax cost.

Kps- Cost of preferred stock

Ke- Cost of common equity

# Corporate Finance Decisions

Current Assets

How much short term cash does a company need to pay its bill?

How can the firm raise the money for the required funds?

Fixed Assets
- Tangible
- Intangible

What Long Term Investment should the firm choose?

Current Liabilities

Long Term Debt

Shareholders Equity

**Capital Asset Price Model (CAPM)**

CAPM follows the model of equity shareholders expect a return more than Risk Free rat for compensating them for taking higher risk.

Ke = Rf + B(RM –Rf)

Ke= Cost of Equity

Rf= Risk Free Return (T-Bills)

B= Beta Coefficient/ Sensitivity of the company

Rm= Expected return from market

**Weighted Average Cost of Capital (WACC)**

As a company obtains capital from various sources, the cost of capital of each sources is different. Therefore, when we consider the cost of funds used to purchase the firm's assets, we must consider the average cost called as WACC.

WACC = (wd)[kd(1 – t)] + (wps)(kps) + (wce)(kce)

where:

wd = the weight of debt in the capital structure

wps = the weight of preferred stock in the capital structure

wce = the weight of common equity in the capital structure

**Time value of Money in Financial Decisions**

Money that is available at the present time is worth more than the same amount in the future, due to its potential earning capacity. This core principle of finance holds that provided money can earn interest, any amount of money is worth more the sooner it is received. Reasons;

Risk: Uncertainty about the receipt of money in future

Inflation: Rupee today presents a greater purchasing power than a year later

Investment Opportunities: Because of availability of opportunity of investment for earnings additional cash flow.

Present value decreases at a decreasing rate.

**Capital Budgeting**

It is a planning process undertaken by a company to efficiently invest funds in long term activities. A company assesses prospective project's lifetime cash inflows and outflows to determine whether the potential returns that would be generated meet a sufficient target benchmark.

**Discounted Cash Flows:**

It estimates the value of an investment based on its future cash flows. DCF analysis attempts to figure out the value of an investment today, based on projections of how much money it will generate in the future.

$$DCF = CF_1/(1+r)^1 + CF_2/(1+r)^2 + CF_n/(1+r)^n$$

**Net Present Value Method in Capital Budgeting:**

It is a method of discounting cash flows i.e. cash flows to be received in future are discounted with the rate of return to determine the Present Value of cash Inflows. Higher the NPV, better it is.

$$NPV = \sum_{t=0}^{n} \frac{R_t}{(1+i)^t}$$

Rt= Net Cash Flow – Outflows during a single period

**Internal Rate of Return**

It is the rate at which present value of cash inflows is equal to present value of cash inflows. IRR can be determined using a financial calculator (recommended) or by trial and error. the trial and error method is performed by discounting the project's cash inflows at various discount rates until you find the one that satisfies the formula.

$$0 = \text{NPV} = \sum_{t=1}^{T} \frac{C_t}{(1+IRR)^t} - C_0$$

# Financial Analysis

**Ratio Analysis**

Ratio analysis is a quantitative method of gaining insight into a company's liquidity, operational efficiency, and profitability by studying its financial statements such as the balance sheet and income statement.

Objective:

- Liquidity Position
- Operating Efficiencies
- Long Term Solvency
- Trend Analysis
- Identify the Improving Areas of a Company

**Types of Ratios**

- Profitability Ratios: How effectively a company’s management has generated profit
- Activity Ratios: How effectively Company is using assets to generate profits
- Liquidity Ratios: Company’s ability to meet short term financial obligations
- Coverage Ratios: It is a comparisons designed to measure a company’s ability to pay its liabilities.

**Profitability Ratios**

Company's Objective: Income ↑ ⟶ Profits ↑

Word Profitability comprises of 2 words, "Profit" i.e. the excess of total revenue over expenses & "Ability" i.e. power of a concern to earn profits.

**Gross Profit Ratio (GP Ratio)**

$$\text{Gross profit ratio} = \frac{\text{Gross profit}}{\text{Net sales}}$$

This ratio calculates the profitability of business. Higher the ratio, higher the profitability of a company.

**Implications:**

Higher Ration can indicate:

Higher Sales price without corresponding increase in COGS or

Declining COGS with no change in Sales price

**Cost of Goods Sold Ratio (COGS)**

COGS Ratio = Cost of Goods Sold/Net Sales * 100

Cost of Goods Sold= Opening Stock + Net Purchases + Direct Expenses – Closing Stock

Net Sales = Total Sales – Sales Return

Lower the Ratio, the better it is.

**COGS Ratio = 100 – GP Ratio**

**Profit Volume Ratio (P/V Ratio)**
P/V Ratio = Contribution/ Sales * 100
Contribution= Sales – Variable Cost or Fixed Cost + Profit
Higher the ratio, better the "Financial Health" of the company.

**Return on Capital Employed (ROCE) or Return on Investment (ROI)**
ROCE = (Operating Net Profit before Interest & Tax or EBIT)/ Capital Employed * 100
Capital Employed = Equity Share Capital + Reserves & Surplus + Preference Share Capital + Long Term Debt – Non Trade Assets

The ratio is an indicator of the earning capacity on the capital employed in the business i.e. how effectively the long terms funds have been used. It is an important ratio for making investment decisions.

**Return on Equity (ROE)**
ROE = Net profit after Tax/ Shareholder's funds * 100
Shareholder's funds= Equity Share Capital + Reserves & Surplus (Excl. Revaluation Reserves) + Preference Share Capital
The ratio indicates the profitability objective of the shareholders of the company is achieved or not.
Higher the Ratio, better it is.

**Activity Based Ratio:** It is computed to evaluate the efficiency with which the firm manages and utilise its assets & capital.

**Fixed Assets Turnover Ratio:**

Ratio = Net Sales / Net Fixed Assets

Net Fixed Assets = Gross Fixed Assets (Gross Block) – Accumulated Depreciation
This ratio indicates how effectively the fixed assets of a company are used. The ratio is majorly used in manufacturing concern since sales are produced by the capital invested in Fixed Assets.

**Debtor Turnover Ratio**

Ratio = Net Credit Sales / Accounts Receivable (Debtors + Bills Receivable)

It measures the number of times on average, the debtors are collected during the period i.e. This ratio measures the efficiency of a firm in managing and collecting the credit issued to the customers.

**Stock or Inventory Turnover Ratio**
Ratio = Cost of Goods Sold/ Finished Goods Inventory

It measures the number of times on an average the inventory is sold during the period. Higher the ratio, the lesser the cash is tied up in the inventory therefore higher the ratio, the better it is.

**Liquidity Ratio:**

It aims to measure the short term ability of a company to pay its maturing obligations and meet unexpected needs of cash.

It comprises of

**Current Ratio**

Current Ratio = Current Assets / Current Liability

Ideal Current Ratio is 2:1.

It measures the company's liquidity & short term debt paying ability i.e. assets which can be converted into cash within a short period of time (not exceeding 1 year).

If the ratio is less than 2:1, the company may have difficulty in meeting its current obligations.

**Quick Ratio**

Quick Ratio = Liquid Assets/ Current Liabilities

Liquid Assets = Current Assets - Stock – Prepaid Expenses

Ideal Quick Ratio = 1:1

## Coverage Ratio

A coverage ratio, broadly, is a group of measures of a company's ability to service its debt and meet its financial obligations such as interests payments or dividends. The higher the coverage ratio, the easier it should be to make interest payments on its debt or pay dividends.

### Interest Coverage Ratio

Ratio = Earning before Interest & Taxes/ Interest on Loan Term Debts

This ratio indicates the debt servicing capability of a company i.e. Capacity to pay fixed interest on long term debt.

It represent the number of times the interest charges are covered by the income out of which they will be paid i.e. margin of safety for the lenders. Higher the Ratio, better it is.

### Equity Dividends Coverage Ratio

Ratio = Earning per Share/ Dividend per Share

It denotes the number of times the total equity dividends are covered by earnings available for equity shareholders. It helps in assessing the prospects for divided increases.

### Debt Service Coverage Ratio

$$\text{Debt Service Coverage Ratio} = \frac{\text{EBITDA}}{\text{Interest + Principal}}$$

It is important from lenders point of view & indicates whether the business can earn sufficient profits to pay interest & principle installments.

## Other Important Ratios

### Debt-Equity Ratio

Ratio = Debt/ Equity

The ratio indicates the relationship between the long term debts & shareholders funds. The ratio indicates the relative portion of debt and equity in financing the assets of a company.
Ideal Debt Equity Ratio is 2:1.
A lower ratio is a favourable for long term creditors i.e. a larger margin of safety.
A higher ratio indicates hinderance from the owner's prospective as it effects the future capability of raising additional debt.

### Price Earning Ratio (P/E Ratio)

P/E Ratio = Market Price per Equity Share/ Earnings per Share

The ratio helps investors determine the market value of a stock as compared to the company's earnings.
High growth shares have high P/E ratios as the investors are willing to pay greater multiple of current earnings.

### Dividend Yield Ratio

Dividend Yield Ratio = Dividend per Share/ Market Price per Share * 100

It indicates the current level of income for an investor from a share. The ration is important for investors who are interested in divided income.

# Thank you

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