

MOCK TEST PAPER – 2
FINAL COURSE: GROUP – I
PAPER – 2: STRATEGIC FINANCIAL MANAGEMENT
SUGGESTED ANSWERS/HINTS

- 1 (a)** Let the issue price be X

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

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

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

$$0.01496 x = 100 - x$$

$$x = \frac{100}{1.01496} = ₹ 98.53$$

- (b)** The formula for determining value of a share based on expected dividend is:

$$P_0 = \frac{D_0 (1 + g)}{(k - g)}$$

Where

P_0 = Price (or value) per share

D_0 = Dividend per share

g = Growth rate expected in dividend

k = Expected rate of return

Hence,

Price estimate before budget announcement:

$$P_0 = \frac{2 \times (1 + 0.05)}{(0.10 - 0.05)} = ₹ 42.00$$

Price estimate after budget announcement:

$$P_0 = \frac{1.80 \times (1.05)}{(0.07 - 0.05)} = ₹ 94.50$$

- (c) (i) The contract is to be cancelled on 30-10-2010 at the spot selling rate of US\$ 1
 = ₹ 41.5000
 Less: Margin Money 0.075% = ₹ 0.0311
 = ₹ 41.4689 or ₹ 41.47
 US\$ 20,000 @ ₹ 41.47 = ₹ 8,29,400
 US\$ 20,000 @ ₹ 42.32 = ₹ 8,46,400
 The difference in favour of the Bank/Cost to the importer ₹ 17,000
- (ii) The Rate of New Forward Contract
 Spot Selling Rate US\$ 1 = ₹ 41.5200
 Add: Premium @ 0.93% = ₹ 0.3861
 = ₹ 41.9061
 Add: Margin Money 0.20% = ₹ 0.0838
 = ₹ 41.9899 or ₹ 41.99

- (d) Ratio of investment in L Ltd. and M Ltd. can be calculated as under:

$$X_L = \frac{\sigma_M}{\sigma_L + \sigma_M}$$

$$= \frac{.18}{(.18 + .15)}$$

$$= \frac{.18}{.33}$$

$$= 54.54\%$$

$$X_M = 1 - X_L$$

$$= 1 - 54.54\%$$

$$= 45.46\%$$

2. (a) (i) Current market price of shares already in issue:

$$EPS = \frac{7,500,000}{40,000,000} = \text{Euro Cents } 18.75$$

$$P/E \text{ Ratio} = \frac{\text{Market Price Per Share}}{EPS} = 8 \text{ (Given)}$$

$$\text{Market price per share} = 8 \times \text{Euro Cents } 18.75 = \text{€}1.50$$

(ii) Price at which rights issue will be made: €1.50 X 75% = €1.125

(iii) Number of new shares that will be issued: $\frac{20,250,000}{1.125} = 18 \text{ million}$

(iv) Ex-right price is

$$\frac{€1.50 \times \frac{40,000,000}{58,000,000} + €1.125 \times \frac{18,000,000}{58,000,000} \times \frac{15\%}{12.5\%}}{1} \\ = €1.034 + €0.419 = €1.453$$

*The price/earnings ratio is given as 8. This would imply an earnings yield of $(1 \div 8) = 12.5\%$. This is assumed to be the yield or rate of return on existing funds.

Alternatively it can also be calculated as follows:

Earnings on Existing Capital €1.50 X 20,000,000 X 12.5% = €3,750,000

Earnings on Additional Capital €20,250,000 X 15% = €3,037,500

Total Earnings €3,750,000 + €3,037,500 = €6,787,500

EPS (Ex-Right) $\frac{€6,787,500}{38,000,000} = €0.1786$

Assuming PE ratio remains the same the Ex-Right Price of Share will be
= €0.1786 X 8 = €1.4288

(b) Working Notes:

(i) Trade receivables days = $365 \times 3,500/21,300 = 60 \text{ days}$

(ii) Reduction in trade receivables under factoring arrangement

	₹
Current trade receivables	3,500,000
Revised trade receivables (₹ 21,300,000 x 35/365)	2,042,466
Reduction in trade receivables	1,457,534

Calculation of value of with-recourse offer

As the XYZ's offer is with recourse, ABC will gain the benefit of bad debts reducing from 0.9% of turnover to 0.6% of turnover.

	₹
Finance cost saving = $1,457,534 \times 0.07$	102,027
Administration cost saving	40,000

Bad debt saving = $21,300,000 \times (0.009 - 0.006)$	63,900
Total saving	205,927
Additional interest on advance $(2,042,466 \times 0.8 \times 0.02)$	32,680
Net benefit before factor fee	173,247
With-recourse factor fee = $21,300,000 \times 0.0075$	159,750
Net benefit of with-recourse offer	13,497

Calculation of value of non-recourse offer

As the offer is without recourse, the bad debts of ABC will reduce to zero, as these will be carried by the XYZ, and so the company will gain a further benefit of 0.6% of turnover.

	₹
Net benefit before with-recourse factor fee	173,247
Non-recourse factor fee ₹ $21,300,000 \times 0.0125$	266,250
Net cost before adjusting for bad debts	(93,003)
Remaining bad debts eliminated = $21,300,000 \times 0.006$	127,800
Net benefit of non-recourse offer	34,797

The XYZ's offer is financially acceptable on a with-recourse basis, giving a net benefit of ₹ 13,497. On a non-recourse basis, the XYZ's offer is not financially acceptable, giving a net loss of ₹ 93,003, if the elimination of bad debts is ignored.

The difference between the two factor fees (₹ 106,500 or 0.5% of sales), which represents insurance against the risk of bad debts, is less than the remaining bad debts (₹ 127,800 or 0.6% of sales), which will be eliminated under non-recourse factoring.

When this elimination of bad debts is considered, the non-recourse offer from the factor is financially more attractive than the with-recourse offer.

- 3 (a) Assumption: Though in the question it is assumed that there is no operating synergy and so no increase on the combined earnings; it is unlikely a bid would be launched if substantial synergy was not estimated.

Share for share offer

	AB Ltd.	YZ Ltd.	Combined
Profit before tax (₹ lakh)	1,266.00	1,125.00	2,391.00
Less: Tax @ 30%	379.80	337.50	717.30

Profit after Tax	886.20	787.50	1,673.70
Number of shares (lakh)	25.00	18.00	40.00
Earnings Per Share (₹)	35.45	43.75	41.84
P/E ratio	11	7	
Share price (pre bid) (₹)	389.93	306.25	381.52*
Market Value of company (₹ lakh)	9,748.20	5,512.50	15,260.70

$$* \frac{₹ 15,260.70}{40} = ₹ 381.52$$

Post Bid Price (Combined Entity) ₹ 41.84 X 11 = ₹ 460 per share

Share for Cash offer ₹ 460 per share

Thus cash offer is more beneficial for AB Ltd.

Reasons (partially) for the fall in the market price of the shares in the market

Wealth of a shareholder of YZ Ltd. holding 6 shares in YZ Ltd. (₹ 306.25 X 6)
₹ 1,837.50

Wealth of a shareholder of YZ Ltd. holding 5 shares in combined entity
(₹ 381.52 X 5) ₹ 1,907.60

Thus there seems to be transfer of wealth from the AB Ltd. to YZ Ltd.

Value of shares using the Dividend Growth Model

$$AB = \frac{(35.45 \times 1.04)}{(0.13 - 0.04)} = ₹ 409.66$$

$$YZ = \frac{(43.75 \times 1.04)}{(0.11 - 0.04)} = ₹ 650.00$$

This would suggest that AB is slightly undervalued, but that YZ is hugely undervalued in the marketplace. It is possible that the market does not believe YZ's growth estimates, given its poor performance to date.

- (b) The expected rate of return on equity after 2016 = $0.0625 + 1.1(0.055) = 12.3\%$

The dividends from 2011 onwards can be estimated as:

Year	2011	2012	2013	2014	2015	2016	2017
Earnings	21	24.15	27.77	31.94	36.73	42.24	44.77
Dividends	6.90	7.94	9.12	10.49	12.07	13.88	29.10

- a. The price as of 2016 = $29.10 / (0.123 - 0.06) = ₹ 461.90$
- b. The required rate of return upto 2016 = $.0625 + 1.4(0.055) = 13.95\%$. The dividends upto 2016 are discounted using this rate.

The current price can be computed as follows:

Year	PVF@13.95%	Cash Inflows ₹	PV ₹
2012	0.878	7.94	6.97
2013	0.770	9.12	7.02
2014	0.676	10.49	7.09
2015	0.593	12.07	7.16
2016	0.521	13.88	7.23
2016	0.521	461.90	240.65
			276.12

Thus the price of share two stage dividend discount model shall be ₹ 276.12

- 4 (a) Cost of capital used by the analyst by applying Free Cash Flow to Firm (FCFF) Model is as follows:

$$V_0 = \frac{FCFF_1}{k_c - g_n}$$

where

$FCFF_1$ = Expected FCFF

k_c = Cost of Capital

g_n = Growth rate forever

Thus

$$₹ 750 \text{ lakhs} = ₹ 30 \text{ lakhs} / (k_c - g)$$

Since $g = 5\%$

then $k_c = 9\%$

Let X be the weight of Debt

Given Cost of equity = 12%; Cost of debt = 6%

then

$$12\% (1-X) + 6\% X = 9\%$$

Hence $X = 0.50$

So analyst used book value weight for debt and equity 50% each.

Correct weights should be 75% of equity and 25% of debt. Accordingly,

Cost of capital = $k_c = 12\% (0.75) + 6\% (0.25) = 10.50\%$

Correct firm value = ₹ 30 Lakhs / $(0.105 - 0.05) = ₹ 545.45$ lakhs

(b) Money market hedge

CQS plc should place sufficient Euros on deposit now so that, with accumulated interest, the six-month liability of €250,000 can be met. Since the company has no surplus cash at the present time, the cost of these Euros must be met by a short-term Pound Sterling loan.

Six-month Euro deposit rate = $3\frac{1}{2}\%$ = 1.75%

Current spot selling rate = € 1.998 – 0.002 = €1.996 per £

Six-month Pound Sterling borrowing rate = $6\frac{1}{2}\%$ = 3.05%

Euros deposited now = $250,000 / 1.0175$ = € 2,45,700

Cost of these Euros at spot = $245,700 \times 1.996$ = £ 1,23,096

Pound Sterling repayment of loan in six months' time = $123,096 \times 1.0305$ = £ 1,26,850

Forward market hedge

Six months forward selling rate = € 1.979 – 0.004 = € 1.975 per £

Pound Sterling cost using forward market hedge = $€ 2,50,000 / 1.975$ = £ 1,26,582

Lead payment

Since the Euro is appreciating against the Pound Sterling, a lead payment may be worthwhile.

Pound Sterling cost now = $€ 2,50,000 / 1.996$ = £ 1,25,251

This cost must be met by a short-term loan at a six-month interest rate of 3.05%

Pound Sterling value of loan in six months' time = $£ 1,25,251 \times 1.0305$ = £1,29,071

Evaluation of hedges

The relative costs of the three hedges can be compared since they have been referenced to the same point in time, i.e. six months in the future. The most expensive hedge is the lead payment, while the cheapest is the forward market hedge. Using the forward market to hedge the account payable currency risk can therefore be recommended.

5 (a) Decision at decision node D_2 –

If Mr. Parker continues the lease then Pay-off will be:

= $£1,000,000 \times 0.80 + £300,000 \times 0.20 - £5,00,000 = £3,60,000$

If Mr. Parker does not continue the lease then Pay-off will be:

$$= -£2,00,000$$

Thus Mr. Parker should continue the lease.

Decision at decision node D₃ –

If Mr. Parker continues the lease then Pay-off will be:

$$= £1,000,000 \times 0.10 + £300,000 \times 0.90 - £5,00,000 = -£1,30,000$$

If Mr. Parker does not continue the lease then Pay-off will be:

$$= -£2,00,000$$

Thus Mr. Parker should continue the lease.

Decision at decision node D₄ –

If Mr. Parker continues the lease then Pay-off will be:

$$= £1,000,000 \times 0.80 + £300,000 \times 0.20 - £6,00,000 = £2,60,000$$

If Mr. Parker does not continue the lease then Pay-off will be:

$$= \text{Nil}$$

Thus Mr. Parker should continue the lease.

Decision at decision node D₅ –

If Mr. Parker continues the lease then Pay-off will be:

$$= £1,000,000 \times 0.10 + £300,000 \times 0.90 - £6,00,000 = -£2,30,000$$

If Mr. Parker does not continue the lease then Pay-off will be:

$$= \text{Nil}$$

Thus Mr. Parker should not continue the lease.

Among above decisions the highest pay-off is at D₂ i.e. to continue lease.

$$\text{Pay off at Event Node 1 i.e. } E_1 = (£1,000,000 + £360,000)0.40 + (£300,000 - £130,000)0.60 = £646,000$$

$$E_2 = (£1,000,000 + £260,000)0.40 + (£300,000 + £0)0.60 = £684,000$$

Decision at decision node D₁ –

If Mr. Parker signs lease for 2 years

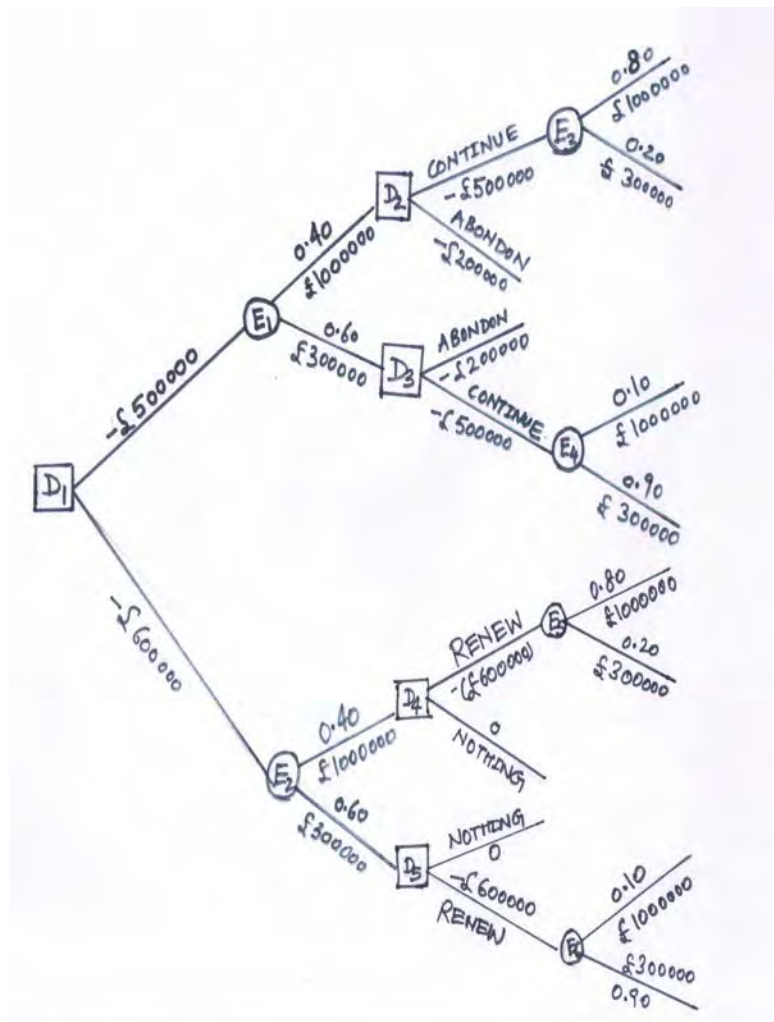
$$£646,000 - £500,000 = £146,000$$

If Mr. Parker signs lease for 1 year

$$£684,000 - £600,000 = £84,000$$

Since pay-off is higher in case the lease is signed for 2 year, Mr. Parker should sign for 2 years and continue even in year 1 the results are good or bad.

Diagram of Decision Tree



(b)

Scheme	Investment	Unit Nos.	Unit NAV 31.3.2010	Total NAV 31.3.2010
	₹		₹	₹
MF A	50,000	4761.905	10.40	49,523.812
MF B	1,00,000	10,000	10.10	1,01,000
MF C	50,000	5,000	9.80	49,000

Scheme	NAV (+) / (-)	Dividend Received	Total Yield	Number of days	Effective Yield (% P.A.)
	₹	₹	₹		
MF A	(-)476.188	950	473.812	121	2.858%
MF B	(+)1,000	1,500	2,500	90	10.139%
MF C	(-)1,000	Nil	(-)1,000	31	(-)24%*

* Alternatively it can also be 23.55%.

6 (a) Market Risk Premium (A) = 14% – 7% = 7%

Share	Beta	Risk Premium (Beta x A) %	Risk Free Return %	Return %	Return ₹
Oxy Rin Ltd.	0.45	3.15	7	10.15	8,120
Boxed Ltd.	0.35	2.45	7	9.45	14,175
Square Ltd.	1.15	8.05	7	15.05	33,863
Ellipse Ltd.	1.85	12.95	7	19.95	<u>89,775</u>
Total Return					<u>1,45,933</u>

Total Investment ₹ 9,05,000

$$(i) \text{ Portfolio Return} = \frac{₹ 1,45,933}{₹ 9,05,000} \times 100 = 16.13\%$$

(ii) Portfolio Beta

$$\text{Portfolio Beta} = \text{Risk Free Rate} + \text{Risk Premium} \times \beta = 16.13\%$$

$$7\% + 7\beta = 16.13\%$$

$$\beta = 1.30$$

Alternative Approach

First we shall compute Portfolio Beta using the weighted average method as follows:

$$\text{Beta}_P = 0.45 \times \frac{0.80}{9.05} + 0.35 \times \frac{1.50}{9.05} + 1.15 \times \frac{2.25}{9.05} + 1.85 \times \frac{4.50}{9.05}$$

$$= 0.45 \times 0.0884 + 0.35 \times 0.1657 + 1.15 \times 0.2486 + 1.85 \times 0.4972 = 0.0398 + 0.058 + 0.2859 + 0.9198 = 1.3035$$

Accordingly,

(i) Portfolio Return using CAPM formula will be as follows:

$$\begin{aligned}
 R_P &= R_F + \text{Beta}_P(R_M - R_F) \\
 &= 7\% + 1.3035(14\% - 7\%) = 7\% + 1.3035(7\%) \\
 &= 7\% + 9.1245\% = 16.1245\%
 \end{aligned}$$

(ii) Portfolio Beta

As calculated above 1.3035

(b) Let the probability of attaining the maximum price be p

$$(500 - 420) \times p + (400 - 420) \times (1-p) = 420 \times (e^{0.02 \cdot 1})$$

$$\text{or, } 80p - 20(1 - p) = 420 \times 0.0202$$

$$\text{or, } 80p - 20 + 20p = 8.48$$

$$\text{or, } 100p = 28.48$$

$$p = 0.2848$$

$$\text{The value of Call Option in ₹} = \frac{0.2848 \times (500 - 450)}{1.0202} = \frac{0.2848 \times 50}{1.0202} = 13.96$$

- 7 (a) A very important phenomenon witnessed in the Mergers and Acquisitions scene, in recent times is one of buy - outs. A buy-out happens when a person or group of persons gain control of a company by buying all or a majority of its shares. A buyout involves two entities, the acquirer and the target company. The acquirer seeks to gain controlling interest in the company being acquired normally through purchase of shares. There are two common types of buy-outs: Leveraged Buyouts (LBO) and Management Buy-outs (MBO). LBO is the purchase of assets or the equity of a company where the buyer uses a significant amount of debt and very little equity capital of his own for payment of the consideration for acquisition. MBO is the purchase of a business by its management, who when threatened with the sale of its business to third parties or frustrated by the slow growth of the company, step-in and acquire the business from the owners, and run the business for themselves. The majority of buy-outs is management buy-outs and involves the acquisition by incumbent management of the business where they are employed. Typically, the purchase price is met by a small amount of their own funds and the rest from a mix of venture capital and bank debt.

Internationally, the two most common sources of buy-out operations are divestment of parts of larger groups and family companies facing succession problems. Corporate groups may seek to sell subsidiaries as part of a planned strategic disposal programme or more forced reorganisation in the face of parental financing problems. Public companies have, however, increasingly sought to dispose of subsidiaries through an auction process partly to satisfy shareholder pressure for value maximisation.

In recessionary periods, buy-outs play a big part in the restructuring of a failed or failing businesses and in an environment of generally weakened corporate performance often represent the only viable purchasers when parents wish to dispose of subsidiaries.

Buy-outs are one of the most common forms of privatisation, offering opportunities for enhancing the performances of parts of the public sector, widening employee ownership and giving managers and employees incentives to make best use of their expertise in particular sectors.

- (b) **Social Cost Benefit Analysis:** It is increasingly realised that commercial evaluation of projects is not enough to justify commitment of funds to a project especially when the project belongs to public utility and irrespective of its financial viability it needs to be implemented in the interest of the society as a whole. Huge amount of funds are committed every year to various public projects of all types—industrial, commercial and those providing basic infrastructure facilities. Analysis of such projects has to be done with reference to the social costs and benefits since they cannot be expected to yield an adequate commercial rate of return on the funds employed at least during the short period. A social rate of return is more important. The actual costs or revenues do not necessarily reflect the monetary measurement of costs or benefits to the society. This is because the market price of goods and services are often grossly distorted due to various artificial restrictions and controls from authorities, hence a different yardstick has to be adopted for evaluating a particular project of social importance and its costs and benefits are valued at 'opportunity cost' or shadow prices to judge the real impact of their burden as costs to the society. Thus, social cost benefit analysis conducts a monetary assessment of the total cost and revenues or benefits of a project, paying particular attention to the social costs and benefits which do not normally feature in conventional costing.

United Nations Industrial Development Organisation (UNIDO) and Organisation of Economic Cooperation and Development (OECD) have done much work on Social Cost Benefit analysis. A great deal of importance is attached to the social desirability of projects like employment generation potential, value addition, foreign exchange benefit, living standard improvement etc. UNIDO and OECD approaches need a serious consideration in the calculation of benefits and costs to the society. This technique has got more relevance in the developing countries where public capital needs precedence over private capital.

- (c) **American Depository Receipts (ADRs):** A depository receipt is basically a negotiable certificate denominated in US dollars that represent a non- US Company's publicly traded local currency (INR) equity shares/securities. While the term refer to them is global depository receipts however, when such receipts are issued outside the US, but issued for trading in the US they are called AD₹

An ADR is generally created by depositing the securities of an Indian company with a custodian bank. In arrangement with the custodian bank, a depository in the US issues the ADR. The ADR subscriber/holder in the US is entitled to trade the ADR and generally enjoy rights as owner of the underlying Indian security. ADRs with special/unique features have been developed over a period of time and the practice of issuing ADRs by Indian Companies is catching up.

Only such Indian companies that can stake a claim for international recognition can avail the opportunity to issue ADR. The listing requirements in US and the US GAAP requirements are fairly severe and will have to be adhered. However if such conditions are met ADR becomes an excellent source of capital bringing in foreign exchange.

These are depository receipts issued by a company in USA and are governed by the provisions of Securities and Exchange Commission of USA. As the regulations are severe, Indian companies tap the American market through private debt placement of GDRS listed in London and Luxemburg stock exchanges.

Apart from legal impediments, ADRS are costlier than Global Depository Receipts (GDRS). Legal fees are considerably high for US listing. Registration fee in USA is also substantial. Hence, ADRS are less popular than GDRS.

- (d) **Asset Securitisation:** Securitisation is a process of transformation of illiquid asset into security which may be traded later in the open market. It is the process of transformation of the assets of a lending institution into negotiable instruments. The term 'securitisation' refers to both switching away from bank intermediation to direct financing via capital market and/or money market, and the transformation of a previously illiquid asset like automobile loans, mortgage loans, trade receivables, etc. into marketable instruments.

This is a method of recycling of funds. It is beneficial to financial intermediaries, as it helps in enhancing lending funds. Future receivables, EMI and annuities are pooled together and transferred to a special purpose vehicle (SPV). These receivables of the future are shifted to mutual funds and bigger financial institutions. This process is similar to that of commercial banks seeking refinance with NABARD, IDBI, etc.

- (e) **Drawbacks of investment in Mutual Funds**

- (i) There is no guarantee of return as some Mutual Funds may under perform and Mutual Fund Investment may depreciate in value which may even effect erosion / Depletion of principal amount.
- (ii) Diversification may minimize risk but does not guarantee higher return.
- (iii) Mutual funds performance is judged on the basis of past performance record of various companies. But this cannot take care of or guarantee future performance.

- (iv) Mutual Fund cost is involved like entry load, exit load, fees paid to Asset Management Company etc.
- (v) There may be unethical Practices e.g. diversion of Mutual Fund amounts by Mutual Fund /s to their sister concerns for making gains for them.
- (vi) MFs, systems do not maintain the kind of transparency, they should maintain
- (vii) Many MF scheme are, at times, subject to lock in period, therefore, deny the market drawn benefits
- (viii) At times, the investments are subject to different kind of hidden costs.
- (ix) Redressal of grievances, if any, is not easy