HyeneG*

Suppose that the stock price of HyeneG is currently 25.00 €. Consider a 3-month European call option on HyeneG with a strike price of 26.00 €. The (continuous) expected return of HyeneG is 15% and the volatility is 30% per annum. The risk-free interest (with continuous compounding) is 4%. The expected return of the market portfolio is 7%. No dividend will be paid during the next 3 months.

Consider a binomial representation of the stock price with one step per month.

1. Give a binomial representation of the evolution of the stock price
2. What is the expected return over one month? What is the beta of the stock?
3. How could you create one call option?
4. Redo same question with a European put option
5. Using put-call parity, check your previous answer.
6. Calculate the probability of an up movement in a risk neutral world.
7. What is the expected return over one month in a risk neutral world?
8. What is the value of one call option in a risk neutral world?
9. Would your answer apply to an American call option? If no, when would this option be exercised and what would be its value?

---

* André Farber prepared this case as a base for class discussion.