

- 4 Furlion Co manufactures heavy agricultural equipment and machinery which can be used in difficult farming conditions. Furlion Co's chief executive has been investigating a significant opportunity in the country of Naswa, where Furlion Co has not previously sold any products. The government of Naswa has been undertaking a major land reclamation programme and Furlion Co's equipment is particularly suitable for use on the reclaimed land. Because of the costs and other problems involved in transporting its products, Furlion Co's chief executive proposes that Furlion Co should establish a plant for manufacturing machinery in Naswa. He knows that the Naswan government is keen to encourage the development of sustainable businesses within the country.

Initial calculations suggest that the proposed investment in Naswa would have a negative net present value of \$1.01 million. However, Furlion Co's chief executive believes that there may be opportunities for greater cash flows in future if the Naswan government expands its land reclamation programme. The government at present is struggling to fund expansion of the programme out of its own resources and is looking for other funding. If the Naswan government obtains this funding, the chief executive has forecast that the increased demand for Furlion Co's products would justify \$15 million additional expenditure at the site of the factory in three years' time. The expected net present value for this expansion is currently estimated to be \$0.

It can be assumed that all costs and revenues include inflation. The relevant cost of capital is 12% and the risk free rate is 4%. The chief executive has estimated the likely volatility of cash flows at a standard deviation of 30%.

One of Furlion Co's non-executive directors has read about possible changes in interest rates and wonders how these might affect the investment appraisal.

Required:

- (a) **Assess, showing all relevant calculations, whether Furlion Co should proceed with the significant opportunity. Discuss the assumptions made and other factors which will affect the decision of whether to establish a plant in Naswa. The Black Scholes pricing model may be used, where appropriate.** (16 marks)
- (b) **Explain what is meant by an option's rho and discuss the impact of changes in interest rates on the appraisal of the investment.** (5 marks)
- (c) **Discuss the possibility of the Naswan government obtaining funding for further land reclamation from the World Bank, referring specifically to the International Development Association.** (4 marks)

(25 marks)