

Question 1:

Rosario, Cho and Lang is having you working in the different divisions of the Firm. You were assigned the Research Division. In this division, analysts study and predict the behavior of different risky assets. The final objective is to provide their clients with investment opportunities that beat the competing firms' offers.

Your first assignment was to compute statistics about the behavior of the Stock Market in the last years. You were given this table

Year	Stock Market Return	T-Bill Return
1999	23.6%	4.7%
2000	-10.9%	5.9%
2001	-11.0%	3.8%
2002	-20.9%	1.7%
2003	31.6%	1.0%

- a) What was the Risk Premium each year?
- b) What was the Average Risk Premium in the period considered?
- c) What was the Standard Deviation of the Risk Premium in the period considered?

Question 2:

Your next meeting was with Mr. Edward Edwards. Mr. Edwards is a longtime client of Rosario, Cho and Lang. The Senior Advisor that preceded you built Mr. Edwards the following Portfolio

Type of Asset	\$ Value	% of Total	Expected Return	Standard Deviation
Short Term Bonds	200,000	10%	4.6%	1.6%
Domestic Large-Cap Equities	600,000	30%	12.4%	19.5%
Domestic Small-Cap Equities	1,200,000	60%	16.0%	29.9%
Total Portfolio	2,000,000	100%	13.8%	23.1%

Mr. Edwards came to you with an additional \$2,000,000 ready to be invested. We would like you to invest that amount in an Index Fund that complements his current portfolio the best. He also requested the following results:

- The overall expected return to be maintained or enhanced
- The overall volatility to be maintained or reduced

You immediately went to work and two weeks later you narrowed down your options to four Index Funds

Index Fund	Expected Return	Standard Deviation	Correlation with Edwards Portfolio
A	15%	25%	+0.55
B	11%	22%	+0.60
C	16%	25%	+0.90
D	14%	22%	+0.80

- a) Which Index or Indexes you think would meet Mr. Edwards's specifications?
- b) Which one would you choose for Mr. Edwards to add to his portfolio?

Question 3:

Rosario, Cho and Lang publish a monthly newsletter in which they give Investment advice to their clients. The advice is either a “Buy” or a “Sell” tag on a specific Stock.

You were asked to give the advice on two stocks to appear in the next newsletter. The information you have on them is the following:

The managers of Rosario, Cho and Lang did not tell you the names of the companies you are analyzing. So, we will call them “Stock A” and “Stock B”. Based on current dividend yields and expected growth rates, the stocks are currently providing a return of 11% and 14% respectively. Also, the standard deviation on the returns of the two stocks is 10% and 11%.

Your statistical analysis of both stocks revealed the betas to be 0.8 and 1.5 respectively. In addition to this information, you know that the return on the T-bill is currently 6% and the expected return of the S&P 500 Index is 12%.

- a) You expect your readers to be rational investors and to hold an Index Portfolio. With this in mind, what is the advice you would give for each of the Stocks?

- b) Stock A is currently selling at \$75 and Stock B is selling at \$60. Given that, at the current price, the dividend yield for both stocks is 5%, what would expect the price of these stocks to be, one year from now, if the expected growth rate of dividends does not change?

Question 4:

Your next assignment was to analyze two stocks a client of Rosario, Cho and Lang is contemplating investing in. The upper management of the Firm tried to persuade him to invest in a diversified portfolio, but he is determined only to invest in these two stocks. He mentioned his personal guru told him those were the stocks to have (later on, you discovered the guru owns the two companies your client mentioned). He is, however, unsure on the proportion between the two stocks his investment should be.

In doing your research for this client, you collected some historical data

Year	Realized Returns	
	Firm A	Firm B
2007	12%	18%
2006	4%	-1%
2005	-9%	-10%
2004	8%	15%
2003	7%	5%

- a) What is the correlation between the two stocks?
- b) Which range of acceptable combinations of A and B would you advise your client to make?
- c) Would you advise him only to hold stock A? And what about stock B? Can you find a specific combination between Stocks A and B that is superior to any other?

Question 5:

In your desk at Rosario, Cho and Lang you received a message from your Bloomberg friend that tells you one of the companies you do research on was just found guilty in the anti-trust case it was being tried for. The Justice Department's verdict was to punish the company in \$10,000,000 a year for the next 10 year.

You went to your computer and looked at the evolution of the price of the company and noticed that, at the time the verdict was announced, the price of the stock did not move.

- a) Is this fact an indication that the Market is not Semi-Strong Efficient? What is happening here?

- b) Is this verdict likely to affect the future rates of return of the holders of the stock in the next 10 years?