Université catholique de Louvain
Finance - LECGE1332

TP 5: Risk and Return Analysis

Exercise 1:
Consider a firm A where the Equity is represented by 800,000 ordinary Shares that are exchangeable on the market at 30 euros each. The Debt, having nominal value 36,000,000 euros, is represented by 20-years Corporate Bonds that will be paid back at the 100% of their face value and that give the right to receive 8% yearly coupon. The price on the market of this bonds is 100. The firm adopt a constant policy of dividends and this year it granted a dividend of 2.79 euros per share. On the last 10 years, the dividend has showed a constant growth of 7.5%.
If the corporate tax is at 30%, what is the WACC (Weighted Average Cost of Capital) of firm A?

Exercise 2:
The correlation coefficient between the rate of return of a stock B and the rate of return of the market portfolio is 0.6. The standard deviations of the returns are respectively 0.50 for stock B and 0.40 for the market portfolio.

1) If one expects that the expected rate of return on the market portfolio is 12% and given that the rate of return on AAA-Government bonds is 4%, compute the expected return of the stock B.
2) What is the beta coefficient of a portfolio composed by 80% by the market portfolio and 20% by the risk-free asset?

Exercise 3:
You are considering how to invest part of your retirement savings. You have decided to put $ 300,000 into three stocks:
60 % of the money in Goldfinger (currently $ 29/share), 25 % of the money in Moosehead (currently $ 82/share), and the remainder in Venture Associates (currently $ 6/share). If Goldfinger stock goes up to $ 45/share, Moosehead stock drops to $ 58/share, and Venture Associates stock rises to $ 12 per share.

1) What is the new value of the portfolio?
2) What return did the portfolio earn?
3) If you don't buy or sell any shares after the price change, what are your new portfolio weights?

Exercise 4:

The analysts estimate the return of the market portfolio to be 12.5%. The risk free rate is 4%. Consider two firms (A and B) that are in the same business sector.

They adopt a constant policy of dividends with a retention rate of 40%. In this particular sector, the usual Return on Equity (ROE) is 12%. Financial analysts forecast, for the following year, the following Earnings Per Share (EPS) for the shares A and B:

Asset	EPS	Beta
A	6	1.2
B	4	0.8

Now, on the financial markets, the price of stock A is at 30 euros and that of stock B is at 60 euros. On the basis of the estimates of the analysts and on the base of beta coefficients, determine if these instruments are under- or over-valued (using the Security Market Line).

Hint: use the CAPM to compute the theoretical price.

Exercise 5:

On the market there are two stocks, A and B. The expected returns are 8% for stock A and 2% for stock B, their correlation is -1. The standard deviation is 8% for A and 12% for B. The risk-free rate is 2%.

1) Is it possible to create a portfolio including only asset A and B that has no risk? If yes, what are the weights to use?
2) What is the return of the portfolio?

Exercise 6:

You are considering three possible investments: a stock with an expected return of 10% and a standard deviation of 15%; an ETF with an expected return of 12% and a standard deviation of 10%; or a combination of them, half of your budget in the stock and the other half in the ETF, their estimated correlation is -0.6.

1) To have a better overview of your three possibilities, position them on the risk/return space (the y axis corresponds to the return and the x axis to the standard deviation).
2) Based on your graph, which investment will you choose? Why?