

Question Paper

Portfolio Management and Mutual Funds - I (MSF2D3) : October 2008

Section A : Basic Concepts (30 Marks)

- This section consists of questions with serial number 1 - 30.
- Answer all questions.
- Each question carries one mark.
- Maximum time for answering Section A is 30 Minutes.

1. Mr. Ajay, a wealth manager, wants to analyze the category of one of his clients, Mr. Bagga. After understanding the psychology of Mr. Bagga, Mr. Ajay came to a conclusion that Mr. Bagga is halfway between complete confidence and anxiety as well as midway between extreme carefulness and impetuosity. According to Biellard, Biehl and Kaiser five way model, Mr. Bagga can be categorized as

[<Answer>](#)

- (a) Individualist
- (b) Adventurer
- (c) Celebrity
- (d) Guardian
- (e) Straight Arrow.

2. As per Arbitrage Pricing Theory (APT), which is a multi factor model, the return on any asset i is given by

[<Answer>](#)

$$R_i = \alpha_{i0} + \beta_{i1} I_1 + \beta_{i2} I_2 + \beta_{i3} I_3 + \dots + \beta_{im} I_m + e_i$$

where the notations are in their standard use.

If the variance $(R_i) = 360(\%)^2$ and the above equation explains 80% of the total variance, the variance of error term i.e. $\text{Var}(e_i)$ will be

- (a) $0(\%)^2$
- (b) $72(\%)^2$
- (c) $100(\%)^2$
- (d) $150(\%)^2$
- (e) $160(\%)^2$.

3. Which of the following strategies is/are semi active strategy(ies) in fixed income portfolio management?

[<Answer>](#)

- I. Bond laddering.
 - II. Dedication.
 - III. Immunization.
- (a) Only (I) above
 - (b) Only (II) above
 - (c) Both (I) and (II) above
 - (d) Both (II) and (III) above
 - (e) All (I), (II) and (III) above.

4. There are a variety of option combinations which traders can adopt to suit their risk-return profile. One such option strategy available to traders is strip. The buyer of strip expects

[<Answer>](#)

- (a) Market to remain stable
- (b) Market to be volatile
- (c) Market to be volatile but thinks that it is more likely to decline than rise in future
- (d) Market to be volatile but thinks that it is more likely to rise than fall in future
- (e) Market to be volatile but cannot forecast the direction of change.

5. An immunized portfolio requires frequent rebalancing because

[<Answer>](#)

- I. There is a change in the yield of bonds.
 - II. The duration of bond portfolio reduces, as the maturity approaches.
 - III. There are no parallel shifts in the yield curve.
- (a) Only (I) above
 - (b) Only (II) above
 - (c) Both (I) and (II) above
 - (d) Both (II) and (III) above
 - (e) All (I), (II) and (III) above.

6. Following is the information pertaining to stocks of two companies, HUL and ITC:

[<Answer>](#)

Stock	HUL	ITC
-------	-----	-----

Expected return (%)	21	18
Variance of return (% ²)	36	12

The combination of the two stocks will have lesser risk than the risk of either asset taken alone, if coefficient of correlation between the stocks of HUL and ITC is approximately less than

- (a) 0.93
- (b) 0.86
- (c) 0.73
- (d) 0.62
- (e) 0.58.

7. Mr. Abhishek wants to form a portfolio that lies to the right of the optimal risky portfolio on asset allocation line. He can do it by

[<Answer>](#)

- I. Lending some money at the risk free rate and investing the remainder in the optimal risky portfolio.
- II. Borrowing some money at the risk free rate and investing in the optimal risky portfolio.
- III. Investing only in risk free assets.

- (a) Only (I) above
- (b) Only (II) above
- (c) Only (III) above
- (d) Both (I) and (III) above
- (e) Both (II) and (III) above.

8. Which of the following statements is **true** regarding formula plans in portfolio revision?

[<Answer>](#)

- (a) In dollar-cost-averaging, the investor must fix predetermined action points called revaluation points
- (b) Variable ratio plan implies selling of stocks and buying of bonds as stock prices rise and the buying of stocks and selling of bonds as stock prices fall
- (c) Dollar-cost-averaging works well over short periods
- (d) Variable ratio plan requires less accurate forecasting than other plans and hence is less complicated
- (e) The constant dollar value plan does not require forecast of the level to which stock prices may fall.

9. Which of the following is/are included by Geoffrey Moore (1983) in his leading indices of inflation?

[<Answer>](#)

- I. Employment rate of the population.
- II. Changes in the import prices excluding oil prices.
- III. Debt growth rate of the household sector.

- (a) Only (I) above
- (b) Only (III) above
- (c) Both (I) and (II) above
- (d) Both (I) and (III) above
- (e) Both (II) and (III) above.

10. Which of the following is/are **not** the assumption(s) of Systematic Asset Allocation?

[<Answer>](#)

- I. The markets cannot provide the information regarding the returns available.
- II. The relative expected returns reflect consensus.
- III. The measurement of potential returns cannot provide useful clues to those returns that will actually be realized.

- (a) Only (I) above
- (b) Only (III) above
- (c) Both (I) and (II) above
- (d) Both (I) and (III) above
- (e) All (I), (II) and (III) above.

11. Which of the following statements is/are **false** with respect to yield enhancement strategy of portfolio using index futures?

[<Answer>](#)

- I. Yield enhancement strategy refers to portfolio strategy of holding a synthetic stock index fund.
- II. In yield enhancement strategy, in the absence of yield enhancement, synthetic securities can not be useful for hedging a portfolio position which is quite difficult to hedge in the cash market either because of lack of liquidity or some imposed constraints.
- III. Yield enhancement strategy provides better return on a portfolio by exploiting the mispricing of the futures.

- (a) Only (I) above
- (b) Only (II) above
- (c) Both (I) and (II) above
- (d) Both (I) and (III) above
- (e) Both (II) and (III) above.

12. Consider the following data pertaining to equity scheme offered by Nachmo mutual fund:

[<Answer>](#)

Particulars	Rs. in crore
Investments	2,500.00

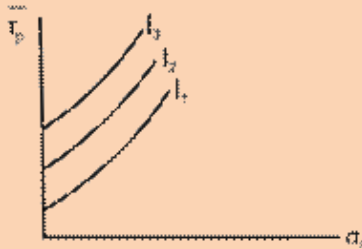
Receivables	150.00
Accrued income	65.00
Accrued expenses	150.00
Other current assets	675.00
Liabilities	750.00

The number of outstanding units is 195 crore and repurchase price is Rs.13.25. The applicable exit load on the scheme is approximately

- (a) 3.62%
- (b) 3.17%
- (c) 3.02%
- (d) 2.87%
- (e) 2.62%.

13. Consider the following figure:

[<Answer>](#)



Indifference curves present in the above figure indicate

- (a) Risk-loving investors
- (b) Risk-neutral investors
- (c) Moderately risk-averse investors
- (d) Slightly risk-averse investors
- (e) Highly risk-averse investors.

14. An investment strategy designed to earn a minimum rate of return while allowing the investor to benefit substantially from the positive returns generated by an investment in a risky portfolio is called

[<Answer>](#)

- (a) Portfolio dedication
- (b) Portfolio insurance
- (c) Portfolio revision
- (d) Portfolio attribution
- (e) Portfolio construction.

15. Which of the following statements is/are **true** according to the geometric mean model of the portfolio selection?

[<Answer>](#)

- I. This model leads to selection of portfolio that fit into the mean-variance model.
- II. The selection of the portfolio can be made without any analysis of the utility function of the investor and the distribution of the stock returns.
- III. The selection of the portfolio should take place based on utility maximization rather than the ending wealth.

- (a) Only (I) above
- (b) Only (II) above
- (c) Only (III) above
- (d) Both (I) and (II) above
- (e) Both (II) and (III) above.

16. Consider the following regression equation between return on ITI fund and that of return on market

[<Answer>](#)

$$R_p = a_p + b r_m + c$$

Where, the notations are in their standard use:

If the value of c in the above equation is positive,

- I. The curve becomes steeper as value of r_m increases.
- II. The curve becomes milder as value of r_m decreases.
- III. The fund manager has reflected better selection skills.

- (a) Only (I) above
- (b) Only (II) above
- (c) Both (I) and (II) above
- (d) Both (I) and (III) above
- (e) All (I), (II) and (III) above.

17. Consider the following information related to an Index fund and its benchmark index for a period of six months:

[<Answer>](#)

Months	Return of Fund	Return on Benchmark Index

1	12.67%	12.15%
2	12.85%	13.05%
3	12.34%	12.40%
4	12.30%	12.35%
5	11.92%	11.88%
6	11.69%	11.72%

The tracking error of the Index fund's return during the last six months is

- (a) 0.0925%
- (b) 0.1826%
- (c) 0.2494%
- (d) 0.2918%
- (e) 0.4922%.

18. Convexity of a bond can be viewed as the sensitivity of the

- (a) Duration to the term to maturity
- (b) Market price to the interest rates
- (c) Market price to the duration
- (d) Market price to the term to maturity
- (e) Duration to the interest rates.

[<Answer>](#)

19. A 25 year zero coupon bond is newly issued with a yield to maturity of 12% and face value of Rs.10,000. The imputed interest income in the first year of the bond's life is

- (a) Rs.120.00
- (b) Rs.116.43
- (c) Rs.101.24
- (d) Rs. 91.65
- (e) Rs. 70.59.

[<Answer>](#)

20. Which of the following statements is/are **not true** with respect to ExMark?

- I. It is a term that defines the relationship between a fund's return and return on market index.
 - II. An ExMark below 80% indicates more predictability of relative performance.
 - III. Funds with an ExMark of 95% or above provide more opportunity to add value over and above the market's return.
- (a) Only (I) above
 - (b) Only (III) above
 - (c) Both (I) and (II) above
 - (d) Both (II) and (III) above
 - (e) All (I), (II) and (III) above.

[<Answer>](#)

21. Which of the following statements is **not true** with respect to the various methods of computing Value at Risk (VAR)?

- (a) Stress Testing involves comparison of the value of a portfolio of exposures or assets under various market assumptions
- (b) Monte Carlo Simulation Method is used to generate a large number of market movements which is consistent with expected volatility and correlations
- (c) Historic Simulation Method is based on the assumptions about the distribution of returns and stability of the volatilities and correlations
- (d) In Historic Simulation Method, the use of the number of trading days for collecting data may not be a representative of future market movements
- (e) Variance/Covariance Method is also termed as correlation method.

[<Answer>](#)

22. The objective of Mr. Amit is to limit his portfolio risk to $400(\%)^2$. The return on gilt-edged securities is 7.5%. If the market portfolio is generating a return of 10% and standard deviation of its returns is 25%, using the separation theorem, expected return on the portfolio is approximately

- (a) 6.21%
- (b) 9.50%
- (c) 12.30%
- (d) 14.33%
- (e) 19.50%.

[<Answer>](#)

23. Which of the following risks is **not** considered by Burmeister, Ibbotson, Roll and Ross (BIRR) macro economic factor model?

- (a) Confidence risk
- (b) Time horizon risk
- (c) Currency risk
- (d) Business cycle risk
- (e) Market timing risk.

[<Answer>](#)

24. An insurance company has the following obligations towards its customers.

[<Answer>](#)

At the end of the year	Obligations (Rs.)
------------------------	-------------------

3	9,00,000
6	14,00,000
12	19,00,000

If the cost of such liabilities is 8.5% and company wants to immunize its obligations with the investment in a zero coupon bond, it must purchase the zero coupon bond with the maturity of

- (a) 7.4215 years
- (b) 6.9528 years
- (c) 5.9678 years
- (d) 4.8576 years
- (e) 3.4568 years.

25. Mr. Sethia is holding 10 bonds of Max India Ltd. The market price of a bond is Rs.1,500 and standard deviation in change in the price of the bond is Rs.10.25. One year futures contract on a similar bond is available at Rs.1,575. For minimizing risk, if Mr. Sethia has taken long position in 7 future contracts on similar bond, the standard deviation of change in futures price is approximately

- (a) Rs.19.52
- (b) Rs.16.65
- (c) Rs.15.50
- (d) Rs.13.95
- (e) Rs.12.16.

[<Answer>](#)

26. The measure which indicates the percentage of the variance in the portfolio's returns that is explained by the market's returns is

- (a) Coefficient of determination
- (b) Coefficient of correlation
- (c) Standard deviation
- (d) Variance
- (e) Alpha.

[<Answer>](#)

27. An investor has constructed a strap strategy using the following options available on the stock of DLF Ltd. :

Option	Strike price (Rs.)	Premium (Rs.)
Call	500	22.20
Put	500	23.70
Call	520	13.60

If the investor closes his position, when the stock is selling at Rs.515 per share, profit/(loss) is

- (a) Rs.28.09
- (b) Rs.38.10
- (c) Rs.50.90
- (d) Rs.(38.10)
- (e) Rs.(50.90).

[<Answer>](#)

28. The Sharpe ratio and Treynor ratio of Reliance Equity Fund are 0.48 and 5.26 respectively. Standard deviation of the fund's return is 13.15%. The beta of the fund is approximately

- (a) 0.80
- (b) 1.05
- (c) 1.20
- (d) 1.35
- (e) 1.50.

[<Answer>](#)

29. If the covariance between two securities is negative,

- I. Coefficient of correlation between the two securities should be negative.
- II. Coefficient of correlation between the two securities should be positive.
- III. Coefficient of determination between the two securities should be positive.
- IV. Variances of the two securities should be positive.

- (a) Both (I) and (II) above
- (b) Both (II) and (III) above
- (c) Both (III) and (IV) above
- (d) (I), (II) and (III) above
- (e) (I), (III) and (IV) above.

[<Answer>](#)

30. Which of the following statements are **true** with respect to the assumptions made under Arbitrage Pricing Theory (APT)?

- I. Investors have homogeneous expectations and are expected-utility-of-wealth maximizers.
- II. There is a single period investment horizon.
- III. There are no imperfections in the market to impede investor from buying and selling.
- IV. The investor selects portfolios based on the expected mean and variance of returns.
- V. The error term is expected to have a mean value of zero over a period of time.

[<Answer>](#)

- (a) Both (I) and (IV) above
 (b) Both (II) and (III) above
 (c) (I), (III) and (V) above
 (d) (II), (IV) and (V) above
 (e) All (I), (II), (III), (IV) and (V) above.

END OF SECTION A

Section B : Problems (50 Marks)

- This section consists of questions with serial number 1 – 5.
- Answer all questions.
- Marks are indicated against each question.
- Detailed workings should form part of your answer.
- Do not spend more than 110 - 120 minutes on Section B.

1. Mr. Jain is considering four stocks, Entegra, Simplex, Samtel and Lumax. The returns on these stocks can be explained by three factors viz. long-term interest rates, oil prices and exchange rates. The average rate of return and the sensitivity of returns on these stocks to the three factors are given below:

Stocks	Sensitivities associated with			Average Rate of Return (%)
	Long term interest rate	Oil prices	Exchange rates	
Entegra	0.20	-0.20	0.80	9.60
Simplex	0.70	0.10	0.60	16.03
Samtel	0	0.80	0.70	14.00
Lumax	0.60	-0.20	0.70	13.35

Further on the basis of his expectations, Mr. Jain is considering to construct two alternative portfolios using the above four stocks in the following proportions:

Stocks	Proportion in Portfolio 1 (%)	Proportion in Portfolio 2 (%)
Entegra	12.5	50.0
Simplex	25.0	25.0
Samtel	12.5	12.5
Lumax	50.0	12.5

Assuming the risk free rate of return of 7.5%, you are **required** to :

- Compute the risk premiums pertaining to long term interest rates and exchange rates, assuming that the market is at equilibrium and the risk premium associated with oil prices is 7%.
(4 marks)
- Suggest which of the portfolios considered by Mr. Jain can be selected, if his objective is to maximize the return.
(2 marks)
- Determine the sensitivities of returns of the above portfolios to the long term interest rates and exchange rates, assuming that the returns of portfolios are insensitive to the oil prices.
(4 marks)

2. Mr. Goenka, a fund manager of a pension fund, is managing a portfolio of Rs.700 crore. He has pension obligations for a period of 5 years, the first payment of which will commence from the end of first year from now. His first pension obligation is expected to be Rs.50 crore and is expected to increase by 20% every year. The cost of such liabilities in the market is 12%. He is planning to invest in the following two bonds to immunize his obligations:

Bond	Face Value (Rs.)	Current Market Price (Rs.)	Remaining Maturity (Years)	Coupon Rate (%)
Zero coupon Bond	1,000	950	3	-
Floating Rate Bond	100	97.5	5	One year Mibor + 0.5

Currently one year Mibor rate is 11% which is likely to increase by 25 basis points p.a. for the next 2 years. Mibor rate is expected to decline by 15 basis points p.a. in the 4th and 5th years.

You are **required** to calculate the proportions of funds to be invested in each of the bonds so that the fund manager's liability is completely immunized.

(10 marks)

3. Following is the information pertaining to performance of two portfolios managed by two portfolio managers John and Max, and the benchmark:

[<Answer>](#)

Asset class	Benchmark		Portfolio managed by John		Portfolio managed by Max	
	Weight (%)	Return (%)	Weight (%)	Return (%)	Weight (%)	Return (%)
Stocks	60	7	70	5	50	6
Bonds	30	10	20	7	30	6
Cash and Equivalents	10	7.5	10	4	20	3

You are **required** to

- a. Compare the total value added by the two portfolio managers.

(2 marks)

- b. Calculate the total value added by the selection and allocation abilities of the portfolio managers.

(6 marks)

4. Mr. Singh has forecasted that the market return follows the following relationship:

[<Answer>](#)

$$R_m = \text{Risk free rate} + \text{Risk premium of } 7\%.$$

The market return historically has shown a variance of $25\%^2$. He has zeroed in on the following stocks with the parameters given below:

Stock	Jensen's Alpha (%)	Beta	Residual Variance ($\%^2$)
Bajaj Hindustan	-0.45	1.28	9.35
Ballarpur Ind.	1.14	1.23	5.92
Pantaloon Retail	0.02	0.82	9.79
Jindal steel	0.23	1.50	5.36
Idea cellular	0.45	0.77	4.52

The 182-day T-bills are currently yielding a return of 7.5% p.a.

You are **required** to construct an optimum portfolio using the Sharpe's optimization method.

(10 marks)

5. Owing to the various global and domestic concerns like US recession, rise in crude oil prices, record level inflation and FII flows, etc., market has been witnessing significant volatility. Mr. Sinha, a portfolio manager, expects that this volatility in the stock prices will continue in the near future. Mr. Pandey, a client of Mr. Sinha, is holding 1000 shares of Reliance Power, which he wants to liquidate in December 2008 to finance the higher education of his son. As he is of the opinion that stock price of Reliance Power will decline in future, he wants to hedge his position. Mr. Sinha suggests him the following options on the stock of Reliance Power:

[<Answer>](#)

Company	Current Market Price (Rs.)	Option	Expiry date	Strike price (Rs.)	Premium (Rs.)	Contract size (No. of shares)
Reliance Power	130	Call	24.12.08	120	16.40	500
		Put	24.12.08	130	9.90	500

He also suggests him to adopt any of the following strategies using the above stock options in order to hedge his position:

Strategy 1: Writing two call option contracts on the stock of Reliance Power.

Strategy 2: Buying two put option contracts on the stock of Reliance Power.

Strategy 3: Writing two call option contracts and buying two put option contracts on the stock of Reliance Power.

Considering that on expiration day, the stock may range between Rs.90 and Rs.170 (in multiple of 10), you are **required** to show the net cash flows along with diagram for each strategy and also suggest the best strategy for Mr. Pandey.

(12 marks)

END OF SECTION B

Section C : Applied Theory (20 Marks)

- This section consists of questions with serial number 6 - 7.
- Answer all questions.
- Marks are indicated against each question.
- Do not spend more than 25 - 30 minutes on Section C.

6. The portfolio manager needs to be alert and sensitive to the changes in the requirements of the client. In this regard, discuss the

[<Answer>](#)

important factors affecting the client that make it necessary to change the portfolio composition.

(10 marks)

7. Asset allocation should be dynamic and at the same time it should be integrated. Depending on the process of asset allocation, there can be various approaches of asset allocation. Discuss the popular approaches of asset allocation.

[<Answer>](#)

(10 marks)

END OF SECTION C

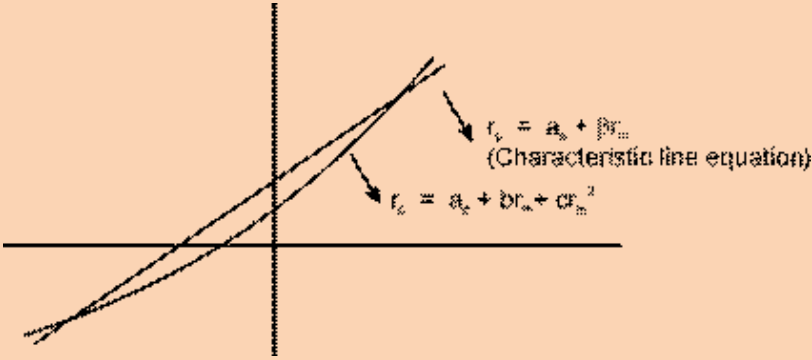
END OF QUESTION PAPER

Suggested Answers

Portfolio Management and Mutual Funds - I (MSF2D3) : October 2008

Section A : Basic Concepts

Answer	Reason	
1.	EAs per Bielard, Biehl and Kaiser five way model 'Straight Arrows' are investors who are halfway between complete confidence and anxiety as well as midway between extreme carefulness and impetuosity. Hence option (e) is the answer.	< TOP >
2.	$\text{Variance of } (r_i) = \text{Variance explained by the factor model} + \text{Unexplained variance i.e., variance of error term}$ $360 = 0.8 \times 360 + \text{Var}$ $\text{Var} = 360 - 0.8 \times 360 = 72(\%)^2.$	< TOP >
3.	DBond laddering is a passive strategy because it involves investing in bonds with several maturity dates to minimize fluctuations in the current level of income. Normally, no intermediate revision takes place. Dedication and Immunization are semi-active strategies where intermediate revisions are required because of changing circumstances.	< TOP >
4.	CStrip strategy consists of buying two put and one call at the same expiration price and expiration date. More number of puts in this strategy indicates that although investor thinks that market will be volatile but it is more likely that it will decline in future.	< TOP >
5.	EImmunized portfolios require frequent adjustment due to change in the yield of the bond which changes their duration and original match with duration of liability proves out to be wrong. Again as the investment horizon decrease the duration of the bond portfolio changes which needs to be balanced with duration of the liabilities. Hence (I), (II) and (III) are correct and option (e) is the answer.	< TOP >
6.	EThe combination of two stocks A & B will have lesser risk than the risk of either asset taken alone if and only if $r_{AB} < \frac{\sigma_A}{\sigma_B} \text{ where } \sigma_A < \sigma_B$ $< \frac{\sigma_A}{\sigma_B}$ Therefore, $\frac{\sigma_A}{\sigma_B} = 0.3333 \Rightarrow r = 0.577 \approx 0.58.$	< TOP >
7.	BThis is the characteristic of aggressive investors having higher risk tolerance. The investors take the higher risk by borrowing money at the risk free rate (available under the assumption (APM) and invest the same in the market portfolio.	< TOP >
8.	BDollar cost averaging works out well over a long period. In it a fixed amount is invested every time irrespective the prevailing price of the share. Hence (a) and (c) are not correct. Further, (d) is not correct, as variable ratio plan is more complicated. Similarly (e) is not correct, as one requires the forecast of the level to which stock prices may rise or fall.	< TOP >
9.	C The following are included by Geoffrey Moore (1983) in one of his leading indices of inflation. • Employment rate of the population • Debt growth rate for both corporate and consumer • Industrial material price changes • Changes in the import prices excluding oil prices • Debt growth rate of the central bank • Survey report of Dun and Bradstreet's for future corporate selling prices. Since statement (III) is false and (I) and (II) are true, alternative (c) is answer.	< TOP >
10.	D The assumptions of Systematic Asset Allocation are as follows: - The markets provide the information regarding the returns available. - The relative expected returns reflect consensus. - The measurement of potential returns provides useful clues to those returns that are actually realized. Hence, statements (I) and (III) mentioned are false and alternative (d) is answer.	< TOP >

11. b Yield enhancement strategy refers to portfolio strategy of holding a synthetic stock index fund. [< TOP >](#)
 In this strategy, even in the absence of yield enhancement, synthetic securities can be useful for hedging a portfolio position which is quite difficult to hedge in the cash market either because of lack of liquidity or some imposed constraints.
 Yield enhancement strategy provides better return on a portfolio by exploiting the mispricing of the futures.
12. A NAV = = Rs.12.77 [< TOP >](#)
 Repurchase price =
 $1 - \text{exit load} =$
 $1 - \text{Sales charge} = 0.9638$
 $\text{Sales charge} = 1 - 0.9638 = 0.0362 = 3.62\%.$
13. E Indifference curves indicated in the figure represents a highly risk averse investor as he requires substantial increase in return for assuming small increase in risk. [< TOP >](#)
14. B An investment strategy designed to earn a minimum rate of return while allowing the investor to benefit substantially from the positive returns generated by an investment in a risky portfolio is portfolio insurance. [< TOP >](#)
15. B (i) This model leads to selection of portfolios that do not fit into the mean-variance model. [< TOP >](#)
 (ii) The selection of the portfolio can be made without any analysis of the utility function of the investor and the distribution of the stock returns.
 (iii) The selection of the portfolio should take place based on ending wealth rather than the utility maximization.
 Since, statement (II) is true, alternative (b) is answer.
16. C Statements I & II are correct as shown below [< TOP >](#)
- 
- Statement III is not correct as the second order regression equation above reveals that fund manager was anticipating market changes accurately, and the superior performance of fund can be attributed to the skills in timing the market.
17. c Tracking error = Standard deviation of excess return of the index fund. [< TOP >](#)
 Excess return =
 $12.67 - 12.15 = 0.52$
 $12.85 - 13.05 = -0.20$
 $12.34 - 12.40 = -0.06$
 $12.30 - 12.35 = -0.05$
 $11.92 - 11.88 = 0.04$
 $11.69 - 11.72 = -0.03$
 Average excess return $= 0.22/6 = 0.0367.$
 Standard deviation of excess return
 $=$
 $= 0.2494\%.$
18. E Duration is a measure of the approximate sensitivity of a bond's value to interest rate changes. Duration is in fact a first (linear) approximation for small change in interest rates. The approximation can be improved by using second approximation. This approximation is referred as convexity. Therefore, convexity can be viewed as sensitivity of duration to interest rates. [< TOP >](#)
19. e The current price of the bond $= 10,000/1.12^{25} = \text{Rs.}588.23$ [< TOP >](#)
 The price of the bond after one year $= 10,000/1.12^{24} = \text{Rs.}658.82$
 The imputed interest $= \text{Rs.}658.82 - \text{Rs.}588.23 = \text{Rs.}70.59.$
20. D ExMark is a term that defines the relationship between a fund's return and market index. An ExMark below 80% indicates less predictability of relative performance. [< TOP >](#)
 Funds with an ExMark of 95% or above provide less opportunity to add value over and above the market's return.

Since statements (II) and (III) are false, alternative (d) is answer.

21. c Historic Simulation Method does not make any assumptions about the distribution of returns and stability of the volatilities and correlations. All other statements are correct. [< TOP >](#)
22. B Targeted risk $\sigma_i^2 = 400(\%)^2$ [< TOP >](#)
- $\sigma_i = 20\%$
- According to separation theorem
- $$\sigma_i^2 = (1 - wf)^2 \sigma_m^2$$
- $$\sigma_i = (1 - wf) \sigma_m$$
- $$wf = 1 -$$
- $$= 1 -$$
- $$wf = 0.20$$
- $$E(r_i) = w_f r_f + (1 - w_f)r_m$$
- $$= 0.20 \times 7.5 + 0.80 \times 10 = 9.50\%.$$
23. C The various risks considered by Burmeister, Ibbotson, Roll and Ross macro economic factor model (BIRR model) are confidence risk, time horizon risk, inflation risk, business cycle risk and market timing risk. Currency risk is not considered. [< TOP >](#)
24. B An insurance company must make payments to its customers of Rs.9,00,000 at the end of 3rd year, Rs.14,00,000 at the end of 6th year and Rs.19,00,000 at the end of 12th year. If the cost of such liabilities is 8.5%, and company wants to immunize its obligations with a single issue of a zero coupon bond, it must purchase the zero coupon bond with the maturity of 6.9528 years. [< TOP >](#)
- | Years | Obligation (Rs.) | PVIF @ 8.5% | |
|-------|------------------|--------------|----------------|
| 3 | 9,00,000 | 7,04,617.29 | 21,13,851.87 |
| 6 | 14,00,000 | 8,58,123.13 | 51,48,738.78 |
| 12 | 19,00,000 | 7,13,833.20 | 85,65,998.40 |
| | | 22,76,573.62 | 1,58,28,589.05 |
- Duration of liabilities = $1,58,28,589.05 / 22,76,573.62 = 6.9528$ years.
- Since, company wants to immunize using a single zero coupon bond, maturity of the bond should also be 6.9528 years.
25. D Number of contracts = Hedge ratio X [< TOP >](#)
- $$7 = HR \times$$
- $$HR = 0.735$$
- Hedge ratio =
- $$0.735 =$$
- Volatility of hedging instrument = Rs.13.95.
26. A Portfolio alpha is a measure of the excess return generated on the portfolio. Standard deviation and variance are measures of total risk of the portfolio. Coefficient of correlation is a measure of the co-movement in the returns on the securities constituting the portfolio or of the co-movement between the return on market index and the return on the portfolio. Coefficient of determination (r^2) is a measure of the variance in the portfolio's return that is explained by the market's return. [< TOP >](#)
27. D A strap strategy involves buying two calls and one put at same strike price. [< TOP >](#)
- Initial cash out flow = $2 \times (22.20) + 23.70 = 68.10$
- When the stock price is Rs.515, put will not be exercised but call option will be exercised. Gain on call = $(515 - 500) \times 2 = \text{Rs.}30$
- Total = $-68.10 + 30$
- Profit/Loss = $-\text{Rs.}38.10$
- = . = . =
28. c = = 10.96% [< TOP >](#)
- $$= 13.15\%$$
- $$= 1.2.$$
29. E If covariance between two securities is negative its coefficient of correlation will be negative. However coefficient of determination will be positive and variance of two securities should be always positive. Therefore, (I), (III) and (IV) are correct. [< TOP >](#)
30. C Assumptions on which APT is based [< TOP >](#)
- Investors have homogeneous expectations and are expected-utility-of-wealth maximizers.

- There are no imperfections in the market to impede investor buying and selling.
- The various factors give rise to returns on securities and the relation between security returns and these factors is linear.
- The error term is expected to have a mean value of zero over a period of time.

Hence, correct answer is option (c).

Section B : Problems

1. a. Let the risk premium associated with long term interest rates, oil prices and exchange rates be β_1 , β_2 and β_3 respectively. [< TOP >](#)

$$\text{Entegra: } 9.60 = \beta_0 + 0.2\beta_1 - 0.2\beta_2 + 0.8\beta_3$$

$$\text{Simplex: } 16.03 = \beta_0 + 0.7\beta_1 + 0.1\beta_2 + 0.6\beta_3$$

$$\text{Samtel: } 14.00 = \beta_0 + 0.0\beta_1 + 0.8\beta_2 + 0.7\beta_3$$

$$\text{Lumax: } 13.35 = \beta_0 + 0.6\beta_1 - 0.2\beta_2 + 0.7\beta_3$$

Given that risk-free rate is 7.5% and $\beta_2 = 7\%$

$$\therefore 14 = 7.5 + 0 + 0.8 \times 7 + 0.7 \beta_3$$

$$\therefore \text{Risk Premium associated with exchange rate } (\beta_3) = 1.29\%$$

$$\text{Similarly, } 9.6 = 7.5 + 0.2\beta_1 - 0.2 \times 7 + 0.8 \times 1.29$$

$$\text{Risk Premium associated with long term interest rates } (\beta_1) = 12.34\%.$$

b. $R_{p1} = 0.125 \times 9.6 + 0.25 \times 16.03 + 0.125 \times 14 + 0.5 \times 13.35 = 13.6325\%$

$$R_{p2} = 0.5 \times 9.6 + 0.25 \times 16.03 + 0.125 \times 14 + 0.125 \times 13.35 = 12.263\%$$

Portfolio 1 is better as it provides a higher return.

c. **Portfolio 1:**

$$\text{Sensitivity to long term interest rate: } 0.125 \times 0.2 + 0.25 \times 0.7 + 0.125 \times 0 + 0.5 \times 0.6 = 0.50$$

$$\text{Sensitivity to exchange rates: } 0.125 \times 0.8 + 0.25 \times 0.6 + 0.125 \times 0.7 + 0.5 \times 0.7 = 0.6875$$

Portfolio 2:

$$\text{Sensitivity to long term interest rate: } 0.5 \times 0.2 + 0.25 \times 0.7 + 0.125 \times 0 + 0.125 \times 0.6 = 0.35$$

$$\text{Sensitivity to exchange rates: } 0.5 \times 0.8 + 0.25 \times 0.6 + 0.125 \times 0.7 + 0.125 \times 0.7 = 0.725.$$

2. i. **Duration of liability**

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Year	Cash outflow	P.V. of C.F. (12%)	(P.V. of C.F. x year)
1	50	44.6429	44.6429
2	60	47.8316	95.6632
3	72	51.2482	153.7446
4	86.40	54.9088	219.6352
5	103.68	58.8308	294.154
Total		257.4623	807.8399

$$\text{Duration} = \frac{807.8399}{257.4623} = 3.1377 \text{ years}$$

- ii. **Duration of bond:**

Zero coupon Bond

In Zero coupon bond duration will be equal to maturity. Therefore duration will be equal to 3 years.

Floating Rate Bond

	Coupon Income		
1 st year	11.00 + 0.50	=	11.50%
2 nd year	11.25 + 0.50	=	11.75%
3 rd year	11.50 + 0.50	=	12.00%
4 th year	11.35 + 0.50	=	11.85%
5 th year	11.20 + 0.50	=	11.70%

If YTM of the bond = K.

$$97.50 =$$

$$\text{At } k = 13\%,$$

$$\text{R.H.S.} = 95.59$$

$$\text{At } k = 12\%$$

$$R.H.S = 99.09$$

$$K =$$

$$= 12.45\%$$

Duration of the floating rate bond

Year	Cash inflow	P.V. of Cash flow at (12.45%)	P.V. of Cash flow $\times$ year
1	11.5	10.23	10.23
2	11.75	9.29	18.58
3	12	8.44	25.32
4	11.85	7.41	29.64
5	11.7	6.51	32.55
5	100	55.62	278.1
Total		97.50	394.42

$$\text{Duration} = 4.05 \text{ years}$$

If proportion of fund to be invested in Zero coupon Bond is w and in Floating Rate Bond is $(1 - w)$.

$$w \times 3 + (1 - w) 4.05 = 3.1377$$

$$3w + 4.05 - 4.05w = 3.1377$$

$$0.9123 = 1.05w$$

$$w = 86.89\%$$

Investment in Floating Rate Bond

$$= 1 - 0.8689 = 0.1311 = 13.11\%$$

Proportion of fund =

Zero coupon Bond = 86.89%

Floating Rate Bond = 13.11%.

3. a. Total value added by portfolio manager John = Portfolio return – Benchmark return

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$$\text{Portfolio return} = 5 \times 0.70 + 7.0 \times 0.20 + 4 \times 0.10 = 5.3\%$$

$$\text{Benchmark return} = 7 \times 0.60 + 10 \times 0.30 + 7.5 \times 0.10$$

$$= 7.95\%$$

$$\text{Value added} = 5.3 - 7.95$$

$$= -2.65\%$$

Total value added by portfolio manager Max = Portfolio return – Benchmark return

$$\text{Portfolio return} = 6 \times 0.50 + 6.0 \times 0.30 + 3 \times 0.20 = 5.4\%$$

$$\text{Value added} = 5.4 - 7.95$$

$$= -2.55\%$$

- b. **Allocation Effect:**

Allocation Effect				
Manager	Deviation in Allocation (weight in the portfolio – weight in the benchmark) (1)	Deviation in Returns (Return of asset of the Benchmark – Return of the Benchmark) (2)	i^{th} Allocation Effect (1) $\times$ (2)	Total
John	0.10	$7 - 7.95 = -0.95$	-0.095	-0.30
	-0.10	$10 - 7.95 = 2.05$	-0.205	
Max	0.00	$7.5 - 7.95 = -0.45$	0.00	0.05
	-0.10	$7 - 7.95 = -0.95$	0.095	
	0.00	$10 - 7.95 = 2.05$	0.00	
	0.10	$7.5 - 7.95 = -0.45$	-0.045	

Selection Effect:

Selection Effect				
Manager	Actual Weights (1)	Deviation in Returns (%) (Return of the asset of the portfolio – Return of the asset of the Benchmark) (2)	i^{th} Selection Effect (1) $\times$ (2)	Total (%)
John	0.70	$5 - 7 = -2$	-1.40	-2.35
	0.20	$7 - 10 = -3$	-0.60	
	0.10	$4 - 7.5 = -3.5$	-0.35	
Max	0.50	$6 - 7 = -1$	-0.50	-2.60
	0.30	$6 - 10 = -4$	-1.20	

	0.20	$3 - 7.5 = -4.5$	-0.90	
--	------	------------------	-------	--

For John

Excess Returns = Allocation Effect + Selection effect = $-0.30 - 2.35 = -2.65\%$

This implies that John has under performed the benchmark by 2.65%.

For Max

Excess Returns = Allocation Effect + Total selection effect = $0.05 - 2.60 = -2.55\%$

Max has under performed the benchmark by 2.55%

Thus, out of the two, performance of Max has been better.

4. The return on the market = $7.5 + 7 = 14.5\%$.

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The market variance = $25 (\%)^2$

Stock	a_i	b_i	$R_i = a_i + R_f + b_i (R_m - R_f)$	$R_i - R_f$	$(R_i - R_f) / b_i$	Rank
Bajaj Hindustan	-0.45	1.28	16.01	9.35	6.648	5
Ballarpur Ind.	1.14	1.23	17.25	5.92	7.927	1
Pantaloon Retail	0.02	0.82	13.26	9.79	7.024	4
Jindal steel	0.23	1.50	18.23	5.36	7.153	3
Idea cellular	0.45	0.77	13.34	4.52	7.584	2

Rank	Stock	s^2_{ei}	b_i	$R_i - R_f$	$(R_i - R_f) \cdot b_i$	$(R_i - R_f) b_i / s^2_{ei}$
1.	Ballarpur Ind.	5.92	1.23	9.75	11.99	2.03
2	Idea cellular	4.52	0.77	5.84	4.50	1.00
3	Jindal steel	5.36	1.50	10.73	16.10	3.00
4	Pantaloon Retail	9.79	0.82	5.76	4.72	0.48
5	Bajaj Hindustan	9.35	1.28	8.51	10.89	1.16

Stock		S	S	
Ballarpur Ind.	2.03	0.256	2.03	0.256
Idea cellular	1.00	0.131	3.03	0.387
Jindal steel	3.00	0.420	6.03	0.807
Pantaloon Retail	0.48	0.069	6.51	0.876
Bajaj Hindustan	1.16	0.175	7.67	1.051

$$C^* = 7.1192$$

$$Z_i =$$

$$Z_{\text{Ballarpur}} = 0.1678$$

$$Z_{\text{Idea}} = 0.0792$$

$$Z_{\text{Jindal}} = 0.0095$$

$$Z_i = 0.1678 + 0.0792 + 0.0095 = 0.2565$$

$$\%_{\text{Ballarpur}} = 0.6542 \text{ i.e. } 65.42\%$$

$$\%_{\text{Idea}} = 0.3088 \text{ i.e., } 30.88\%$$

$$\%_{\text{Jindal}} = 0.0370 \text{ i.e. } 3.70\%.$$

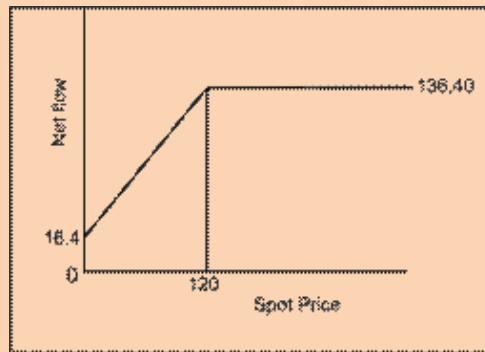
5. **Strategy 1**

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Sell call option contract expiring on 24.12.08.

Expiration day price	Inflow on selling each underlying stock (Rs.) (1)	Gain/loss due to one call option (Rs.) (2)	Premium inflow (Rs.) (3)	Per share cash flow (Rs.) (1+2+3) = (4)	Net cash flow (Rs.) [4X1000]
90	90	-	16.40	106.40	1,06,400
100	100	-	16.40	116.40	1,16,400
110	110	-	16.40	126.40	1,26,400
120	120	-	16.40	136.40	1,36,400
130	130	-10	16.40	136.40	1,36,400
140	140	-20	16.40	136.40	1,36,400
150	150	-30	16.40	136.40	1,36,400
160	160	-40	16.40	136.40	1,36,400
170	170	-50	16.40	136.40	1,36,400

When share price is Rs.120 or more, cash flow is limited to Rs.1,36,400, whereas downside risk is unlimited.

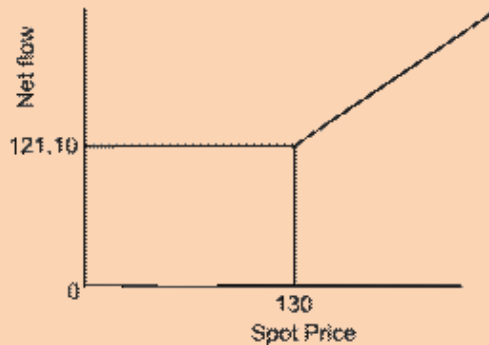


Strategy 2

Buy put option contract expiring on 24.12.08.

Expiration day price	Inflow on selling each underlying stock (Rs.) (1)	Gain/loss due to one put option (Rs.) (2)	Premium outflow (Rs.) (3)	Per share cash flow (Rs.) (1+2+3) = (4)	Net cash flow (Rs.) [4X1000]
90	90	+40	-9.90	120.10	1,20,100
100	100	+30	-9.90	120.10	1,20,100
110	110	+20	-9.90	120.10	1,20,100
120	120	+10	-9.90	120.10	1,20,100
130	130	-	-9.90	120.10	1,20,100
140	140	-	-9.90	130.10	1,30,100
150	150	-	-9.90	140.10	1,40,100
160	160	-	-9.90	150.10	1,50,100
170	170	-	-9.90	160.10	1,60,100

Downside cash flow is limited to Rs.1,20,100, whereas upside potential is unlimited when share prices is more than Rs.130.

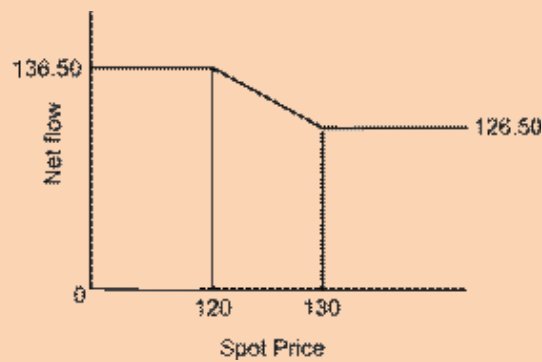


Strategy 3

Sell one-call option contract and buy a put option contract

Expiration day price	Inflow on selling each underlying stock (Rs.) (1)	Gain/loss due to one call option (Rs.) (2)	Gain/loss due to one put option (Rs.) (3)	Net premium flow (Rs.) (4)	Per share cash flow (Rs.) (1+2+3+4) = (5)	Net cash flow (Rs.) [5X1000]
90	90	-	+40	6.50	136.50	1,36,500
100	100	-	+30	6.50	136.50	1,36,500
110	110	-	+20	6.50	136.50	1,36,500
120	120	-	+10	6.50	136.50	1,36,500
130	130	-10	-	6.50	126.50	1,26,500
140	140	-20	-	6.50	126.50	1,26,500
150	150	-30	-	6.50	126.50	1,26,500
160	160	-40	-	6.50	126.50	1,26,500
170	170	-50	-	6.50	126.50	1,26,500

Upside cash flow is limited to Rs.1,36,500 and downside cash flow is limited to Rs.1,26,500.



The best option for Mr. Pandey is strategy 3, as the cash flows varies between Rs.1,36,500 and Rs.1,26,500. In other words, there is relative stability in cash flows.

Section C: Applied Theory

6. CHANGE IN WEALTH

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According to the utility theory, the risk taking ability of the investor increases with increase in wealth. It says that people can afford to take more risk as they grow rich and benefit from its rewards. But, in practice, while they can afford, they may not be willing. As people get rich, they become more concerned about losing the newly acquired riches than getting richer. So, they may become conservative and more risk-averse. The fund manager should observe the changes in the attitude of *the investor* towards risk and try to understand them in a proper perspective. If the investor turns to be conservative after making huge gains, the *portfolio* manager should modify the portfolio accordingly.

CHANGE IN THE TIME HORIZON

As time passes, some events may take place that may have an impact on the time horizon of the investor. Births, deaths, marriages and divorces - all have their own impact on the investment horizon. There are, of course, many other important events in a person's life that may force a change in the investment horizon. The happening or non happening of the events will naturally have its effect. For example, a person may have planned for an early retirement, considering his delicate health. But, after turning 55 years of age, if his health improves, he may not take retirement. He may extend the investment horizon, as he does not need annuities until he retires.

CHANGES IN LIQUIDITY NEEDS

Investors very often ask the portfolio manager to keep enough scope in the portfolio to get some cash as and when they want. This forces the portfolio manager to increase the weight of liquid investments in the asset mix. Due to this, the amount available for investment in fixed income and/or growth securities that actually help in achieving the goal of the investor, gets reduced. That is, the money taken out today from the portfolio means that the amount and the return that would have been earned on it are no longer available to achieve the investor's goal.

CHANGES IN TAXES

It is said that there are only two things certain in this world - death and taxes. The only uncertainties regarding them relate to the date, time, place and mode. With taxes you have the additional aspect of the amount or rate. So, portfolio managers have to constantly look out for changes in the tax structure and make suitable changes in the portfolio composition. The rate of tax under long-term capital gains is usually lower than the rate applicable to income. If there is a change in the minimum holding period for long-term capital gains, it may lead to revision. The specifics of tax planning depend on the nature of income of the investor, and the nature of other investments.

BULL AND THE BEAR MARKETS

The fluctuations in the stock markets often provide opportunities for the investors in both positive as well as negative aspects. Say, when everything is going well, the markets also perform well, but during downtrends in the economies, the stock prices fall. Let us consider the period one where stock return is more than bond in contrast to the period two where the bond has better return than the stock. This provides the opportunity to buy stock at period one and sell the stock in period two to shift to the bond market. The above facts also apply to individual securities. It remains at the hands of the investors to protect themselves against discomforts that arise in the markets. This is possible only when the investors have proper knowledge and discipline in the investment process. The disciplined investment decisions provide value by providing the objective basis to confidently pursue uncomfortable investments.

THE CENTRAL BANK POLICY

It is to be always kept in mind that the central bank and the other banks enjoy a greater power in influencing liquidity in the capital markets. The stock market's demand for funds arises basically out of the money supply' growth and the underlying policy that determines it. The monetary and liquidity constraints finally influence a toll on the stock markets. Further, the monetary policy 'also has an immediate effect on the money markets, though it has less effect on long-term bond yields.

INFLATION RATE CHANGES

Inflation has its unique way of affecting the stock markets. As per the studies of Fama, unexpected changes in the rate of inflation may have its effect on pricing of stocks in either direction. When the inflation rate increases beyond expectations, the bond investors face a reduced real yield on the bonds. The nominal yield then rises so as to counteract the loss, and the bond prices fall. The unexpected changes in the inflation rate are also significant to the stock market returns. It is to be noted here, that the simple measures of inflation, such as Consumer Price Index (CPI), are not that reliable predictors of future returns on stocks and bonds. Alternatively the rates of changes in producer prices, which actually result in CPI inflation provides a better measure, and signals for future returns.

CHANGING RETURN PROSPECTS

It is assumed that other things being equal, the changes in prices accompany changes in the return prospects. With each negative fluctuation in the bond's price, its yield rises but its total return falls. For the equities, as price changes take place regularly, so do the return prospects. These changes eventually lead to the adjustments in the investor's portfolio. Bonds are both the most quantifiable as well as the least quantifiable of asset classes, for bonds which are downgraded by raters provide a better return prospect. A simple measure such as the slope of the bond market yield curve serves as an indicator of bond performance relative to cash equivalents.

THE TRANSACTION COST BARRIER

For all good reasons, transaction costs provide a jolt to the portfolio managers. These costs can never be recovered and their cumulative erosion value can at times be harmful. The very task of portfolio revision does not come free. Apart from the negative effect from the fees earned by brokers, the traders themselves can influence the security prices. The portfolio manager is expected to understand the trading costs and then to control or avoid them. It is to be mentioned here that transaction costs consist of more than just commissions. Market changes are observed, before and after the trade and even during the day. This may be another inadequate measure. The actual cost of transacting is the difference between the realized price and the price that must have existed in the absence of the order. Added to these, there can be trades that one seeks to carry-out, but fails to execute, which provides another tariff, an opportunity cost.

Several research studies have tried to find the true transaction cost. But they could not realize their goals, because traders possess many skills and devising ways to win whatever game the portfolio managers try to impose on them. Trading costs are of the nature of an iceberg. The commissions rise above the surface, visible to the man. The part below the water reflects market impact of trades and those costs of the traders that were never incurred.

TRANSACTION MANAGEMENT

The modern portfolio theory aided with affordable computing power and new investment vehicles provides encouraging facts on trading costs. It tries to argue with the fact that trading costs are difficult to overcome. These innovations in finance made the program trade a credible alternative to traditional trade executions. If anyone trades without any basis, with the broker initiating a transaction without having seen the actual list of securities being traded, then the broker's bid may be overstating the actual value of the trade cost. Thus, a broker would be able to make some profits also.

TRADING'S POSITIVE SIDE

It is worthwhile to mention here that the traders provide liquidity to the markets, which is one of the prominent features of capital markets. Further, the commissions indirectly help in funding investment research, which adds to the efficiency that makes investment management a rewarding occupation. Added to this, rebalancing is a necessary aspect of portfolio management, so it should be done on a cost effective basis.

7. The following are popular approaches of asset allocations:

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Popular Approach

In the words of a layman, asset allocation can be looked at as a decision on how to divide the income between current spending and investment, and how to distribute the investment among the various possible avenues to attain the targeted goals. The methods in this approach generally try to capture a part of the wisdom that professionals get through years of study and practice into some rules of thumb.

100 Minus Your Age Method

According to this method, the percentage of your total investment that can be invested in equities depends on your age and is based on the premise that you will live to be 100 years old. The method suggests that the proportion of investment to be placed in equities is 100 minus your age. The rest may be placed in bonds and other safe investments.

Your Age	100 Minus Your Age	% Investment in Equities	% Investment in Bonds
30	70	70	30
40	60	60	40
50	50	50	50
60	40	40	60

Though life expectancy is increasing, the probability of a person living beyond 100 is still low. As the age increase, the ability to take risk normally declines. This method essentially addresses this issue.

The person who uses this method reduces his allocation to equities as he/she grows old. This method, while based on the general perceptions about the desirable exposure to equities over the life of a person, suffers from some obvious defects. It does not take into account the life expectancy of a person, the factor of inflation, the wealth to be accumulated or the current financial needs. Over the years, this method results in increase in the current income and decrease in growth, which can be harmful for the financial condition of the person considering inflation and increasingly long life expectancies.

Financial Objectives Method

This method is based more on common sense than anything else. It simply says, plan your financial needs in future and invest enough money so that you will be able to realize them. It does not talk anything about how and where and when to invest. If your goals are short-term, invest in short-term liquid investments and if they are long term go for long-term investments. All that you have to know is what you want to achieve and how much you can save today for that.

Cash Flow Needs Method

This Method, as the name suggests, involves projecting the cash flows of the future and estimating the deficit if any. Investments will then be aimed at filling the deficit. The sources of income that a person may have, for example, may be wages and salary,

pension payments, interest and dividend income on investments already made, rental income from properties, sale proceeds of properties, inheritance of property, sale of used vehicle, etc. The outflows expected in future should then be reduced from the inflows. If there is a surplus, then you may go for conservative or safe investments. In case there is a deficit, investments will have to be made aggressive and the degree of aggressiveness depends on the amount of deficit and the amount now available for investment.

Risk Tolerance Method

This method ignores the financials and focuses on the psychology of the individual. According to this method, a risk-averse person should invest all or most of the money available in low risk investments and a risk-lover may invest in high risk instruments.

100% Common Stocks for Long Run

This strategy involves placing all the long-term investments entirely in equity stocks. This method generally gets into popularity when stock markets are on a high and falls in popularity along with the markets. There is no other basis, scientific or otherwise, for it.

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