Numerix Lab Assignment 3

Course: Fixed Income Derivatives
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This is a Numerix Lab Session group assignment.

1. Pricing Caps and Floors

- Use the two ways to price a cap/floor with Numerix:

1. Use the Object Builder under the Excel ribbon labeled "Numerix" to create an Instrument Object and an Analytic Object in the corresponding areas designated for this purpose on the "CapFloor" worksheet. Do this just for a cap. For the Analytic Object on the right, replace the "QUOTE" input with "SIGMA1" and enter the appropriate value from the input panel on the far left. Also replace the "Timer" output at the bottom with "Price". The value will update automatically. Use the US OIS and LIBOR curves for 3/11/2016 that have been bootstrapped on the first two worksheets, respectively, for pricing the cap.

2. Use the appropriate Numerix add-in functions in Excel to create an Instrument Object and an Analytic Object. This has already been done for a cap in cells D59:H59. Do the same for a Floor on the line below in the highlighted cell E60. Compare the price of the cap that you got in cell H59 with the cap price that you obtained by using the Object builder above. Put the difference in the highlighted cell F30. Again, use the US OIS and LIBOR curves for 3/11/2016 that have been bootstrapped on the first two worksheets for pricing the cap and the floor.

2. Pricing Collar

- An interest rate collar is a combination of a long position in a cap and a short position in a floor with the same strikes.

What other instrument is the same as the 2-year collar that you can build with the cap and floor you've created previously?
Hint: This is basically the same as deriving a call-put parity relationship for caps and floors. Use the forward-starting swap that has been created and priced on line 61. Populate the highlighted cells J58:L59, so that the difference in cell L59 is almost zero.