To: **Computational Finance Course Participants**
Fr: **Frederik Kryger-Baggesen**
St: **Week 1**
Dt: **26 Apr 2024**

Agenda

Class 26 Apr 2024 13:15-15 in room ??

Bring your Windows laptop. We recommend that you try starting on the list below before class on Friday.

A few introductory remarks about the course, and then we will get practical.

To do list

Install latest Visual Studio C++ 2022 community version on your laptop. Include the module 'Desktop development with C++'.

Download/Clone the git repository 'CompFin' from GitHub:
https://github.com/brnohu/CompFin

Open Week1/xladdin/CompFin.sln and follow Week1/slnSetup.pdf

Run the spreadsheet bachelier.xls through the debugger.

Check the function xBachelierCall () against handmade calculations in a spreadsheet.

Test the function xBachelierImplied().

Write a new class kBlack that has the same methods as kBachelier.

Make xll functions xBlackCall() and xBlackImplied() that expose kBlack::call() and kBlack::implied() respectively.

Test the functions xBlackCall() and xBlackImplied().

Notes

Bachelier formula:

$$c = (s-k)\Phi(x) + v\sqrt{T}\phi(x) \quad , x = \frac{s-k}{v\sqrt{T}}$$

Black formula:

$$C = S\Phi(x_+) - K\Phi(x_-) \quad , x_\pm = \frac{\ln(S/K)}{v\sqrt{T}} \pm \frac{1}{2}v\sqrt{T}$$