

1. CALL MONEY/ NOTICE MONEY

Participants: Scheduled Commercial Banks, Co-operative Bank etc.

Duration: Call Money (Overnight i.e. 1 day); Notice Money (2 days to 14 days)

Purpose: To meet day-to-day surpluses and deficits in their Cash Flows.

2. TREASURY BILLS

Participants: Banks, Insurance Companies, Provident Funds, Mutual Funds etc.

Duration: Usually 91 days, 182 days, 364 days

Purpose: Issued by Government of India when need money for Short period.

3. COMMERCIAL BILLS

Participants: Corporate Creditors & Debtors

Duration: Generally 3 to 6 months

Purpose: Availability of Trade liquidity to Corporates while making Credit Sales.

4. CERTIFICATE OF DEPOSITS

Participants: Commercial Banks and Bulk Depositors

Duration: 7 days to 1 Year

Purpose: Short Term Surplus Liquidity Management by Corporates

5. COMMERCIAL PAPER

Participants: High Rated Corporate Entities

Duration: 7 days to 1 Year

Purpose: Funds availability (Unsecured) to Corporate Sector to meet their Working Capital Requirements

6. REPO & REVERSE REPO

Participants: RBI & Commercial Banks

Duration: 1 day to 1 Year

Purpose: Liquidity Regulation & Inflation Control in the Economy

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MONEY MARKET OPERATIONS



MONEY MARKET INSTRUMENTS

Similar to Bonds, the money market instruments are important source of finance to industry, trade, commerce and the government sector for meeting their short-term requirement for both national and international trade. These financial instruments provide also an investment opportunity to the banks and others to deploy their surplus funds so as to reduce their cost of liquidity and earn some income.

The instruments of money market are characterised by:

- (a) Short duration,
- (b) Large volume
- (c) De-regulated interest rates.
- (d) The instruments are highly liquid.
- (e) They are safe investments owing to issuers inherent financial strength.

The traditional short-term money market instruments consist of mainly call money and notice money with limited players, treasury bills and commercial bills. The new money market instruments were introduced giving a wider choice to short term holders of money to reap yield on funds even for a day to earn a little more by parking funds through instruments for a few days more or until such time till they need it for lending at a higher rate. The various types of instruments of money market are discussed in the following paragraphs:

1. Call/Notice money: Call money market, or inter-bank call money market, is a segment of the money market where scheduled commercial banks lend or borrow on call (i.e., overnight) or at short notice (i.e., for periods upto 14 days) to manage the day-to-day surpluses and deficits in their cash-flows.

However, under notice money market, funds are transacted for a period between two days and fourteen days. These day to day surpluses and deficits arises due to the very nature of their operations and the peculiar nature of the portfolios of their assets and liabilities.

2. Treasury Bills (TBs): Among money market instruments TBs provide a temporary outlet for short-term surplus as also provide financial instruments of varying short-term maturities to facilitate a dynamic asset-liabilities management. The interest received on them is the discount which is the difference between the price at which they are issued and their redemption value. They have assured yield and negligible risk of default. The TBs are short-term promissory notes issued by Government of India at a discount.

More relevant to the money market is the introduction of 14 days, 28 days, 91 days and 364 days TBs on auction basis.

However, at present, the RBI issues Treasury Bills of three maturities i.e. 91 days, 182 days and 364 days. TBs are issued at discount and their yields can be calculated with the help of the following formula:

$$Y = \left[\frac{F - P}{P} \right] \times \frac{365}{M} \times 100$$

where Y = Yield,
 F = Face Value,
 P = Issue Price/Purchase Price,
 M = Actual days to Maturity.

3. Commercial Bills: A commercial bill is one which arises out of a genuine trade transaction, i.e. credit transaction. As soon as goods are sold on credit, the seller draws a bill on the buyer for the amount due. The buyer accepts it immediately agreeing to pay amount mentioned therein after a certain specified date. Thus, a bill of exchange contains a written order from the creditor to the debtor, to pay a certain sum, to a certain person, after a creation period. A bill of exchange is a 'self-liquidating' paper and negotiable; it is drawn always for a short period ranging between 3 months and 6 months.

Bill financing is the core component of meeting working capital needs of corporates in developed countries. Such a mode of financing facilitates an efficient payment system. The commercial bill is instrument drawn by a seller of goods on a buyer of goods. RBI has pioneered its efforts in developing bill culture in India, keeping in mind the distinct advantages of commercial bills, like, self-liquidating in nature, recourse to two parties, knowing exact date transactions, transparency of transactions etc.

Example

If a bank re-discounted a commercial bill with a face value of ₹ 100/- @ 15% for 2 months will fetch ₹ 97.50, on the basis of the following calculation.

$$\text{Discount} = 100 \times \frac{15}{100} \times \frac{2}{12} \times 2.5$$

However, as the discount amount is paid at front-end the yield to the investor or cost to the borrower will be higher than the discount rate in view of the fact that the discounter can deploy the amount of discount received for earning further income. This can be calculated with the following formula:

$$E = \frac{FV - SV}{SV} \times \frac{\text{Days or months in year}}{M} \times 100$$

where

E = Effective Discounting Rate

FV = Face Value

SV = Sale Value

M = Period of Discount

Accordingly, the Yield as per the data given in the example will be:

$$\frac{100 - 97.50}{97.50} \times \frac{12}{2} \times 100 = 15.385\%$$

4. Certificate of Deposit: The CDs are negotiable term-deposits accepted by commercial bank from bulk depositors at market related rates. CDs are usually issued in demat form or as a Usance Promissory Note.

Just like Commercial Bills, Certificate of Deposit (CD) is a front-ended negotiable instrument, issued at a discount and the face value is payable at maturity by the issuing bank.

Example

Amount of Issue – ₹ 100

Period - 6 months

Rate of discount – 20%

$$\text{Discount} = 100 \times \frac{20}{100} \times \frac{6}{12} = 10.0$$

Hence CD will be issued for ₹ 100 – 10 = ₹ 90.00. The effective rate to the bank will, however, be calculated on the basis of the following formula:

$$E = \frac{FV - SV}{SV} \times \frac{\text{Days or months in year}}{M} \times 100$$

where

E = Effective Yield

FV = Face Value

SV = Sale Value

M = Period of Discount

Accordingly, the Yield as per the data given in the example will be:

$$\frac{100 - 90}{90} \times \frac{12}{6} \times 100 = 22.22\%$$

5. Commercial Paper: It provides cheap source of funds for corporate sector and has caught the fancy of corporate sector and banks. Its market has picked up considerably in India due to interest rate differentials in the inter-bank and commercial lending rates.

CPs are unsecured and negotiable promissory notes issued by high rated corporate entities to raise short-term funds for meeting working capital requirements directly from the market instead of borrowing from banks. Its period ranges from 7 days to 1 year. CP is issued at discount to face value. The issue of CP seeks to by-pass the intermediary role of the banking system through the process of securitisation.

It partly replaces the working capital limits enjoyed by companies with the commercial banks and there will be no net increase in their borrowing by issue of CP. Generally, CP has to be issued at a discount to face value. Yield on CP is freely determined by the market.

The yield on CP can be calculated as follows:

$$Y = \frac{FV - SV}{SV} \times \frac{\text{Days or months in year}}{M} \times 100$$

where

Y = Yield

FV = Face Value

SV = Sale Value

M = Period of Discount

6. Repurchase Options (Repo) and Reverse Repurchase Agreement (Reverse Repo): The term Repurchase Agreement (Repo) and Reverse Repurchase Agreement (Reverse Repo) refer to a type of transaction in which money market participant raises funds by selling securities and simultaneously agreeing to repurchase the same after a specified time generally at a specified price, which typically includes interest at an agreed upon rate. Sometimes it is also called Ready Forward Contract as it involves funding by selling securities (held on Spot i.e. Ready Basis) and repurchasing them on a forward basis.

Following are major differences between Repo and Reverse Repo:

- (a) Repo rate is the rate at which Reserve Bank of India (RBI) lends to Commercial Banks for a short period of time against Government Securities. On the other hand, Reverse Repo is the rate at which Commercial Banks lend to RBI.
- (b) A transaction is called a Repo when viewed from the perspective of the seller of securities (the party acquiring funds) and Reverse Repo when described from the point of view of the supplier of funds. Thus, whether a given agreement is termed a Repo or a Reverse Repo depends largely on which party initiated the transaction.
- (c) The purpose of Repo is to fulfill the deficiency of funds. While the purpose of Reverse repo is to reduce excess liquidity in the economy.
- (d) The Repo rate is comparatively high in comparison to Reverse Repo rate.
- (e) The Repo rate strives to contain inflation in the economy. The Reverse repo aims to control money supply in the economy.



PRACTICAL QUESTIONS



Q. 1

M Ltd. has to make a payment on 30th January, 2020 of ₹ 80 lakhs. It has surplus cash today, i.e. 31st October, 2019; and has decided to invest sufficient cash in a bank's Certificate of Deposit scheme offering an yield of 8% p. a. on simple interest basis. What is the amount to be invested now?

[Practice Manual]

Q. 2

RBI sold a 91 day T-bill of face value of ₹ 100 at an yield of 6%. What was the issue price?

[Study Material]

Q. 3

From the following particulars, calculate the effective interest p.a. as well as the total cost of funds to Bhaskar Ltd., which is planning a CP issue:

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Issue Price of CP = ₹ 97,550

Face Value = ₹ 1,00,000

Maturity period = 3 months

Issue Expenses:

Brokerage: 0.15% for 3 months

Rating Charges: 0.50% p.a.

Stamp duty: 0.175% for 3 months

[Practice Manual]

Q. 4

LMN & Co. plans to issue Commercial Paper (CP) of ₹ 1,00,000 at a price of ₹ 98,000.

Maturity Period: 4 months

Expenses for issue of CP are:

- | | | |
|-------|----------------|-----------|
| (i) | Brokerage | 0.10% |
| (ii) | Rating Charges | 0.60% and |
| (iii) | Stamp Duty | 0.15% |

Find the effective interest rate per annum and the cost of Fund.

[CA Final May 2012]

[Ans: Effective Interest Rate 6.12% p.a.;

Hint: For calc Effective cost of funds either assume expenses as per annum or for 4 months period]

Q. 5

Z Co. Ltd. issued commercial paper worth ₹ 10 crores as per following details:

Date of issue:	16th January, 2019
Date of maturity:	17th April, 2019
No. of days:	91
Interest rate	12.04% p.a

What was the net amount received by the company on issue of CP? (Charges of intermediary may be ignored)

[Study Material]

[Ans: ₹ 9.708549 or ₹ 9.70855 crores]

Q. 6

AXY Ltd. is able to issue commercial paper of ₹ 50,00,000 every 4 months at a rate of 12.5% p.a. The cost of placement of commercial paper issue is ₹ 2,500 per issue. AXY Ltd. is required to maintain line of credit ₹ 1,50,000 in bank balance. The applicable income tax rate for AXY Ltd. is 30%. What is the cost of funds (after taxes) to AXY Ltd. for commercial paper issue? The maturity of commercial paper is four months.

[(5 Marks), CA Final May 2014]

Q. 7

Wonderland Ltd. has excess cash of ₹ 20 lakhs, which it wants to investment in short term marketable securities. Expenses relating to investment will be ₹ 50,000.

The securities invested will have an annual yield of 9%.

The company seeks your advice

- as to the period of investment so as to earn a pre-tax income of 5%.
- The minimum period for the company to break-even its investment expenditure over time value of money.

[Study Material]

Q. 8

Turbo Sales Corporation is a wholesale corporation for heavy machines, is planning for an expansion of their activities resulting in a doubling of its sales. The finance head of the corporation has determined it needs an additional ₹ 20 crores in short term funds to meet finance need in the peak season roughly 6 months of the year. Mr. X, Treasure Head of the Corporation recommended that the corporation should use commercial papers offer to meet the finance needs.

The corporation shall have to offer 10% interest (paid in advance or discounted) plus a sum of ₹ 1,25,000 shall be incurred to meet the floatation cost. The paper would carry a 6 months (180 day) maturity.

Compute the effective cost of credit.

[Practice Manual]

[Ans: 10.66%]

SOLUTION TO HOMEWORK QUESTIONS



Q.2. RBI sold a 91 day T-bill....

Solution:

Let the issue price be X

By the terms of the issue of the T-bills:

$$6\% = \frac{100 - X}{X} \times \frac{365}{91} \times 100$$

$$\frac{6 \times 91 \times X}{36,500} = (100 - X)$$

$$0.01496 X = 100 - X$$

$$X = \frac{100}{1.01496} = 98.53$$

Q.3. From the following particulars, calculate the effective interest p.a.....

Solution:

$$\text{Nominal Interest or Bond Equivalent Yield} = \left[\frac{F - P}{P} \right] \times \frac{12}{M} \times 100$$

Where

F = Face Value

P = Issue Price

$$\frac{1,00,000 - 97,550}{97,550} \times \frac{12}{3} \times 100 = 0.025115 \times 4 \times 100 = 10.046 = 10.05\% \text{ p.a.}$$

$$\text{Effective interest rate} = 1 \left[+ \frac{0.1005}{4} \right]^4 - 1 = 10.435\% \text{ p.a.}$$

Cost of Funds to the Company

Effective Interest	10.435%
Brokerage (0.150 x 4)	0.60%
Rating Charge	0.50%
Stamp duty (0.175 x 4)	<u>0.70%</u>
	<u>12.235%</u>

Alternatively, effective interest rate can also be computed as follow:

Let i be the interest rate then

$$97,750 = \frac{100000}{1 + i \times \frac{3}{12}}$$

$$i = 10.046\%$$

Cost of Funds to the Company

Effective Interest	10.046%
Brokerage (0.150 x 4)	0.60%
Rating Charge	0.50%
Stamp duty (0.175 x 4)	<u>0.70%</u>
	<u>11.846%</u>

Q.5. Z Co. Ltd. issued commercial paper worth ₹ 10 crores....

Solution:

The company had issued commercial paper worth ₹ 10 crores

No. of days Involves = 91 days

Interest rate applicable = 12.04% p.a.

$$\text{Interest for 91 days} = 12.04\% \times \frac{91 \text{ Days}}{365 \text{ Days}} = 3.002\%$$

$$= \text{or } ₹ 10 \text{ crores} \times \frac{3.002}{100 + 3.002} = ₹ 29,14,507$$

$$= \text{or } ₹ 29.14507 \text{ Lakhs}$$

∴ Net amount received at the time of issue:- ₹ 10.00 Crores - ₹ 0.291451 Crores = ₹ 9.708549 Crores

Alternatively, it can also be computed as follows:

$$\text{Price} = \frac{₹ 10 \text{ Crores}}{\left(1 + 12.04\% \times \frac{91 \text{ Days}}{365 \text{ Days}}\right)} = ₹ 9,70855 \text{ Crores}$$

Q.6. AXY Ltd. is able to issue commercial paper of ₹ 50,00,000....

Solution:

	₹
Issue Price	50,00,000
Less: Interest @ 12.5% for 4 month	2,08,333
Issue Expenses	2,500
Minimum Balance	1,50,000
	46,39,167

$$\text{Cost of Funds} = \frac{2,10,833 (1 - 0.30)}{46,39,167} \times \frac{12}{4} \times 100 = 9.54\%$$

Alternatively

	₹
Issue Price	50,00,000
Less: Interest @ 12.5% for 4 months	2,08,333
Issue Expenses	2,500
Minimum Balance	1,50,000
	46,39,167
Opportunity Cost @ 12.5% of ₹ 1,50,000 for 4 months	6,250

$$\text{Cost of Funds} = \frac{2,10,833 (1 - 0.30) + 6,250}{46,39,167} \times \frac{12}{4} \times 100 = 9.95\%$$

Alternatively

Since Commercial Paper is a discount instrument it can also be presumed same shall be issued at discounted price. Accordingly, answer shall be as follows:

$$\text{Issue price} = \frac{50,00,000}{1 + 12.5\% \times \frac{4}{12}} = 48,00,000$$

	₹
Issue Price	48,00,000
Less: Interest @ 12.5% for 4 months	2,00,000
Issue Expenses	2,500
Minimum Balance	1,50,000
	44,47,500
Opportunity Cost @ 12.5% of ₹ 1,50,000 for 4 months	6,250

$$\text{Cost of Funds} = \frac{2,02,500 (1 - 0.30)}{44,47,500} \times \frac{12}{4} \times 100 = 9.56\%$$

$$\text{Cost of Funds} = \frac{2,02,500 (1 - 0.30) + 6,250}{44,47,500} \times \frac{12}{4} \times 100 = 9.98\%$$

Q.7. Wonderland Ltd. has excess cash of ₹ 20 lakhs....

Solution:

- (i) Pre-tax Income required on investment of ₹ 20,00,000

Let the period of Investment be 'P' and return required on investment ₹ 1,00,000 (₹ 20,00,000 x 5%)

Accordingly,

$$\left(₹ 20,00,000 \times \frac{9}{100} \times \frac{P}{12} \right) - ₹ 50,000 = ₹ 1,00,000$$

$$P = 10 \text{ months}$$

- (ii) Break-Even its investment expenditure

$$\left(₹ 20,00,000 \times \frac{9}{100} \times \frac{P}{12} \right) - ₹ 50,000 = 0$$

$$P = 3.33 \text{ months}$$