# Analytical Finance I

Jan Röman   
Department of Mathematics and Physics  
Mälardalen University, Sweden  
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Per Pettersson

# Seminar Strategies

An option strategy is largely a concurrent combination of one or more options where one let the options parameters vary in relation to one another. The simplest option strategy would be the buying or selling of a single option. By combining diverse options it is possible to create an infinite number of option strategies. The choice of rational strategy off course depends on how you as actor on the options market believes/predicts the market conditions will change over time.

## The Excel Sheet Strategy Application

The Seminar.xlsm application behavior is based on the choice of four different options. For some reason the creator of this application believes that a *good* options model consists of the concurrent combination of four options; nothing more nothing less.

## Usage Input

The end-user sets the parameters for each of the four options; basically populating the Black-Sholes equation with input. Apart from setting the normal five BS parameters, the user sets the position and option type for each option in the strategy. Normally the underlying is of type a standardized forward. The underlying inputs are also set in the excel application.

## Data Creation

Data for each option is built up in matrix form with varying maturity and underlying price; a matrix of profit nodes is created for each option in the strategy. This profit value also depends on the number of underlyings in the contract. Typically one buys 100 underlyings per contract (the underlying is bought in “blocks”).

## The Matrices

The vertical underlying price is based on the input underlying price as a percentage.  
The time to maturity in each matrix is at the moment fixed.

## Strategy Sum Matrix

The Strategy Sum Matrix is just the arithmetic sum of the four options and the underlying forward.

## Graphs

3D graphs for each matrix is presented for visual cue of the data.

## Code

VBA code for Black-Sholes and underlying price is implemented.