J.K. SHAH CLASSES

CAFC → INTER CA → FINAL CA

FINAL CA
MAY '19
REVISION NOTES

Strategic Financial Management

Portfolio Management

PORTFOLIO MANAGEMENT

Q.1. X Co., Ltd., invested on 1.4.2005 in certain equity shares as below :

Name of Co.	No. of shares	Cost (₹)
M Ltd.	1,000 (₹ 100 each)	2,00,000
N Ltd.	500 (₹ 10 each)	1,50,000

In September, 2005, 10% dividend was paid out by M Ltd. and in October, 2005, 30% dividend paid out by N Ltd. On 31.3.2006 market quotations showed a value of ₹ 220 and ₹ 290 per share of M Ltd. and N Ltd. respectively.

On 1.4.2006, investment advisors indicate (a) that the dividends from M Ltd. and N Ltd. for the year ending 31.3.2007 are likely to be 20% and 35%, respectively and (b) that the probabilities of market quotations on 31.3.2007 are as below :

Probability factor	Price / Share of M Ltd.	Price / Share of N Ltd.
0.2	220	290
0.5	250	310
0.3	280	330

You are required to :
(i) Calculate the average return from the portfolio for the year ended 31.3.2006 ;
(ii) Calculate the expected average return from the portfolio for the year 2006-07 ; and
(iii) Advise X Co. Ltd., of the comparative risk in the two investments by calculating the standard deviation in each cases.

Q.2. Suppose Mr. X in a world there are only two assets, gold and stocks. He is interested in investing his money in one, the other or both assets. Consequently he collects the following data on the returns on the two assets over the last six years.

	Gold	Stock Market
Average return	8%	20%
Standard deviation	25%	22%
Correlation	----	-0.4

(a) Mr. X is constrained to pick just one, which one he would choose?
(b) Mr. Y, a friend of Mr. X argues that this is wrong. He says that Mr. X is ignoring the big payoffs that he can get on gold. How would Mr. X go about alleviating his concern?
(c) How would a portfolio composed to equal proportions in gold and stocks do in terms of mean and variance?
(d) Mr. X came to know that GPEC (a cartel of gold - producing countries) is going to vary the amount of gold it produces with stock prices in the country. (GPEC will produce less gold when stock markets are up and more when it is down). What effect will this have on his portfolios? Explain.

Q.3. P Ltd. and Q Ltd. have low positive correlation coefficient of + 0.5. Their respective risk and return profile is as under :

RP   =   10%
RQ   =   15%
sP   =   20%
sQ   =   25%

Compute the portfolio of P & Q to minimise risk.

Q.4. Two particular securities P and Q lie on the Security Market Line. P has a Beta of 0.5, carries a risk premium of 4%. Q has an expected return of 20% along with the Beta of 1.75. In the light of this information, determine whether the securities given hereunder are overpriced or under - priced.

Security	Expected Return	Beta
1	20	2.00
2	14	0.75
3	15	1.25
4	5	- 0.25
5	31	3.25

Q.5. The following data relate to two securities, A and B.

	A	B
Expected Return	22%	17%
Beta Factor (b)	1.5	0.7

Assume : IRF = 10% and RM = 18%.

Find out whether the securities, A and B are correctly priced ? Also show the graphic presentation of the above situation.

Q.6. The following details are given for X and Y companies' stocks and the Bombay Sensex for a period of one year. Calculate the systematic and unsystematic risk for the companies' stocks. If equal amount of money is allocated for the stocks what would be the portfolio risk?

	X Stock	Y Stock	Sensex
Average return	0.15	0.25	0.06
Variance of return	6.30	5.86	2.25
β	0.71	0.27	
Correlation Co-efficient	0.424		
Co-efficient of determination (r2)	0.18		

Q.7. You are presented with the following information concerning the returns on the shares of C Ltd. and on the market portfolio, according to the various conditions of the economy.

Condition of economy	Probability of condition occurring	Return on C Ltd.	Return on the market
1	0.2	15%	10%
2	0.4	14%	16%
3	0.4	26%	24%

The current risk - free interest rate is 9 per cent.

Required :

(a) Calculate the coefficient of correlation between the returns on C Ltd. and the market portfolio.

(b) Calculate the total risk (i.e., standard deviation) of C Ltd. and discuss why this is not the most appropriate measure of risk to be used in making investment decisions.

(c) Calculate the beta factor for C Ltd. and briefly discuss its significance. Is C Ltd. efficiently priced according to the CAPM and the information given above?

Q.8. Mr. X owns a portfolio with the following characteristics :

PARTICULARS	SECURITY A	SECURITY B	SECURITY C
Factor 1 sensitivity	0.80	1.50	0
Factor 2 sensitivity	0.60	1.20	0
Expected return	15%	20%	10%

It is assumed that security returns are generated by a two factor model.

(i) If Mr. X has ₹ 1,00,000 to invest and sells short ₹ 50,000 of security B and purchases ₹ 1,50,000 of security A what is the sensitivity of Mr. X's portfolio to the two factors?

(ii) If Mr. X borrows ₹ 1,00,000 at the risk free rate and invests the amount he borrows along with the original amount of ₹ 1,00,000 in security A and B in the same proportion as described in part (i), what is the sensitivity of the portfolio to the two factors?

(iii) What is the expected return premium of factor 2?

Q.9. ABC Ltd. has a b of 1.20, IRF = 8% & Rm = 15%. What is the required rate on shares of ABC? If the actual returns for 4 observations are as follows, what is the alpha value of shares of ABC?

Year	Actual Returns
1	20.43
2	18.80
3	16.40
4	13.95

Q.10. With a risk - free rate of 10%, and with the market portfolio having an expected return of 20% with a standard deviation of 8%, what is the Sharpe Index for portfolio X, with a mean of 14% and a standard deviation of 18%? For portfolio y, having a return of 20% and a standard deviation of 16%? Would you rather be in the market portfolio or one of the other two portfolios?

Q.11. The returns on stock A and market portfolio for a period of 6 years are as follows :

Year	Return on A (%)	Return on market portfolio (%)
1	12	8
2	15	12
3	11	11
4	2	- 4
5	10	9.5
6	- 12	-2

You are required to determine :
(i) Characteristic line for stock A.
(ii) The systematic and unsystematic risk of stock A.

Q.12. Ramesh wants to invest in stock market. He has got the following information about individual securities:

SECURITY	EXPECTED RETURN BETA		
A	15	1.5	40
B	12	2	20
C	10	2.5	30
D	9	1	10
E	8	1.2	20
F	14	1.5	30

Market Variance is 10% % , Risk Free Rate is 7 %. What should be the optimum portfolio assuming no short sales?