BAF641: Assignment 2

(Due: 6 PM. Oct. 6, 2022)

1. Choose any ELS written on one underlying asset. To find an example, you may visit homepage of any security investment bank. Specify the name. Explain payoff structure.

2. What is your model? You may use a market model but you can employ other model. Specify your parameters. How do you estimate them?

3. Price your ELS using Crank-Nicholson FDM method. The matrix equation should be described in detail for your document when you apply Thomas Algorithm.

4. Compare your price with the price suggested by the bank. If there is a difference between them, explain the possible reason.

5. Simulate paths with the same model as you employ and price ELS. Compare your answer with the result of simulation.

6. Calculate Greeks: delta, gamma and vega. Be specific your units of Greeks. For example, you need to specify how volatility changes to calculate vega.

7. Graph the relation between ELS prices and the underlying asset. Graph the relation between deltas and the underlying asset.