

Financial Markets Sample Question (first part) - A Possible Answer

As the revenues of companies in air cargo business are highly volatile, any change in external conditions would cause a decline in our company's revenues that is about 3 times larger than the industry. I am concerned about any unfavourable changes in the environment that would have an adverse effect on our revenues.

If we bought a cargo plane now, and then the economic conditions were unfavourable then we would experience losses sharper than the other companies in the market.

(1mark) The option to buy a cargo plane rather than buying the plane itself gives us flexibility. *(1mark)* We can wait and see, if the economic conditions are favourable or unfavourable. If they are unfavourable, then we are not obliged to buy the plane so we just do not buy it. *(1mark)* That will save us a lot of money if revenues have dropped already and we really do not need the plane. If the conditions were favourable, and we could foresee that our revenues will increase and we would generate enough business, then we could exercise the option and buy the plane at that point in time. *(1mark)* I think the option to buy the option rather than buying the plane straight ahead is better for the company. That way we can protect ourselves against downside risk. *(1mark)*

The option to buy the plane is similar to a call option. In option valuation, I know that the higher the volatility, the higher the value of the option, all other things being equal. *(1mark)* Of course, a lot of things will influence the decision including the value of the option; i.e. the amount of money that we will be paying to buy the option, the time to maturity etc. *(1mark each)*

In giving you this answer, I am assuming that everything else is constant, and knowing that our company faces very volatile revenues, I would prefer to buy the option. *(1mark)*

Suggested solution for 40-mark question: Chapters 12 & 13 of the BPP workbook

1. The student is expected to respond by discussing the effect of volatility on option values. The higher the volatility, the higher the value of the option. This is everything else being kept constant. Once this argument is given the student can discuss any other assumptions that can be made and their effects on option values. Whether these have an effect in the same direction or not should then be given explicitly. When marking the question 5 points must be given to observing that the high volatility would make the option more valuable. The remaining 5 points should be given to the rigour of the argument.
2. The student is expected to respond by discussing the effect of time to maturity on option values. The longer the time to maturity, the higher the value of the option. This assumes everything else being kept constant. Once this argument is given the student can discuss any other assumptions that can be made and their effects on option values. Whether these have an effect in the same direction or not should then be given explicitly. When marking the question 5 points must be given to observing that the longer time to maturity would make the option more valuable. The remaining 5 points should be given to the rigour of the argument.
3. The student is expected to respond by discussing the effect of increases in the interest rates on option values. Higher the interest rates higher the value of the option. Increased interest rates reduce the present value of the exercise price. This is everything else being kept constant. Once this argument is given the student can discuss any other assumptions that can be made and their effects on option values. Whether these have an effect in the same direction or not should then be given explicitly. When marking the question 5 points must be given to observing that the higher interest rates would make the option more valuable. The remaining 5 points should be given to the rigour of the argument.
4. Do not mark the decision itself, i.e. buy/not buy option. Whatever the decision is only mark how the student arrived at that decision. Two marks each the effect of volatility, time to maturity and interest rates on option values. 4 marks to how the student combines those three to his decision. Give full 4 marks if a decision is made other-wise do not give any marks for decision being made.

20 mark question - Chapters 5, 6, 11 of the BPP workbook

Suggested Solution:

a. $k = 4.5\% + 1.15(14.5\% - 4.5\%) = 16\%$

b.

| <u>Year</u> | <u>Dividends</u> | |
|-------------|----------------------------------|---------|
| 2007 | £1.72 | |
| 2008 | £1.72 × 1.12 | = £1.93 |
| 2009 | £1.72 × 1.12 ² | = £2.16 |
| 2010 | £1.72 × 1.12 ³ | = £2.42 |
| 2011 | £1.72 × 1.12 ³ × 1.09 | = £2.64 |

Present value of dividends paid in years 2008 to 2010:

| <u>Year</u> | <u>PV of Dividends</u> |
|-------------|--|
| 2008 | £1.93/1.16 ¹ = £1.66 |
| 2009 | £2.16/1.16 ² = £1.61 |
| 2010 | £2.42/1.16 ³ = <u>£1.55</u> |
| | Total: £4.82 |

Price at year-end 2010 = £2.64/(0.16-0.09) = £37.71

PV (in 2007) of P₂₀₁₀ = £37.71/(1.16³) = £24.16

Intrinsic value of stock = £4.82 + £24.16 = £28.98

The problem indicates that YUKA PLC is selling below intrinsic value, while we have just shown that MAL PLC is selling somewhat above the estimated intrinsic value. Based on this analysis, YUKA PLC offers the potential for considerable abnormal returns, while MAL PLC offers below-market risk-adjusted returns. So, recommend YUKA PLC for purchase

c. below-market risk-adjusted returns. So, recommend YUKA PLC for purchase

5 mark questions - Chapters 1,2, 9,10, 13,14,15 of the BPP workbook

1 Suggested solution:

Monetary policy refers to the way the government controls monetary stability through monetary aggregates (e.g. discount rates & reserve requirements). Fiscal policy refers to the government's decisions about the balance of spending taxes through the budget to control unemployment (e.g. taxation & government expenditure).

2 Suggested Solution:

A zero coupon bond is one that carries no coupon and redeems at face value at maturity. Index-linked bonds are bonds whose coupon and final redemption payments are linked to the rate of inflation

3 Suggested Solution:

Redeemable preference shares are repayable at a pre-determined price which is normally above the nominal value and at a pre-determined date(s). Cumulative (dividends accumulate i.e. are carried forward, if company is unable to pay in any one year; Convertible (Can be exchanged for ordinary shares at a pre-agreed price, ratio and time)

4 Suggested Solution:

Solution will include differences in cash flows, structure and uses of the instruments. An interest rate swap has exchange rate interest rate cash flow for the term of the swap. A long term currency swap has the following cash flows: An exchange of principal sums in the two currencies at the start, an exchange of interest flows in the two currencies for the term of the swap, an exchange of back of principal amounts in the two currencies at the end.