MSFM, Fixed Income Derivatives (33601)

Lab Assignment 6: Black's Model

This assignment is individual

Due Date: May 19, 2016 This is an individual assignment.

1. Using Black's formulas, derive analytically a put-call parity relationship for caps and floors.

Submit the formulas of the derivation either legibly handwritten or edited with an equation editor.
Hint: Revisit the instrument that you found to be the same as the 2-year interest-rate collar that you built with the cap and floor in the Numerix Lab Assignment #3, part b).

2. Using Black's formulas, derive analytically a put-call parity relationship for European swaptions. Submit the formulas of the derivation either legibly handwritten or edited with an equation editor.

Hint: Look for a relationship between the value of a payer's swaption minus the value of a receiver's swaption, and the value of a forward-starting swap to pay a fixed rate and receive LIBOR.